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The ethics of Contact Precautions in hospital care: An interpretive description

by

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Declaration of originality

I certify that the intellectual content of this thesis is the product of my own work and that all assistance received in preparing this thesis and sources have been acknowledged, nor has this thesis been submitted for any degree or other purposes.

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Statement of ethical conduct

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and Institutional Biosafety Committees of the University.

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Abbreviations

ACSQHC	Australian Commission on Safety and Quality in Health Care
CPE	Carbapenemase-producing Enterobacterales
ESBL	Extended spectrum beta-lactamase
HAI	Healthcare associated infection
ICU	Intensive care unit
MRGN	Multi-resistant Gram negative
MRO	Multi-resistant organism
MRSA	Methicillin resistant <i>Staphylococcus aureus</i> (meticillin resistant <i>Staphylococcus aureus</i> in UK)
NHMRC	National Health and Medical Research Council
PPE	Personal protective equipment
VRE	Vancomycin resistant Enterococcus species.

Glossary of terms: infection prevention and control

National Health and Medicine Research Council (2019)

Airborne Precautions	A set of practices used for patients known or suspected to be infected with agents transmitted person-to-person by the airborne route.
Antibiotic	A substance that kills or inhibits the growth of bacteria, fungi, or parasites.
Antimicrobial resistance	Failure of an antimicrobial to inhibit a microorganism at the antimicrobial concentrations usually achieved over time with standard dosing regimens.
Antimicrobial stewardship	An ongoing effort by a health service organisation to reduce the risks associated with increasing antimicrobial resistance and to extend the effectiveness of antimicrobial treatments. It may incorporate several strategies, including monitoring and review of antimicrobial use.
Aseptic technique	An aseptic technique aims to prevent microorganisms on hands, surfaces, and equipment from being introduced to susceptible sites. Therefore, unlike sterile techniques, aseptic techniques can be achieved in typical ward and home settings.
Bloodstream Infection	The presence of live pathogens in the blood, causing an infection.

Carbapenemase producing Enterobacterales (CPE)	Members of the Enterobacteriaceae that are resistant to carbapenems, a class of 'last resort' antimicrobials for treating serious infections. NOTE: Taxonomic studies have narrowed the definition of the family Enterobacteriaceae. Some previous members of this family are now included in other families within the order Enterobacterales, and this term is now the accepted nomenclature.
Cohorting	Placing patients who are infected with the same pathogen together in the same room (mostly after consultation with an infection control expert).
Colonisation; Colonised	<p>The sustained presence of replicating infectious agents on or in the body.</p> <p>Author's note: The term colonised, or colonisation, is generally used when the pathogen is present and not causing harm (infection) to the person. For the purposes of improving readability of this thesis, the word colonised (or colonisation) is used in preference to the correct terminology 'colonised or infected' to denote the status of people in whom the pathogen has been identified, whether it is causing infection or not. The rationale for this is that any person with an infection is also colonised with the same pathogen.</p> <p>Infection prevention and control policies require Contact Precautions to be applied whether the multi-resistant organism (MRO) is causing infection or not.</p>
Communicable disease	An infection that can be transferred from one person or host to another.
Contact	The touching of any patient or their immediate surroundings or performing any procedure.
Contact Precautions	A set of practices used to prevent transmission of infectious agents that are spread by direct or indirect contact with the patient or the patient's environment.
Droplet Precautions	A set of practices used for patients known or suspected to be infected with agents transmitted by respiratory droplets.
Environment	The physical surroundings in which health care is delivered, including the building, fixtures, fittings, and services such as air and water supply. Environment can also include other patients, consumers, visitors, and the workforce.
Hand hygiene	A general term applying to processes aiming to reduce the number of microorganisms on hands. This includes application of a waterless antimicrobial agent (e.g., alcohol-based hand rub) to the surface of the hands; and use of soap/solution (plain or antimicrobial) and water (if

	hands are visibly soiled), followed by patting dry with single-use towels.
Health care	The prevention, treatment and management of illness and injury, and the preservation of mental and physical wellbeing through the services offered by clinicians, such as medical, nursing, and allied health professionals.
Healthcare associated infections	Infections acquired in healthcare facilities ('nosocomial' infections) and infections that occur as a result of healthcare interventions ('iatrogenic' infections), and which may manifest after people leave the healthcare facility.
Healthcare facility	Any facility that delivers healthcare services. Healthcare facilities could be hospitals, general practice clinics, dentistry practices, other community-based office practices, day surgery centres, emergency services, domiciliary nursing services, long-term care facilities, aged care facilities, indigenous medical services, alternative health provider facilities and other community service facilities, such as needle exchanges.
Horizontal measures	A horizontal approach to infection prevention and control measures refers to broad population level approaches attempting reduction of all infections due to all pathogens. Standard Precautions are horizontal infection prevention and control measures.
Incidence	The number of new events (e.g. cases of disease) occurring in a population over defined period of time.
Infection	Infection is the term used to describe a situation where invasion of infectious agents into the body results in an immune response, with or without symptomatic disease.
Invasive procedure	Entry into tissues, cavities or organs or repair of traumatic injuries.
Microorganism	Most infectious agents are microorganisms. These exist naturally everywhere in the environment and not all cause infection e.g., 'good' bacteria present in the body's normal flora. Parasites, prions, and several classes of microorganism—including bacteria, viruses, fungi, and protozoa—can be involved in either colonisation or infection, depending on the susceptibility of the host.
Multi-resistant organism (MRO)	In general, bacteria that are resistant to one or more classes of antimicrobial agents and are usually resistant to all but one or two commercially available antimicrobial agents.
Patient	A person who is receiving care in a health service organisation.

Personal protective equipment (PPE)	A variety of barriers used alone or in combination to protect mucous membranes, skin, and clothing from contact with infectious agents. PPE includes gloves, masks, respirators, protective eyewear, face shields, and gowns.
Prevalence	The number of events (e.g., cases of disease) present in a defined population at one point in time.
Risk	The chance of something happening that will have a negative impact. Risk is measured by the consequences of an event and its likelihood.
Screening	A process of identifying patients who are at risk, or already have a disease or injury. Screening requires enough knowledge to make a clinical judgement.
Standard Precautions	Work practices that constitute the first-line approach to infection prevention and control in the healthcare environment. These are recommended for the treatment and care of all patients.
Surveillance	Disease surveillance is an epidemiological practice by which the spread of disease is monitored to establish patterns of progression. The main role of disease surveillance is to predict, observe and minimise the harm caused by outbreak, epidemic, and pandemic situations, as well as increase knowledge as to what factors might contribute to such circumstances.
Transmission-based Precautions (formerly additional precautions)	Extra work practices in situations where Standard Precautions alone may be insufficient to prevent infection (e.g., for patients known or suspected to be infected or colonised with infectious agents that may not be contained with Standard Precautions alone).
Vancomycin Resistant Enterococci (VRE)	Enterococci are Gram-positive bacteria that are naturally present in the intestinal tract of all people. Vancomycin is an antibiotic to which some strains of enterococci have become resistant. These resistant strains are referred to as VRE and are frequently resistant to other antibiotics generally used to treat enterococcal infections.
Vertical measures	Enhanced infection prevention and control measures, over and above those used for patients not known to be colonised or infected, are applied to patients known to be colonised with a pathogen. Contact Precautions for patients colonised with an MRO are an example of vertical measures.

Glossary of terms: bioethical principles

(Beauchamp & Childress, 2013)

Autonomy	Derived from the Greek <i>autos</i> (self) and <i>nomos</i> (rule, governance, or law) and since extended to the individual. Personal autonomy encompasses self-rule that is free from controlling influence of others and limitations that prevent meaningful choice, such as inadequate understanding.
Beneficence	The principle of beneficence relates to the moral requirement to promote optimal well-being. It applies to the care of the individual as well as the promotion of societal well-being. The principle of beneficence has utility in balancing benefits, risks, and costs to promote optimal health outcomes through health policy and in making decisions about individual patient care.
Justice	The principle of justice considers concepts such as fairness, discrimination, and equity in health service provision as well as health outcomes. There is an expectation that equals will be treated equally, and factors that an individual has no control over (such as colonisation with an MRO) should not compromise the quantity or quality of the healthcare they receive, or negatively impact their health outcomes.
Non-maleficence	The principle of non-maleficence places an obligation to abstain from causing harm to others. It requires intentional avoidance of actions that cause harm. The concept of harm relates to actions that have physical, emotional, or dignitary, negative consequences. Infringements to the principle of non-maleficence may be justified if harms are outweighed by other ethical principles and rules such as beneficence.

Abstract

Background

A person with an infection is considered a reservoir for a pathogen and capable of facilitating its ongoing transmission to others. Within health ethics, an infected person is understood as posing a risk of harm to others whilst needing healthcare to protect their wellbeing. This creates a potential ethical discord if control measures are not proportional to the risk, or if harms outweigh benefits. Public health policymakers are committed to controlling incidence of antibiotic resistant pathogens in hospitals. Control measures (now known as Contact Precautions) were developed in the late 1970's however multi-resistant organisms (MROs) continue to occur in hospitals and antimicrobial resistance remains a global health risk. Negative consequences of Contact Precautions on patients, including psychological harm and compromised healthcare delivery, are recognised. Authors reporting these negative consequences have called for evidence-based change, but these appeals have been countered by researchers reporting conflicting findings. Evidence wars have resulted in an inertia of practice despite acknowledgement that the evidence supporting Contact Precautions efficacy is poorly constructed.

The aim of this research was to explore the experience of Contact Precautions within a framework of bioethical principles which includes: respect for autonomy, justice, non-maleficence, and beneficence. The objectives were to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism (MRO). The research question asked: 'Are Contact Precautions ethically justifiable in contemporary hospital care?'

Method

Interpretive description, a methodological approach recognised as having practical application in improving nursing knowledge and practice, was used. The ethos of this qualitative approach mirrors recognised strengths of empirical ethical inquiry. Both have the power to discover the reality of a given situation, and to use the findings to develop insights into improved policy and practice. Theories of planned behaviour, principles of bioethics, and prior experience in infection prevention and control nursing provided the theoretical scaffold. The study was conducted in a

publicly funded health system in regional Australia, with Human Research Ethics Committee (HREC) approval. Thirty-three participants (9 patients, 13 nurses, 7 doctors and 4 allied health professionals) were purposively recruited. Semi-structured interviews were recorded and transcribed for analysis. NVivo 12 was used to organise and manage the data. Data analysis of interview transcripts alongside research journal entries involved thematic and axial coding. Themed findings were explored in the context of the research question and theoretical scaffold alongside contemporary published research.

Findings

Four themes were identified, with sub-themes adding depth and texture. The first theme is 'Powerlessness moving to acceptance'. Contributory sub-themes are communication, and healthcare hierarchies. Patients are denied the opportunity to provide informed consent prior to diagnostic testing. Additionally, patients colonised with an MRO are inadequately informed about Contact Precautions and do not consider themselves active partners in decision-making. Health professionals trust Contact Precautions but hold concerns that they stifle their personal autonomy as a health professional. Neither group feels able to affect change despite feeling uncomfortable about policy requirements. They tolerate Contact Precautions as a necessary part of hospital life.

The second theme 'You feel a bit of a pariah' describes staff reluctance to enter the rooms of patients when Contact Precautions are implemented, and patients' feelings of being untouchable. This was reinforced by staff wearing yellow gowns and other personal protective equipment (PPE), and signage displayed at doorways. Visual reminders of patient's contaminated status were reinforced by auditory messaging such as the use of words such as 'dirty'.

The third theme is 'Others need protection, but I need looking after too'. Patients are committed to following the rules despite noticing their care being compromised. Health professionals also recognised patient care might be compromised by Contact Precautions but remained committed to the policy as a means of protecting themselves, their family, or their career.

The fourth theme is 'Doing Contact Precautions is not easy'. Health professionals find Contact Precautions challenging because of confusing policy variations, and physical discomfort when wearing PPE. They experience negative emotions when balancing the need to follow a trusted policy with their professional and personal

values when they notice associated harm for their patients, their workplace culture and professional relationships, or the environment.

The findings corroborate other research reports, specifically those that describe the negative and harmful impact of Contact Precautions on hospital patients. Conflicts are identified with the bioethical principle of respect for personal and professional autonomy due to a lack of adherence to the requirements for informed consent, and sub-optimal communication to patients and health professionals. Patients are subjected to inequality of care provision and discriminatory practices, which breach the principle of justice. Contact Precautions potentially elicit stigma for patients, and moral distress and inter-personal conflict for staff, breaching the principle of non-maleficence. Under the principle of beneficence, a pluralistic cost–benefit assessment of Contact Precautions situates them as a low-value practice.

Health professionals require training to develop skills and confidence in discussing antimicrobial resistance and hospital infection prevention measures with patients, and to improve their practice from an ethical standpoint. Overt leadership that supports staff in speaking out when they observe patient safety risks, and role modelling of expected exemplary practice, would reduce the stress and harm experienced by health professionals in relation to Contact Precautions. Further research into health professionals' attitudes and beliefs around infection prevention policy, and the role of informed consent relating to clinical specimen collection and testing, would be beneficial.

Conclusion

Contact Precautions present a significant challenge to organisational culture, professional well-being, and the provision of person-centred ethical care. The identified negative impacts of Contact Precautions on patients and health professionals confirm they breach established ethical paradigms. The wider evidence base fails to confirm superiority of Contact Precautions over Standard Precautions in preventing MRO acquisition. In conclusion, the ethical costs of Contact Precautions outweigh the benefits, and Contact Precautions are confirmed as an example of low-value practice. It is time for the long-standing evidence wars to end as this study confirms that the use of Contact Precautions in the management of patients colonised with an MRO is not ethically justifiable in contemporary hospital care.

Chapter 1. Introduction to the research topic and question

1.1 Introduction

I am an infection prevention and control nurse with many years of experience in both hospital and community-based clinical roles. I currently work in a full-time capacity as manager for an infection prevention and control team and have undertaken this research as a part-time PhD candidate. The intention of this introductory chapter to my thesis is to describe the research setting and my motivation for undertaking research in this field. The chapter also provides some technical background to readers who may be unfamiliar with this area of nursing interest. This discussion then leads to the formulation of my research question and a description of the thesis structure.

The research described here was undertaken within three acute care hospitals situated to the south of Sydney in Australia. These hospitals are managed by a publicly funded healthcare organisation that provides hospital and community-based health services to a population approaching 400,000 people. This research commenced in 2016, with data collection being undertaken between January 2018 and March 2019. Progress with data analysis was curtailed by the public health restrictions imposed to manage the COVID-19 pandemic that emerged in early 2020, and the increased workload that the pandemic created for me and the infection prevention and control team that I manage.

The central motivation for this research is my belief that healthcare associated infection must not be considered a normal part of modern hospital care. Patients deserve to be protected from preventable infections in hospitals, and all patients deserve to be treated fairly and not have their care compromised by the infection prevention and control precautions that are applied.

Infections occurring as a complication of a healthcare procedure, or hospital admission, have long been recognised as a significant risk to patient safety (Gilbert & Kerridge, 2019; Newsom, 2001). It is estimated that between 35% and 55% of healthcare-associated infections are preventable (Schreiber et al., 2018). Following the widespread use of antibiotics since the discovery of penicillin in 1929, multi-resistant organisms (MROs) became an increasing area of concern during the latter quarter of the 20th century (Newsom, 2003b, 2004a). Modern hospitals are built and equipped to facilitate optimal hygiene, and health care staff are trained extensively in infection prevention and control. Nonetheless healthcare associated infection is

the most frequent complication of healthcare experienced by patients (National Health and Medicine Research Council, 2019).

As has previously been observed in a quotation often attributed to Henry Ford, 'If you always do what you've always done, you'll always get what you've always got.' (Goodreads Inc., 2021). For over forty years Contact Precautions have been applied in the management of hospital patients found to be colonised with an MRO (Garner & Simmons, 1983). Despite this, hospital-associated MRO acquisitions and infections continue, and the global problem of increasing antimicrobial resistance remains a concern (National Health and Medicine Research Council, 2019). This indicates that decades of control measures and technical advances have not been effective in mitigating the risk of infection for hospital patients.

Concerningly, there are numerous reports in the healthcare literature as well as in popular media, indicating that some of the precautions taken to prevent infections from spreading in hospitals, are harmful to patients (Morgan et al., 2009; Purssell et al., 2020). My motivation for embarking on this research journey was to understand more clearly the risks and benefits of the conventional approach to the prevention and control of patients colonised or infected with a multi-resistant organism (MRO), practices known as Contact Precautions. I decided to explore these practices through a bioethical lens because I held concerns about the possibility of these commonly employed precautions being ethically questionable because of the reported harms. I formulated the research question: 'Are Contact Precautions ethically justifiable in contemporary hospital care?' with the objective of sharing the findings and making recommendations for ethically improved infection prevention and control practice, from both patients' and health professionals' perspectives. It was expected that recommendations for further research would also be made.

1.2 History of infection prevention and control

Infections have been a concern for mankind throughout history. This is evidenced by the description of several infectious diseases, including malaria, tetanus, and tuberculosis, in the series of works known as the 'Corpus Hippocraticum'. These writings are credited to Hippocrates, who was born in Greece in 460BC, but are widely considered to be the collective work of many of his students and peers, rather than his work alone (Pappas et al., 2008). Hippocratic philosophy encourages doctors to use objective observation and critical deductive reasoning to explore the physical causes of illness through empiric means. Hippocrates' ethical code, known

as the Hippocratic Oath, remains a guiding set of principles for modern medicine (Boylan, 2019; Pappas et al., 2008).

Since Hippocrates' time the influence of infections in shaping the progression and advancement of healthcare is clear (Pappas et al., 2008; Smith et al., 2012). Between the 5th and the 18^h centuries AD wealthy people received their medical care in their own homes rather than in hospitals. Hospitals were unsanitary places, with straw mattresses on beds that were shared by more than one patient at a time. Corpses were not removed in any hurry, there was no asepsis or anaesthesia for surgery. Post-operative mortality rates were extremely high due to the risk of 'hospital gangrene'. Bandages would be reused without washing in between, and surgeon barbers wore overcoats to protect their own attire during operations, however, these overcoats were not changed or washed between patients. Infections such as cholera, tetanus, hospital gangrene and tuberculosis were commonly acquired and an 8% mortality rate for doctors and their attendants has been reported (Smith et al., 2012).

From the 18th century onwards, many advances were made as understanding of human anatomy and physiology improved. However, these advances increased the risk of complications, and doctors recognised a need for those risks to be prevented and managed. In the mid-19th century, developments in anaesthesia enabled more complicated and extensive surgical procedures to be undertaken (Robinson & Toledo, 2012), but the complexity of these procedures increased the risk of infection. In the mid-nineteenth century Joseph Lister worked on surgical asepsis to prevent surgical wound infections (Newsom, 2003b), and Ignaz Semmelweis described the impact of hand hygiene in preventing puerperal sepsis (Newsom, 2001). These advances were made by physicians and surgeons, however the influence of a nurse, Florence Nightingale, on firstly describing the epidemiology of hospital infections, and then implementing a range of actions to prevent them from occurring, cannot be understated. Despite being dubious about Pasteur's newly emerging germ theory, the requirements she placed on hospital managers to maintain sanitation, to ensure good ventilation, to provide a minimum distance between beds, and to provide consistent training to nurses, set the foundation for modern infection prevention and control principles and practice (Newsom, 2003a).

1.3 Current practices in infection prevention and control

Florence Nightingale died in 1910 before Fleming's discovery of penicillin in 1929 and its further development and introduction to mainstream medical practice by Florey and Chain in the mid-20th century (Bennett & Chung, 2001). Hopes that this drug would lead to the eradication of bacterial infections were soon dashed with the emergence of strains of bacteria that were resistant to penicillin. This meant that the antibiotic would no longer work, and that patients would likely succumb to infections as had been the case in Nightingale's time (Newsom, 2004a). Methicillin resistant *Staphylococcus aureus* (MRSA) was widely considered to be a more virulent form of *S. aureus* than the already recognised as dangerous antibiotic sensitive strain. As further understanding of the impact that this would have on hospital patients, and concerns about staff safety grew, so did attempts to stop the spread of already resistant organisms, and the further development of bacterial resistance to other newly developed antibiotics (Newsom, 2004b).

In 1979 the first MRSA management recommendations were published in the USA (American Hospital Association, 1979) and Contact Precautions, including isolation of the patient, and the use of personal protective equipment (PPE) by staff, were included in hospital isolation guidelines (Garner & Simmons, 1983). As the numbers of antimicrobial resistant pathogens increased, so did concerns about the potential for widespread morbidity and mortality due to the inability to treat bacterial infections. Management recommendations were founded on the precautionary principle, where a deductive approach was taken for strong control measures on a background of incomplete knowledge and understanding about the risks imposed by MROs or about the effectiveness of the proposed measures (Bryan et al., 2007; Harris et al., 2019).

Application of the precautionary principle is commonly seen in situations where significant harm occurs or is anticipated, particularly in response to new and emerging threats. The limited availability of scientific, technical, or empirical understanding of cause and effect, means that a conservative approach to controlling the hazard is taken. Thus, control measures may frequently be disproportionate to the actual threat, once time and experience lead to greater understanding about the harm caused by the hazard, and by the control measures, as well as the beneficial results that have been achieved (Degeling et al., 2015; Resnik, 2004).

The inclusion of MRSA as a pathogen requiring isolation (or quarantine), in these guidelines, demonstrates that early management recommendations (American Hospital Association, 1979; Garner & Simmons, 1983) were derived from public health principles where individual rights may be compromised for the greater good (Kirkland & Weinstein, 2009; Millar, 2009). This gives an indication of the depth of concern about antibiotic resistance at that time.

These American guidelines provided the foundation for policy development in other healthcare jurisdictions and Contact Precautions are now globally adopted as a core strategy for MRO prevention in hospitals (Canterbury Health Board, 2015; Ireland Department of Health, 2013; Loveday et al., 2014; Public Health Agency of Canada, 2012; Wigglesworth, 2015). In Australia the practice of isolating colonised or infected hospital patients, and the application of Contact Precautions, has been extended beyond MRSA to include other antibiotic resistant bacteria including vancomycin resistant Enterococci (VRE), and carbapenemase-producing Enterobacterales (CPE) (National Health and Medicine Research Council, 2019). Although MROs are considered a significant concern in healthcare settings, they are not listed as statutory notifiable conditions under the NSW Public Health Act (NSW Government, 2010).

Contact Precautions require the patient to be isolated in a single room. Staff as well as visiting friends and family must wear PPE such as gowns and gloves when entering the room. Signage indicating the need for these precautions is displayed on the outside of the room, and an 'alert' message entered in the patient's electronic or paper hospital record to signal the need for Contact Precautions for future hospital admissions (Loveday et al., 2014; National Health and Medicine Research Council, 2019; Western Australia Department of Health, 2013; Wigglesworth, 2015).

Whilst activation of the precautionary principle can be considered acceptable as an approach to making decisions under ignorance, control measures should be proportionate to the degree of plausible and serious risk (Resnik, 2004). As knowledge of the identified hazard develops over time, so should understanding of any beneficial and harmful impacts of the control measures. The precautionary principle can enable re-evaluation of clinical practices, using quantitative and qualitative information to balance benefit versus harm, realism, proportionality, and consistency (Resnik, 2004). However, in the case of Contact Precautions for the management of patients found to be colonised with an MRO this re-evaluation has been slow in materialising.

Early in my infection prevention and control career I accepted that Contact Precautions were imposed on certain individuals to protect the wider hospital community. I did not question the fact that patients were not asked to consent to Contact Precautions being applied and were generally not provided with information explaining that Contact Precautions might be put in place depending on the results of lab tests such as wound swabs or urine sampling. I was happy to have patients put at the end of operating lists solely because of their microbiological results. Indeed, I wrote policies stipulating that this should be the case.

Over time however, I became aware that the application of these policies might be ethically questionable. This concern is one that has been voiced by other writers (Bryan et al., 2007; Chavigny & Helm, 1982; Gilbert et al., 2009; Rump et al., 2018) including one who notably warned, 25 years ago, that to ignore the ethical aspects of infection control risks a 'gradual slide into unethical conduct' and that to ignore ethics in infection control would 'risk the soul of our profession' (Herwaldt, 1996, p. 113). As my awareness of the potential for Contact Precautions to trigger adverse outcomes in patients grew, so did my concern about the ethical standing of the policy.

The next section of this chapter describes some personal professional experiences that promoted this increasing disquiet. These accumulating concerns have been my motivation for undertaking the research described in this thesis, to answer the question of whether Contact Precautions are ethically justifiable in contemporary hospital care.

1.4 Professional and personal motivation for undertaking this research

As an experienced infection prevention and control nurse manager at the time this work was undertaken, I was responsible for the strategic and operational management of the infection prevention and control service in a publicly funded healthcare organisation in NSW, Australia. In this role I acknowledged my responsibility to promote safe, efficient, effective, and ethical healthcare provision, but over the years, had increasingly felt a degree of personal and professional uncertainty about the benefits of Contact Precautions in the management of patients colonised with an MRO. I knew, without testing every patient for carriage of an MRO on their admission to hospital, it was very likely that at any one time several as-yet unidentified colonised patients would be in the hospital, without Contact Precautions

in place (Karki et al., 2012; Skjøl-Årtil et al., 2019). I asked myself questions such as, If the purpose of Contact Precautions is to prevent transmission of multi-resistant pathogens in hospitals, why do we not apply them to all patients? Are we doing harm by only applying them to the people we know are colonised? Are staff and other patients being put at risk if we are not testing everyone to determine whether Contact Precautions should be applied?

I saw first-hand the psychological distress that some patients and their families experienced when being managed under Contact Precautions in hospital. I was also aware of the actions that some of them would impose on themselves to protect their loved ones on their discharge home. I asked myself what aspects of Contact Precautions were most likely to prompt these responses. Was it the single room isolation? Was it the need for staff to wear PPE such as gloves and aprons? Was it the quality of information that these people had been given? I wondered if patients and their families recalled having an explanation provided to them to help them to understand the reasons for the Contact Precautions being in place. I knew that patients in this situation were not generally given a choice about whether they were accommodated in a single room, but I was unsure whether patients who had a clinical microbiological specimen collected were made aware of what could happen if an MRO were to be found. This raised questions about how well informed they had been prior to giving consent for the specimen to be collected, and in some cases whether consent was even expressly requested.

I recognised that in asking myself these questions, I was revealing an internal concern that hospital infection prevention and control policy might be a barrier to the fulfilment of patients' healthcare rights, particularly those relating to privacy, respect, partnership, and information (Australian Commission for Safety and Quality in Healthcare, 2020). The Australian Charter for Healthcare Rights states that patients have rights to: access, safety, respect, partnership, information, privacy, and the right to give feedback (Australian Commission on Safety and Quality in Healthcare, 2020). These healthcare rights reflect ideas that contribute (along with notions like voluntariness and ability to choose) to the concept of autonomy (Beauchamp & Childress, 2013; Schermer, 2002). Traditionally, bioethicists have understood autonomy as being exemplified by a patient being able to have control of their own life according to their own values and preferences. A person exercises autonomy by making informed choices about what they do, and what they allow others to do to them. In the healthcare context this means that for patients to be able to have autonomy, they must be actively involved in decisions that are made about their

healthcare journey (Cole et al., 2014; Schermer, 2002). As my experience in the field of infection prevention and control grew, I started to question whether patients were properly enabled to make those decisions.

My interest in the impact that Contact Precautions have on autonomy was not limited to patients, but also concerned the professional autonomy of health care workers. These reflections took me beyond traditional bioethics' understanding of autonomy, and better reflected the idea of 'relational autonomy' (Ells et al., 2011) and consideration of the ethical importance of professional autonomy in health care (Pellegrino, 1994).

Health professionals are highly skilled and trained individuals. In many ways they are explicitly required to make decisions about their clinical practice, and to justify their actions, based on their personal and professional knowledge and skills. There is an expectation that health professionals will exercise autonomy in their professional practice so that each patient is managed according to their individual needs (Bail et al., 2009; Gilbert & Kerridge, 2019). However, I saw that infection prevention and control policies were being applied homogenously to the management of patients found to be colonised with an MRO. There was rarely consideration of other patient-related factors when decisions were made about the application of Contact Precautions.

One example is the case of the elderly patient who continued to be isolated in a single room despite the medical team noticing a deterioration in his psychological state. According to his notes, this meant that he ought ideally, to have been nursed in the company of other people, near to the nurses' station so that closer observation could be achieved. When this gentleman attempted suicide in his single room the medical and nursing team members reported that they had felt uncomfortable about him being in isolation. None had asked for advice from the infection prevention and control team, nor had they challenged the application of the policy. This was shocking to me. Why were these skilled professionals able to contradict their professional judgement by seeing the infection prevention and control policy as having primacy over other identified patient-care needs? I was interested to find out whether there were other ways in which professional decision-making may be compromised by these policies.

In many hospitals people known to be colonised with an MRO wait until the end of the elective operating lists to go to theatre regardless of other clinical factors. These people are often subjected to cancellations, frequently at short notice, after they

have been starved for most of the day in preparation for their procedure. The cancellation would sometimes require them to return home for days, or even weeks, until the procedure could be rescheduled. Alternatively, they might be scheduled for the following day, and risk being cancelled once more having had two days without food or drink. These delays increased the likelihood of further deterioration in their condition, an increase in their pain and other symptoms. Ironically, their suboptimal nutritional and fluid status could also increase their likelihood of developing a post-operative infection (Schreiber et al., 2018).

Early in my infection prevention and control career I developed a conviction that there was an element of injustice bordering on discrimination when this happened. I had no doubt that these patients were at risk of further harm if they had been nil by mouth all day and then were cancelled or had a delay in their surgical intervention by needing to be rescheduled to another time. These events often led to a lack of trust in the organisation and sometimes prompted complaints or legal action. The frustration felt by patients and their families was evident.

My ongoing professional interest and review of contemporary infection prevention and control literature revealed growing numbers of reports describing increased rates of non-infection related adverse events such as falls and medication errors affecting patients being nursed using Contact Precautions (Abad et al., 2010; Croft et al., 2015). I became aware that other infection prevention and control professionals shared my disquiet as they published reports showing how isolated patients were feeling stigmatised and disrespected, and perceived their hospital care to be compromised (Mehrotra et al., 2013; Rump et al., 2017).

I felt it important to recognise the possibility that imposing Contact Precautions might be causing harm to individual patients. I asked myself whether we were breaching that most fundamental of healthcare bioethical principles (Beauchamp & Childress, 2013), that of doing no harm, non-maleficence.

My concerns about harm were not limited to patients. I was aware that staff were frequently unsure of which patients required Contact Precautions, despite education, and communication systems being in place. I also witnessed the distress that some staff had felt when realising they ought to have been applying Contact Precautions in caring for a patient but had not. Staff frequently spoke about their worries that their wellbeing may have been put at risk and they were also concerned for the safety of their family members at home.

On several occasions, I had recognised conflicts between staff groups when individuals from one group observed members of another group breaching policy requirements. This was often reported by nursing staff who had experienced frustration and had difficult, and sometimes extremely distressing conversations with doctors, often senior doctors, when trying to encourage them to follow infection prevention and control policy. Hearing these stories, I was concerned that these interactions could create stress in both staff groups and could harm working relationships particularly when the traditionally hierarchical nature of the healthcare workplace and resultant power differentials come into play. I asked myself whether this could constitute harm to those staff members. Could this dynamic have a negative impact on team-working or on patient care? I was interested to understand why these conflicts were occurring. I wondered whether different professional groups hold contrasting attitudes or beliefs about Contact Precautions, and the value of infection prevention and control policies more generally. I was also interested to explore how the various professional groups perceive risks to themselves or others when caring for patients colonised with an MRO.

In these previous examples, the concepts of autonomy, (exemplified by a person's agency in decision-making), justice (where possible discriminatory practices have been seen), and potential harms (such as adverse events occurring as a direct result of Contact Precautions, or when professional relationships and culture are adversely affected), become apparent.

It is this experience that has motivated the formulation of the question that this research addresses, which is, 'Are Contact Precautions ethically justifiable in contemporary hospital care?'.

There are four subsidiary questions that together build an understanding that addresses this question. These questions are as follows:

Q1. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions?

Q2. How do the ethically relevant features of patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

Q4. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

The study objectives were to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism (MRO). Accordingly, this thesis answers the research question and makes recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO.

1.5 Thesis structure

This chapter has described the motivation and rationale for my decision to undertake this research. It has also introduced the research question and objectives for this research project.

Chapter 2 provides a literature review. The chapter presents an overview of the evidence base supporting the application of Contact Precautions in the hospital management of patients found to be colonised with an MRO. This includes a review of the literature relating to the contemporary understanding of some of the impacts that are felt by these patients. The chapter incorporates a paper co-authored by my supervising team, that was published in *Nursing Ethics* following a double-blind peer-review process (Harris et al., 2019).

Chapter 3 follows this literature review and provides discussion around the chosen research methodology, which is interpretive description (Thorne, 2016). The theoretical scaffolding is also outlined. Key components of this scaffolding are the principles of biomedical ethics, or Principlism (Beauchamp & Childress, 2013) and the Theory of Planned Behaviour (Ajzen, 1991).

Chapter 4 provides detail about the research setting and the potential ethical concerns relating to undertaking the research. The chapter describes the methods

that were used to recruit participants, and to collect and analyse the data in the context of the theoretical scaffolds.

The findings of this qualitative study are preceded by a short collection of selected participant vignettes, presented in Chapter 5. These are included to provide the reader with a connection to the people and the experiences that have been revealed. The chosen research approach, and its theoretical scaffold, each aspire to provide pragmatic and authentic support to improve healthcare practice. These vignettes provide a platform for the participants' voices to be heard, asserting the need for action to be taken to improve the management of patients colonised with an MRO in hospitals.

In Chapter 6 the research findings are described as themes and sub-themes, and the relationship of each theme to the participants is described. The themes and sub-themes are examined through a bioethical lens and mapped to relevant bioethical principles. The chapter describes the ethically relevant aspects of Contact Precautions, as experienced by the study participants, and explains how those experiences can be understood in terms of bioethical principles prevalent in the bioethics literature. In doing so the chapter answers the first two subsidiary research questions: **Q1**. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions? and **Q2**. How do the ethically relevant features of patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

Chapter 6 also develops consideration of the ethically relevant study findings to relevant studies that have been published in the infection prevention and control literature as well as within the wider context of health care ethics beyond Beauchamp and Childress's (2013) principles-based approach. This application of empirical and theoretical knowledge in interpreting the research findings enables exploration of the ethical standing of Contact Precautions from the full range of perspectives provided by the theoretical scaffold to this study. In doing so, the chapter answers **Q3**. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

The reason for using interpretive description research methodology was to ensure that the findings of this research could be used to inform and improve hospital infection prevention and control policies and practices. To that end, Chapter 7

summarises the identified ethical challenges associated with Contact Precautions and makes recommendations for improved policy and practice. It answers the fourth subsidiary research question; **Q4**. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way? by making several recommendations for clinical practice.

These recommendations call for explicit consideration, and mitigation, of the impact of Contact Precautions on the capacity of health service providers to meet well-established expectations about biomedical ethics. The recommendations apply to policy makers, infection prevention and control experts, health professional educators and health service managers as well as to individual health professionals. Recommendations for further research are also suggested. A schematic representation of the structure of this thesis is shown in Figure 1 (overleaf).

What is the problem?	Chapter 1 Introduction Provides background to the study setting and Contact Precautions. Describes the personal and professional experiences that suggest ethical conflict, and shaped the research question 'are Contact Precautions ethically justifiable in contemporary hospital care?'	Chapter 2 Literature Review A large body of literature confirms Contact Precautions for MRO management as challenging bioethical principles of respect for autonomy, justice, non-maleficence, and beneficence. No other studies have explored Contact Precautions from this bioethical standpoint.
	Chapter 3 Methodology Principles of biomedical ethics, Theory of Planned Behaviour, and prior knowledge and experience of Contact Precautions provided the theoretical scaffolding for this interpretive description study.	Chapter 4 Methods Methods used for participant recruitment, data collection and analysis are presented. The methods used to strengthen rigour so that findings and recommendations are credible and trustworthy, are described.
What did I do?	Chapter 5 Participants and interviews Study participants are introduced, and their experience of Contact Precautions is presented. Vignettes drawn from selected participants' transcripts illustrate the range of experience and insights that inform the findings.	
	Chapter 6 Presentation and discussion of findings Data analysis identified four key themes and 13 associated sub-themes. Each theme is presented as a separate section relating the findings to the perspective of patient or health professional participants. To answer the research question, each of the four themes and their sub-themes are explored and interpreted in the context of the theoretical scaffold. The chapter concludes with a consolidation of the interpretive description findings derived through balancing of the study findings against bioethical principles to deliver justification for the study conclusion.	
What did I find? and what does it mean?	Chapter 7 Conclusion The relevance of the research findings and the significance of the study to the evidence-base for infection prevention and control is articulated. Having answered the research question, the chapter concludes the thesis by using the insights gained to formulate several recommendations for future policy and practice relating to the infection prevention and control management of patients found to be colonised with multi-resistant organisms. A reflection on the public health and healthcare responses to emerging pathogens, using SARS-CoV-2 and methicillin resistant <i>Staphylococcus aureus</i> as examples, is provided as an epilogue to the thesis. Suggestions for further research opportunities are also made. This thesis presents a challenge to future policy makers to develop ethically sound systems and processes for the prevention and control of multi-resistant organisms in hospitals.	
	Appendices Examples of all information materials and consent forms, tables with additional findings, and conference poster presentations that have derived from this work, are given.	
Materials		

Figure 1. Thesis structure

1.6 Chapter summary

In this chapter I have described my professional journey as an infection prevention and control nurse whose standpoint has moved from confident and committed promotion of accepted infection prevention and control practices to one of concern that the harms incurred by these policies may not be ethically justified in contemporary hospital care. The chapter has briefly reviewed the history of hospital infection control and the evolution of contemporary, globally accepted practices implemented when managing the hospital care of people known to be colonised with an MRO.

The chapter introduces the research question which asks, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' It also presents the subsidiary questions used to build an understanding of what is ethically relevant and to identify potential opportunities to improve the management of hospital patients colonised with an MRO. The study objectives are to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism (MRO).

To frame the study, this chapter has described the research setting and explains the motivation for this research. This motivation is to supplement the existing infection prevention and control evidence base by bringing a bioethical perspective to the existing dialogue.

Chapter 2. Literature review

2.1 Introduction and background

As discussed in Chapter 1 isolation has been recommended for hospital management of patients colonised with methicillin resistant *Staphylococcus aureus* (MRSA) since the 1980s (American Hospital Association, 1979; Garner & Simmons, 1983). Since then, the practice of isolating hospital patients identified as carrying a wide range of antibiotic resistant bacteria has been widely adopted in the United Kingdom (Loveday et al., 2014; Wigglesworth, 2015), the USA (Calfée et al., 2014; Siegel et al., 2007), New Zealand (Canterbury Health Board, 2015) and Australia (National Health and Medicine Research Council, 2019; NSW Health, 2007a, 2007b). Despite the use of consistent terminology for these precautions, and similarities in approach, jurisdictional variations are found (Furuya et al., 2018; Harris et al., 2013; Isenman et al., 2016; Raupach-Rosin et al., 2016; Vuichard Gysin et al., 2018). A growing recognition that Contact Precautions may be associated with harmful impacts on patients and increasing doubt about their effectiveness in reducing MRO incidence in hospitals motivated me in embarking on the research that is described in this thesis. The purpose of this chapter is to present the three separate literature searches that were completed during the course of this research and thesis preparation.

The initial narrative literature review (Cronin et al., 2008) gathered information on a broad range of topics relevant to infection prevention and control and Contact Precautions. Bibliographic database searches were interrogated during 2015 and 2016, alongside a network approach where the reference lists of recent articles were traced, and other relevant and useful publications identified. Narrative literature reviews are described as having the potential to enable the researcher to gain an overview of the topic under consideration and to 'inspire research ideas by identifying gaps or inconsistencies in a body of knowledge' (Cronin et al., 2008, p. 38). The paper that resulted from this initial narrative literature review was published in a peer-reviewed journal (Harris et al., 2019), and is replicated later in this chapter.

A second literature review was done to take a focussed approach to exploration of the relevant ethical aspects of Contact Precautions. It was undertaken in April 2017 during the research design phase and prior to the data collection and analytical phases of the study. The search strategy and the findings of this literature search are covered in detail later in the chapter and in Figure 2 on page 40.

The same search strategy as was used for the second literature search was repeated in March 2021 to retrieve papers published since completion of the 2017 review. This search again focussed on ethical aspects of Contact Precautions and also sought publications relating to aspects of Contact Precautions that had become apparent during the data analysis phases of the study, that I had not previously considered or been aware of. Papers describing the efficacy of Contact Precautions in preventing MRO transmission in hospitals were also sought so that any new understandings on this important aspect of the thesis argument, could be included.

The initial literature search was undertaken with the objective of sourcing all relevant literature that could inform my concerns about the ethical standing of Contact Precautions in the management of hospital patients colonised with an MRO. The aim being to provide a comprehensive summary of the established evidence base at that time and to publish the findings as a means of drawing attention to the potential ethical conflicts associated with the long-standing practice of Contact Precautions (Harris et al., 2019). Part of the research contained within this chapter has been published as Harris, J., Walsh, K., & Dodds, S. (2019). Are Contact Precautions ethically justifiable in contemporary hospital care? *Nursing Ethics*, 26(2), 611-624.

2.2 Initial literature search and review

The first literature search commenced during 2015 as I embarked on the research that has culminated in this thesis. This was a broad-brush exploration of the contemporary and seminal literature that would enable me to understand the ethically pertinent aspects of Contact Precautions in the hospital management of patients colonised with an MRO. I sought literature that described the historical aspects of infection prevention and control, and MRO emergence and management strategies. I used the experiences described in the previous chapter to explore possible beneficial and potentially harmful aspects of Contact Precautions, and I looked for evidence that would help me to understand whether Contact Precautions were an effective tool in the armoury of infection prevention and control policy and practice. I actively sought examples of commentary relating to the ethical standing of Contact Precautions, and of the ethical impact of infection prevention and control practices on patients.

The purpose of this first literature search was to enable me to compile an evidence-based commentary describing ethically relevant aspects of Contact precautions.

This commentary provided me with the foundation upon which I formulated the research question, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' and the study objectives which were introduced in Chapter 1. These three objectives being to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism (MRO). To publicly set a line in the sand by formally exploring the evidence base related to Contact Precautions at that time and relating it to the evidence base relating to established biomedical ethical frameworks, this commentary was published in the peer-reviewed journal, *Nursing Ethics* (Harris et al., 2019). This paper is now presented below.

Are Contact Precautions ethically justifiable in contemporary hospital care? (J Harris, K Walsh, S Dodds)

Introduction

The aim of this paper is to discuss and explore whether acknowledged infection prevention and control practices used in hospitals to reduce the prevalence of antibiotic-resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant Enterococci (VRE), are ethically justified in today's healthcare environment in the developed world. In order to do this the history of the development of these practices is summarised, and the evidence-base for their effectiveness is reviewed. Key bioethics principles are then discussed and contextualised from the perspective of hospital infection prevention and control, and an ethically-superior model for the prevention and control of healthcare associated infections is proposed.

Background

The control of infectious disease is a key public health objective which derives from the Sanitary Movement of the 18th and 19th centuries (McKeown & Learner, 2009) and focusses on population health rather than the health and wellbeing of individuals (Millar, 2009). Within accepted public health paradigms, a person with an infection is bestowed the status of vector; they are a reservoir of the pathogen, and can be responsible for facilitating its ongoing transmission to others.

Acquired resistance to antimicrobial agents was first identified in important bacterial pathogens such as *Staphylococcus aureus* and *Pseudomonas aeruginosa* in the 1960s (Barton & Hart, 2001; Moellering, 2012). The phenomenon was recognised as an important concern with the subsequent potential for future ongoing reductions in the availability of effective antibiotics demonstrating that, contrary to popular belief at the time, the war on infectious diseases had not been won (Francis et al., 2005; Garner & Simmons, 1983; Smith et al., 2012). In response to the need to reduce the transmission of antibiotic resistant pathogens between patients in hospitals Contact Isolation recommendations were developed from established public health activities such as isolation and quarantine of infected people. These activities were designed to protect the health of the broader population rather than benefitting the affected patient (Kirkland & Weinstein, 2009), often infringing individual rights and liberties (Bryan et al., 2007). These practices, now known as Contact Precautions, continue to be recommended for the management of people with a multi-resistant organism (MRO) such as MRSA or VRE (Health Service Executive Ireland, 2012; Infection Control Service South Australia Health, 2015; National Health and Medicine Research Council, 2010; Ontario Agency for Health Protection and Promotion, 2012; Western Australia Department of Health, 2010, 2013).

When a patient is identified as being colonised with an antibiotic-resistant pathogen, the laboratory notifies the infection prevention and control team in addition to the patient's clinical team. The patient is then isolated in a single room and staff are required to wear personal protective equipment (PPE) including gloves and a gown or apron when entering to provide care. A notice is placed outside the room to remind staff of the need for Contact Precautions and an 'alert' message is placed in the patient's medical record (National Health and Medicine Research Council, 2010) where it is retained for any subsequent hospital admissions.

Infectious diseases have the ability to engender a variety of human responses including fear and panic, depending on characteristics such as their communicability, acuity, associated morbidity and mortality, and individual and community socio-economic costs (Smith et al., 2004). These responses have the potential to precipitate rapid, emotion-driven decisions about the management of individuals or populations that challenge bioethical principles of autonomy, non-maleficence, beneficence and justice (Smith et al., 2004). Despite this, a review of foundational texts on bioethics published during the third quarter of the twentieth century, prior to the emergence of the human immunodeficiency virus (HIV), found that examples of communicable disease were only occasionally provided (Francis et al., 2005).

Where included, the purpose was to illustrate the potential conflicts that can arise from the requirement to maintain an individual's confidentiality whilst taking action to protect the health of others. Systematic discussion or consideration of the topic of infectious disease, and the status of the infected person as a victim, as well as a vector for transmission of the infection, was absent (Francis et al., 2005). One such early text is the first edition of Beauchamp and Childress's primary text *Principles of Biomedical Ethics*, published in 1979, which mentions infectious disease only twice (Francis et al., 2005). The most recent edition of this book (Beauchamp & Childress, 2013) uses the example of HIV to explore a variety of aspects of confidentiality but neither the subject of other communicable diseases nor the particular topics of healthcare associated infection or antibiotic resistance are mentioned. Where the ethics of hospital infection control are discussed in the literature, the focus is largely on the ethical dilemmas faced by infection control nurses torn between their responsibilities as nurses to patients, and obligations to their employer (Chavigny & Helm, 1982; Parent, 1985). In 1996 the conflict between principles of epidemiological ethics and medical ethics and the need to fully acknowledge ethical consequences in healthcare decision-making relevant to infection control practice was considered, with the author warning that to ignore the ethical aspects of infection control risks a "gradual slide into unethical conduct" thereby risking the "soul of our profession" (Herwaldt, 1996).

The person with an infectious condition can be considered to be a victim as well as a vector in that having acquired colonisation or infection, harm may be caused by the pathogen itself and also as a result of treatment (e.g., medication side effects) or management practices, including Contact Precautions (Francis et al., 2005). Failure to recognise this particular dynamic of infectious disease within bioethical frameworks has been discussed (Leibovici, 2009). Since the ethical position of recommended infection control practices that do not promote patient autonomy due to a lack of risk-disclosure, or which fail to consider the rights of the individual in the context of the organisation, was first questioned (Parent, 1985), there has been an increasing awareness of the need to address ethical issues associated with the implementation of hospital infection prevention and control policies (Bryan et al., 2007; Francis et al., 2005; Gilbert et al., 2009; Herwaldt, 1996; Ludwick & Cipriano Silva, 2007; Millar, 2009).

Balancing consideration of the needs of the individual patient with an MRO who is in receipt of clinical care, with the need to correctly assess and manage any MRO-related risks to the health of the wider community and incorporating both aspects in

a cohesive ethical framework is a challenging task. However, with the emergence of HIV in the 1980s a similar problem was encountered by expert advisory groups reviewing and revising policies for the management of hospital patients with blood-borne viruses (BBV).

The example of HIV

The first hospital infection control guidelines published in 1970 by the Centers for Disease Control in the USA (CDC) recommended particular precautions (known as Blood Precautions) to be taken when handling the blood of patients known to have Hepatitis B. In 1983 these guidelines were extended and renamed Blood and Body Fluid Precautions and amended to include patients known to have HIV. Due to ethical concerns, in 1985 the World Health Organisation called for the identity of HIV positive patients to be strictly confidential and for informed consent to be provided prior to HIV tests being undertaken (Ancelle et al., 1985). Also in 1985, in response to widespread concern when health care workers (HCWs) contracted HIV from patients not previously known to be infected, further amendment led to the evolution of Blood and Body Fluid Precautions into practices known as Universal Precautions, which were to be applied to all persons regardless of their known or presumed BBV infection status (Garner & Committee, 1996). In this way, the need for extra precautions to be taken with some people but not others; the need for some people to be treated differently from others, was removed. The move provided increased protection to HCW by ensuring that the correct precautions were in place in the event that a BBV was present. It also protected patient confidentiality and reduced the likelihood of stigmatisation of HIV patients in hospitals.

Universal Precautions have now been replaced by Standard Precautions (National Health and Medicine Research Council, 2010), a set of standardised practices that are consistently and horizontally applied with the aim of preventing the transmission of pathogens from one person to another through healthcare contact (Cole & Lai, 2009). They are broader than Universal Precautions in that they relate not only to standardised precautions to be taken with anticipated or actual contact with blood and body substances, but include principles such as the need for HCW hands and reusable medical equipment to be decontaminated before and after every contact with patients, and for reusable medical devices and the hospital environment to be designed, managed and maintained in such a way that contamination with pathogens is minimised (National Health and Medicine Research Council, 2010). Whilst Standard Precautions have mitigated the need for extra precautions to be

taken with certain people when HCW are handling blood or body substances and have prevented the need people with a BBV to be treated differently from others, this is not the case with Contact Precautions. These are applied according to what is known, or has previously been identified, about the microbiological flora of a person as shown in Table 1.

<div>Precautions</div> <div>Practices</div>	STANDARD PRECAUTIONS			CONTACT PRECAUTIONS
	Patient known to have a BBV	Patient not known to have a BBV	Patient not known to have MRSA or VRE	Patient known to have MRSA or VRE
Isolation room	No	No	No	Yes
Gloves for body substance contact	Yes	Yes	Yes	Yes
Gloves for skin contact	No	No	No	Yes
Apron or gown when entering room	No	No	No	Yes
Designated equipment	No	No	No	Yes
Signage by patient	No	No	No	Yes
Infection alert in patient medical record	No	No	No	Yes
Lab notification to infection control team	No	N/A	N/A	Yes

Table 1. Comparing precautions imposed on patients according to BBV status and MRO status

In order to explore further the question of whether Contact Precautions are ethically justifiable in the modern world, it is necessary to consider some of the salient issues that have been recognised to be associated with them, in the context of bioethical frameworks.

Principlism and the ethics of Contact Precautions

The first edition of Beauchamp and Childress's foundational text on bioethics went to press in 1977 (Beauchamp & Childress, 2013). Their four principles of bioethics; autonomy, justice, non-maleficence and beneficence (Beauchamp & Childress,

2013) are widely acknowledged as necessary requirements of a modern healthcare system (Lee, 2012). In addition to these four principles, there are other important considerations of relevance. The first of these is the precautionary principle (Bryan et al., 2007).

The precautionary principle

The precautionary principle justifies anticipatory action to prevent the occurrence of harm despite incomplete scientific evidence (Bryan et al., 2007). An example of this is the removal of the handle of the Broad Street pump by John Snow to halt the 1854 cholera epidemic in London by preventing access to potentially contaminated water. The action was successful in its objective and was therefore justified despite the fact that removing a source of water would certainly have created inconvenience and could potentially have harmed the community (Bryan et al., 2007).

In the mid-20th century when little was understood about the epidemiology of MROs as they first emerged, it was arguably justifiable to draw on the precautionary principle in the development and application of Contact Precautions. A number of studies have been published with results supporting the value of Contact Precautions in reducing the transmission of MROs in hospital settings (Cooper et al., 2004; Johanna Briggs Institute, 2009). However, this evidence-base has been criticised as frequently being of poor design or execution (Cohen et al., 2015; Cooper et al., 2004). A recent literature review of 6 studies describing the efficacy of Contact Precautions in reducing MRSA acquisition and infection published since 1996, could find no evidence supporting their routine use in the management of people colonised with MRSA (Kullar et al., 2016). The recognition that MROs such as MRSA and VRE are now considered endemic within modern healthcare settings (Morgan et al., 2015) supports the conclusion that Contact Precautions have not been successful in their aim and may no longer be justified under the precautionary principle. However, as the evidence for the efficacy of Contact Precautions is equivocal, it is arguable that the continued application of the precautionary principle could be justified if MROs were known to be significantly more harmful than other pathogens.

There is evidence that HCWs believe that MROs are more dangerous to individuals, including themselves, than antibiotic-sensitive strains of the same pathogen (Godsell et al., 2013), however this is not necessarily true. Whilst some recent studies have linked MRO bloodstream infection with increased mortality rates (Gastmeier et al., 2012; Yilmaz et al., 2016), others have shown antibiotic resistance

not to be an independent risk factor for mortality when comparing bloodstream infections caused by *Staphylococcus aureus* (Big & Malani, 2010; De Rosa et al., 2015) and *Enterococcus spp.* (Cheah et al., 2013; Cho et al., 2013).

When Contact Precautions were first recommended for the management of people with MROs little was understood about the potential harm that could be incurred to those patients as a result.

Early exploration of this subject concluded that patients isolated for infection control precautions experience more preventable adverse events including falls and medication errors, express greater dissatisfaction with their treatment, and have less documented care (Stelfox et al., 2003). Since then, a number of different researchers have facilitated improved understanding of the incidence of adverse events and psychological harm affecting patients managed under Contact Precautions (Abad et al., 2010; Croft et al., 2015; Day et al., 2013; McLemore et al., 2011; Mehrotra et al., 2013; Skyman et al., 2010). The phenomenon of stigmatisation is well recognised in the field of infectious disease (Ploug et al., 2015) and has been described in relation to MRSA in hospital patients (Mozzillo et al., 2010) and amongst nurses caring for patients during a hospital outbreak of VRE (Mitchell et al., 2002).

The uncertain evidence base for the efficacy of Contact Precautions in controlling MRO transmission in hospitals and recent evaluation of the comparative harm associated with MROs compared with non-resistant strains of the same pathogen, combined with an increased knowledge about the harm that may be caused to individuals, may arguably undermine the justification of Contact Precautions under the precautionary principle.

In 2002, Ross Upsher undertook a review of the ethical justifications for public health interventions published to date (Lee, 2012) identifying four themes which he termed principles. These are; the harm principle, which requires a consideration of harm incurred to an individual compared with the perceived benefit to others; the principle of least restrictive or coercive means, which requires the least restrictive intervention to be applied where there are a number of suitable options; the reciprocity principle, which requires individuals and communities to comply with ethically valid public health requests; and the transparency principle which requires clear and accountable stakeholder involvement in decision-making (Lee, 2012). The first three principles are equivalent to several of the requirements and restrictions that J.S. Mill places on the principle of utility in his articulation of the harm principle (Mill &

Robson, 1977). They roughly parallel Beauchamp and Childress' (Beauchamp & Childress, 2013) principles of non-maleficence and beneficence by requiring that any interference in one person's liberty or freedom is justified by preventing a comparable harm to others and that public policy is built on democratically defensible grounds. All of these principles have relevance to the field of infection prevention and control as there is potential for conflict to arise if patients and staff are not fully involved and engaged in decision-making, and if there is little consideration of less detrimental alternatives to Contact Precautions by policymakers. The harm principle, in particular, reflects and supports another important consideration; the doctrine of double effect (Bryan et al., 2007).

The doctrine of double effect

The doctrine of double effect justifies causing harm to certain individuals as long as there is an overall benefit to others (Bryan et al., 2007). The doctrine of double effect stipulates that four conditions must be met before an action that causes harm can be implemented:

- The action must be morally good, or at least morally neutral
- The bad effect should not be intended but merely foreseen as a possibility
- The good effect must not be produced by means of the bad effect
- There must be proportionality between the two effects that justifies the good effect

When considering the first requirement, it has been reported that practising HCWs believe that Contact Precautions are justified for the greater good of the healthcare community (Godsell et al., 2013), and the continued inclusion of Contact Precautions for the management of patients with an MRO indicates that policymakers feel the same way (Health Protection Scotland, 2014; National Health and Medicine Research Council, 2010; Western Australia Department of Health, 2010, 2013). The unintended potential harm associated with Contact Precautions is recognised within a number of jurisdictional policy documents with many suggesting ways of mitigating the risk to individual patients (Ontario Agency for Health Protection and Promotion, 2012; Public Health Agency of Canada, 2012; Siegel et al., 2007). It is therefore clear that the first two conditions are met when considering Contact Precautions for hospital inpatients colonised or infected with an MRO.

However, today's increased level of understanding of the epidemiological and clinical impact of MROs and the effect that Contact Precautions has on both patients and HCWs, including the evidence base describing increased adverse events,

psychological harm and stigmatisation, mean it is more difficult to argue fulfilment of the fourth condition that there must be proportionality between the two effects that justifies the good effect. In addition, the possibility that decreased transmission of MROs could be a direct result of the observed reduction in HCW contact experienced by these patients has been noted (Kullar et al., 2016). As one of the main mechanisms for MRO transmission is poor hand hygiene by HCWs (Akyol et al., 2006; Newsom, 2001), this poses a significant challenge to the third requirement that the good effect must not be a result of the bad effect. There are therefore grounds to question whether all four components of the doctrine of double effect have been met in the continued application of Contact Precautions for patients colonised or infected with an MRO.

Bioethics principles

If neither the precautionary principle nor the doctrine of double effect can be relied upon to justify Contact Precautions, contextual review of the four widely used principles of bioethics (Beauchamp & Childress, 2013) may shed light on the ethics of Contact Precautions in contemporary healthcare.

Autonomy. Traditionally, the principle of beneficence held primacy in healthcare ethics, however, for more than fifty years autonomy has been seen as the prevailing principle in the delivery of clinical care (Lee, 2012). Autonomy is the ability of an individual to make choices about the things that they do or the things that they allow others to do to them. It has been described as 'reasoned choice by a competent individual' (Francis et al., 2005). The ability for an individual to practice autonomously relies on their being free of controls exerted by external sources, and to have clear understanding of their circumstances (Beauchamp & Childress, 2013).

Autonomous choice for hospital patients is inevitably constrained as a result of the increased level of vulnerability brought about by their medical condition, as well as their need to receive effective treatment and having trust in their clinicians and in the healthcare organisation (Dorr Goold, 2001). Other factors that reduce a patient's capacity to exercise autonomy are the authoritative position of the HCWs providing care (Millar, 2009) and an acceptance by all members of the hospital and wider community that individual choices are necessarily limited, enabling the organisation to function effectively (Dorr Goold, 2001).

In the context of infection prevention and control, recognition that commonly-utilised interventions were developed from public-health paradigms with the aim of

protecting populations rather than individuals, is important. Within this framework the concept of autonomy has not traditionally been considered a core requirement (Lee, 2012). Beauchamp and Childress's work (Beauchamp & Childress, 2013) states the need for individual autonomy to be facilitated and enhanced. However, the original premise of the principle has been criticised for not including consideration of the individual as a part of a community or society. Critics suggest a need for recognition that the community may be impacted by the person's actions, and also that the person has a set of values and beliefs, established through their social relations, that may influence their decisions. This concept has been described as relational autonomy (Mackenzie & Stoljar, 1999). It is applicable to the field of infection prevention and control because the shared status of both victim and vector (Leibovici, 2009) means that the relevant relationships that can potentially impact on a person's autonomy may not only be personal and intimate; it is possible (depending on the pathogen) for transmission or acquisition to occur between strangers as well as close contacts (Francis et al., 2005). The dynamic that this imposes on individuals concerned about protecting others from their infection is extremely complex and will depend greatly on the individual's understanding of the nature of risk that their condition poses to others. Another significant aspect of contagion, is that infection reminds us of our vulnerability and this can lead to an associated stigma and fear (Ploug et al., 2015). These complex factors can have a significant effect on the ability of a hospital patient to exercise autonomy.

These points are illustrated by a recent study that reported that patients' understanding of infection and of infection prevention and control precautions are limited, and participants had found it difficult to access suitable information to help them to make decisions that would contribute to their own safety and that of others (Wyer et al., 2015). It has also been shown that patients' understanding of Contact Precautions is influenced by their experience; when being managed under these precautions in the healthcare setting patients are restricted in their movements and so they may also self-limit their social activities after discharge from the hospital as a result of their subsequent understanding (or misunderstanding) of the risks to others (Barratt et al., 2010).

The principle of autonomy also applies to HCWs. Their practice is determined by the requirements of their professional registration and employers' operational policies and strategic plans. This framework is in place to support safe and effective clinical decision-making. However, as individuals, HCWs are encouraged to exercise professional autonomy by challenging previous routines and rituals to

develop innovative practice improvements as long as the other principles of beneficence, non-maleficence and justice are maintained (Cole et al., 2014).

Despite the widespread belief in healthcare organisations, that Contact Precautions are the appropriate management strategy for people colonised or infected with an MRO, many HCW are not confident in communicating the process or the rationale for it with individual patients (Godsell et al., 2013). This lack of confidence may adversely affect HCWs' ability to practice autonomously. Additional conflicts may occur when HCWs choose to exercise their own autonomy by limiting their involvement with a particular patient in response to their understanding and beliefs about personal risk and vulnerability (Godsell et al., 2013). As discussed later, this understanding may not be founded upon accurate contemporaneous information, further compromising HCWs ability to confidently and autonomously make appropriate decisions.

Any decision that leads to restrictions being placed upon some people (in this case patients and HCWs) should be based upon contemporary, accurate and sound information. To do otherwise compromises the principle of justice as well as autonomy because it involves treating people differently on arbitrary grounds without respect for their choices.

Justice. The formal principle of justice demands that 'equals should be treated equally' and that benefits and costs or harms are fairly distributed or received (McKeown & Learner, 2009). Questions considering how equality is determined or characterised, and whether it is in fact realistic to attempt to treat people equally have led to the development of numerous competing and distinct theories (Beauchamp & Childress, 2013). Within egalitarian theories the concept of fair opportunity and unfair discrimination is founded on the premise that to base actions or policies on differences that the affected individual has no control over, is not acceptable (Beauchamp & Childress, 2013). It is ironic and poignant that the MRO acquisition that has led to their being treated differently from others (through the implementation of Contact Precautions) may be attributable to previous hospitalisation (Pan et al., 2013) and that the individual has not actively decided to become colonised, nor single-handedly taken actions that have led to that circumstance. This situation is an example of unequal treatment (as shown in table 1) being applied based on a circumstance over which the individual has no control.

A significant consideration in the arena of this principle is the accuracy of the information on which decisions about the application of Contact Precautions are

founded. A recent study (Goldsack et al., 2014) found that 80.2% (130/162) of patients flagged in their healthcare records as colonised with MRSA, were found to be no longer colonised when screened on hospital readmission. Similar findings have been reported by others investigating MRSA and VRE (Shenoy et al., 2014; Valencia-Rey et al., 2014). This means that unless a policy of re-admission screening is rigorously applied, the information on which decisions about the application of Contact Precautions are founded may be accurate only 20% of the time.

Without rigorous universal admission screening it is also possible that a number of admitted patients are colonised with an MRO but that this has not yet been recognised. Those patients will not be managed under Contact Precautions unless and until their MRO colonisation is revealed through microbiological examinations undertaken during the course of their healthcare journey.

Even if there were sound evidence for their efficacy, the potential for inaccuracy of the information on which decisions are made increases concerns that the principle of justice is significantly compromised by the application of Contact Precautions for the management of people colonised with an MRO.

Beneficence and non-maleficence. The principles of beneficence and non-maleficence have played a central role in traditional medical ethics since Aristotle's time (Beauchamp & Childress, 2013). They remain central and relevant to modern healthcare although beneficence has been succeeded by autonomy as the prevailing principle in recent years (Lee, 2012).

Non-maleficence requires the avoidance of harm to others (Beauchamp & Childress, 2013) and traditional frameworks for professional ethics and codes of conduct state that HCWs have a duty of care to ensure that their practice does not cause harm to the individual or to the wider community. Infection prevention and control practices are fraught with difficulty in this respect. As previously discussed, the evidence-base for whether or not Contact Precautions have damaging effects on individual patients is inconsistent. One recent study showed no difference in the levels of psychological distress amongst patients subjected to Contact Precautions (Day et al., 2013) whilst another reported forty-one percent (13/32) of interviewed patients with MRSA, stating that isolation had affected their hospital stay, with 28% (9/32) of patients reporting emotional distress resulting from their isolation (Goldsack et al., 2014).

Beneficence differs from non-maleficence in that whilst non-maleficence must be applied to all people at all times with impartiality, beneficence may be applied (less impartially) to benefit those we choose to help (Beauchamp & Childress, 2013).

With respect to MROs, healthcare systems and the staff working within them believe that the implementation of Contact Precautions is the appropriate management strategy to protect patients and staff from the acquisition of MROs. This is despite the fact that the evidence-base for this is not secure due to the presence of conflicting conclusions from a number of studies, many of which have been criticised for poor design (Kullar et al., 2016). Concern about protecting themselves from contact with a perceived hazard is a recognised driver for HCWs' belief in Contact Precautions for MRO management, despite their implementation creating discomfort and interrupting communication (Godsell et al., 2013). It is therefore possible that continued belief in Contact Precautions derives from a perceived overarching imperative to protect the wider population, applying principles of non-maleficence in protecting patients from possible harm caused by a hazard which is perceived to be a risk to the HCW as well. These observations may indicate that HCWs believe that MROs are more dangerous to individuals than antibiotic sensitive pathogens and that this confers justification for the negative impact that Contact Precautions have on themselves (in adhering to them) and on patients subjected to them, under the umbrella of an overall beneficence.

The need for more research into a range of infection prevention and control challenges has been suggested (Aboelela et al., 2006; Cohen et al., 2015; Kirkland, 2010; López-Alcalde et al., 2015) and it is recognised that a reliance on quantitative methods to measure the effectiveness of Contact Precautions without qualitatively considering the impact on the lives of affected people fails to acknowledge and respect the integrity of the community and its autonomy (McKeown & Learner, 2009). Further qualitative analysis of the ethical issues surrounding the application of Contact Precautions would support a more holistic understanding of the topic.

Discussion

Numerous reviewers have concluded that the quality of studies forming the existing evidence-base to support Contact Precautions, is generally poor and that this is in part due to inconsistencies in the ways in which Contact Precautions are applied. In addition, examination of contemporary literature exploring the efficacy of Contact Precautions and the impact they have on patients and HCWs, the natural history and comparative mortality and morbidity associated with MROs, and the fact that

the decision to apply Contact Precautions may be founded upon inaccurate or outdated microbiological information, has revealed significant challenges to whether they are ethically justified in contemporary healthcare. This should be of particular concern to infection prevention and control teams, hospital clinicians and administrators and patients themselves.

Contact Precautions were developed at a time when the epidemiology of antibiotic resistant organisms was less well understood than now, and the application of practices based on traditional public health methods such as quarantine seemed the right approach. The precautionary principle allows for restrictive or punitive actions to be taken intuitively when there is little understanding of the cause of the problem, in order to resolve the issue by preventive means. When Contact Precautions were first devised for the management of people colonised with MROs this was the case. However, almost half a century later, this is no longer true. It is acknowledged that there has been an increase in the diversity of MROs, but there is also a greater understanding of the fact that antibiotic resistance does not independently confer an increased ability to cause harm (Cho et al., 2013; De Rosa et al., 2015). However, HCWs understand MROs to be more harmful than other organisms and are therefore committed to maintaining Contact Precautions believing them to be effective in preventing transmission of these organisms to themselves as well as to their patients (Godsell et al., 2013).

The identification of an MRO and the subsequent application of Contact Precautions means that the patient is treated differently than was otherwise expected. Being moved out of a multi-bedded bay to a single room and having HCWs wear gown and gloves when they provide care, has been shown to negatively impact on patient experience and well-being (Croft et al., 2015; Ploug et al., 2015), and also to disrupt HCW activity levels with these patients (Kullar et al., 2016). It is not only patients newly identified with an MRO that are likely to find themselves in this position; Contact Precautions may be applied in the management of all patients recorded as having had an MRO in the past (National Health and Medicine Research Council, 2010) although it has been reported that up to 80% of these patients may no longer be colonised (Shenoy et al., 2014). Screening for MROs is not routinely done (Tacconelli, 2009) and so there is a likelihood that at any one time there are a number of hospital patients that are colonised with an MRO but because this is not yet known, Contact Precautions are not applied. There is therefore ample evidence that decisions may not be founded on accurate or contemporaneous information, compromising the principle of justice.

In addition, for a variety of reasons, a person's autonomy is inevitably challenged when they are admitted to hospital. The impact of Contact Precautions on a person's ability to make decisions and choose a particular course of action adds to this (Wyer et al., 2015), as do the feelings of stigmatisation that can occur (Ploug et al., 2015).

All of these factors build a picture indicating significant ethical problems associated with current recommendations for the hospital management of people colonised with an endemic MRO. This has been recognised and explored by a number of commentators since Herwaldt described the need for hospital epidemiologists and infection control staff to identify and reflect on the ethical dilemmas they frequently encounter in their daily practise (Herwaldt, 1996).

The ethics of isolation are also discussed briefly within a review of the efficacy of the practice (Cole & Lai, 2009) where the authors describe isolation policies as the embodiment of the doctrine of double effect. The paper draws on an in-depth review carried out two years previously (Bryan et al., 2007) where a selection of infection control conundrums are used to illustrate the complexity of the problem. The authors suggest that protecting the well-being of the hospital community could best be achieved by the development of a virtues-based communitarian approach to infection prevention and control that recognises the role of virtue, character and emotions in all stakeholders. Unfortunately practical hints on how to achieve this are not provided.

Examples of complex situations that may be encountered by infection control teams are also provided within another paper arguing for the development of a specific ethical framework for hospital infection control (Millar, 2009). However, none of the examples provided by these latter authors are as simple as the question of whether to apply Contact Precautions to the management of patients with an MRO.

This paper has explored a number of different areas where the application of Contact Precautions can be identified as theoretically conflicting with principles of bioethics through extrapolation of the (largely quantitative) infection prevention and control evidence base examined through an ethical lens. The argument for continued implementation of Contact Precautions in the management of patients with an MRO seems weak when viewed from this perspective. However, it would be useful to understand the issues from the patients' perspective to more thoroughly understand whether these conflicts are identified by them and hence whether the authors' concern that Contact Precautions unjustifiably breach bioethics principles is founded.

A number of commentators have suggested that infectious disease and infection prevention and control practices may require a separate set of ethical principles, and that existing constructs are not easy to apply in these situations (Bryan et al., 2007; Millar, 2009; Smith et al., 2004). This may be the case for some of the extremely complex examples encountered from time to time, such as the emergence of novel pathogens such as Severe Acute Respiratory Syndrome (SARS). However, as previously discussed, MROs are now commonplace in healthcare, and are not generally any more damaging to their host than the antibiotic sensitive version of the same organism. Traditional bioethical frameworks considering autonomy, justice, non-maleficence and beneficence are therefore applicable when considering the most appropriate methods that should be used to manage people colonised with an MRO, just as they were when the transition from Blood and Body Fluid Precautions to Standard Precautions was made in recognition of bioethical tensions incurred by the former in managing blood-borne virus risk as HIV emerged. In addition to facilitating increased protection from BBV infection, it is likely that the replacement of Blood and Body Fluid Precautions with Universal Precautions reduced the potential for discrimination or stigmatisation of people known to be infected with a blood-borne virus as all hospital patients were treated in the same way with regard to blood or body substance contact. That transition away from a pathogen-based decision-making algorithm to a person-based framework has set a precedent that may provide an interesting point of discussion in contemporary deliberations about Contact Precautions. What is required is an intervention that will be effective in its aim whilst respecting human rights and the principles of bioethics.

The framework of Standard Precautions provides just such a model; effective hand hygiene, appropriate equipment reprocessing, and hygienic maintenance of the environment in addition to the use of PPE by HCWs having contact with blood or body substances. Optimal application of Standard Precautions in the management of all hospital patients, coupled with increased support to patients and their families in understanding what healthcare-associated infection is, and how to be active partners in preventing it, would fulfil the aims of primary health promotion and protect everyone from the acquisition of MROs as well as other pathogens transmitted through direct or indirect contact.

Conclusion

MROs are now endemic and commonplace within healthcare, not significantly more dangerous to individuals than antibiotic susceptible organisms, and the negative impact of Contact Precautions on hospital patients is recognised. As discussed in this paper there are a number of areas where Contact Precautions engender conflict when they are examined through a bioethical lens. It is therefore possible that they cannot be ethically justified.

Reconsideration of the application of Contact Precautions for people known to have been colonised with an MRO at some time in the past, in favour of implementing standardised infection prevention and control practices that are easy for staff to implement, and which do not create discriminatory practices and stigmatisation must be the aim of any contemporary infection prevention and control strategy. Accordingly, it is suggested that the rigorous application of Standard Precautions in the management of all patients would protect them from developing healthcare associated infections whether caused by an MRO or an antibiotic sensitive pathogen, whilst safeguarding the principles of healthcare ethics.

It is noticeable that the level and type of evidence that has been used to inform legislation, policy and procedural guidelines since the mid-20th century has focussed on quantitative pathogen-centred evaluation of MRO epidemiology or management rather than qualitative person-centred enquiry. Further research is needed to more fully understand the impact of infection prevention and control practices that focus on pathogens rather than people and places, on patients. There is also a need for further consideration of the principles of autonomy, justice, beneficence and non-maleficence, and broader themes such as the principle of least restrictive or coercive means, in the development and implementation of infection prevention and control policies.

This may facilitate the development of more pragmatic and person-centred, achievable, sustainable, and therefore effective, infection prevention and control practices in the future.

Considering possible alternatives to Contact Precautions

The aim of this paper was to initiate discussions about whether acknowledged infection prevention and control practices used in hospitals to reduce the prevalence of antibiotic-resistant organisms such as MRSA and VRE, are ethically justified in

today's healthcare environment in the developed world. To do this, the paper summarised the history of the development of these practices and reviewed the evidence-base for their effectiveness. The precautionary action of imposing Contact Precautions, from a theoretical and deductive standpoint, when little was known about the potential threat posed by antibiotic resistance, is discussed alongside the increasing concerns about the need to balance the benefits and harms associated with Contact Precautions.

Patients who are identified as colonised with an MRO and are subjected to Contact Precautions, are recognised as being in a unique position as both a potential vector for disease transmission, and also as a victim because of the harms caused to them by their colonisation or by the harms caused by control measures (Eli et al., 2020; Francis et al., 2005). Whilst it is acknowledged that being a hospital patient is a difficult experience (Snyder & Fletcher, 2020), these reports demonstrate that Contact Precautions add significant additional challenges and risks. Healthcare workers themselves have described the requirements of Contact Precautions as difficult and uncomfortable to comply with (Andersson et al., 2016; Gilbert & Kerridge, 2019; Godsell et al., 2013; Henderson et al., 2020; Morgan & Kirkland, 2012; Morgan et al., 2013; Seibert et al., 2014).

The paper also considers the possibility that some of the reported benefits, such as reduction in MRO transmission, might be a direct result of negative impacts such as patients receiving less direct care than other patients from health professionals. These deliberations relate to the doctrine of double effect which is also discussed. Key principles of bioethics (respect for autonomy, beneficence, non-maleficence, and justice) are contextualised from the perspective of hospital infection prevention and control. Using these theoretical standpoints, this paper argues the possibility that the imposition of Contact Precautions on people colonised with an MRO creates significant conflict and challenges in maintaining bioethical principles.

Completion of the literature search and the further reading that was necessary to write this paper was a fundamental stage in the formulation of the research aim. This was to explore the impact of Contact Precautions on patients and hospital staff and to interpret participants' described experiences in the context of a bioethical framework that is familiar and relevant to healthcare contexts; the four principles of bioethics (Beauchamp & Childress, 2013). Specifically, the study aimed to build an understanding of the impact of Contact Precautions as they are practised in a group of three public hospitals in eastern NSW, and to make recommendations for the

development of ethically superior processes for the management of people found to be colonised with MROs in hospitals.

This initial literature review led to the formulation of the research question which is 'Are Contact Precautions ethically justifiable in contemporary hospital care?' and the three research objectives were clarified. These are to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism.

This broad-ranging literature review confirmed that Contact Precautions and the hospital management of patients colonised with an MRO is extremely complex and diverse. Having completed this work it was apparent that the overarching research question would need to be further dissected so that the research objectives and overall aim could be met. The first of these subsidiary research questions was formulated:

Q1. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions?

The literature review had revealed Contact Precautions to exert a diverse range of impacts on hospital patients, and to a lesser extent, to health professionals. To gain an authentic understanding of the impacts of Contact Precautions both patients and health professional would need to be invited to share their experiences. However, it was recognised that the participants would be unlikely to describe their experiences in bioethical terms, so interpretation of these experiences would be necessary. This led to the formulation of the second subsidiary research question:

Q2. How do the ethically relevant features of patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

Interpretation of the participants' experiences would then enable an understanding of ethical conflicts and tensions, and if any were found, it was expected that the literature review would also help in the consideration of the development of recommendations for ethically improved infection prevention and control policy and

practice. These understandings led to the development of the third and the fourth subsidiary research questions:

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions? and **Q4.** If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

The delivery of recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism is a key part of the research aim. The initial literature search identified several authors who have suggested that Contact Precautions may create more problems than they solve (Anderson et al., 2014; Kirkland & Weinstein, 2009; Morgan et al., 2015; Sprague et al., 2016). Recognising this sentiment, some commentators have sought alternative approaches that acknowledge the difficulties in accurate and contemporaneous identification of each MRO colonised patient in the hospital (Iordanou et al., 2021). A prominent argument is the suggestion that a horizontal person-centred approach to MRO control would be a sufficient and least restrictive alternative (Bearman & Stevens, 2012; Kullar et al., 2016).

Horizontal approaches are those that require all patients in all settings to be afforded the same optimal level of infection prevention and control practice (Lederman, 2020; Martin, Rubin, et al., 2018; Wenzel & Edmond, 2010). Hand hygiene, equipment and environmental cleaning, aseptic technique, invasive device management, and antimicrobial stewardship, are crucial strategies necessary for the safe delivery of healthcare to all patients. These are components of Standard Precautions, a horizontal approach that is always applied to all patients (Moralejo et al., 2018; National Health and Medicine Research Council, 2019).

Contact Precautions are those extra precautions applied when a patient is identified as carrying a pathogen that can be transmitted through direct or indirect contact. It should be noted here that skin and bowel commensals, (those potential pathogens that may be carried by many people, most of the time), are transmitted through these transmission routes. Some examples are Staphylococci, Enterococci and gram-negative bacteria of which MRSA, VRE, and CPE, are antibiotic resistant strains (National Health and Medicine Research Council, 2019).

Contact Precautions represent a vertical approach to infection prevention and control. Vertical precautions are those that are applied over and above Standard Precautions to target specific organisms (Bearman & Stevens, 2012; Wenzel & Edmond, 2010). These precautions focus on the pathogen, with patients identified as infected or colonised with a particular organism having extra control measures applied to prevent transmission of that pathogen to other patients and healthcare professionals. Droplet and Airborne Precautions are other examples of vertical infection prevention and control measures. These are used to interrupt transmission of pathogens such as pertussis, tuberculosis, varicella, influenza, and SARS-CoV-2 (Houghton et al., 2020; National Health and Medicine Research Council, 2019).

Vertical infection prevention and control measures are supportive of staff exercising stronger infection prevention and control efforts when caring for some patients than for others. In the context of this thesis patients qualify for this extra attention when they are found to be colonised with an MRO. Vertical strategies for MRO management are ethically problematic because they are applied only to those people identified as colonised, and the determination of this status is through variable and haphazard means (Kohlenberg et al., 2011; Pogorzelska et al., 2012).

Horizontal approaches to MRO control in hospitals have been promoted from a utilitarian ethics position (Lederman, 2020) and the continued implementation of vertical control measures exemplified by Contact Precautions has been recognised as challenging the principles of biomedical ethics (Harris et al., 2019; Rump et al., 2018).

2.3 Second literature search and review

As described earlier in this chapter, the research aim, objectives, and research questions were settled upon through review and consideration of the published literature surrounding ethical aspects of Contact Precautions combined with my experiences as an infection prevention and control nurse. The purpose of the second literature review was to identify publications that described ethically relevant impacts of Contact Precautions on hospital patients or on health professionals. The second literature review was therefore crucial in the construction and design of the study as it was a more focussed exploration of the ethical aspects of Contact Precautions than the initial literature review had been.

Ethically relevant impacts were those that were reported as beneficial, physically or emotionally harmful or damaging, or unfair. To identify eligible studies for the initial

literature review, six citation databases were interrogated: Pubmed, Medline, Premedline, Nursing@Ovid, Embase and ProQuest using combinations of the following keywords: - ethic* NOT methicillin (to capture bioethics; ethical; bioethical); infect* (to capture infection; infected); isol* (to capture isolation; isolated); Contact Precautions; autonomy; justice; stigma; methicillin; MRSA; VRE. The search terms were paired and connected with the Boolean AND within each citation database using Title/Abstract, and humans, as filters. Due to the large number of publications relating to HIV, the management of which is not comparable to the management of MROs or Contact Precautions, these were excluded at the search stage.

The 2017 search identified 70 papers of which 37 were excluded following abstract review. Of the remaining 33 papers that were subject to full text review, 23 were in the form of commentary, debate, or discussion articles.

An algorithm illustrating the number of citations retrieved, reasons for exclusion, and final number included in the literature review is shown in Figure 2.

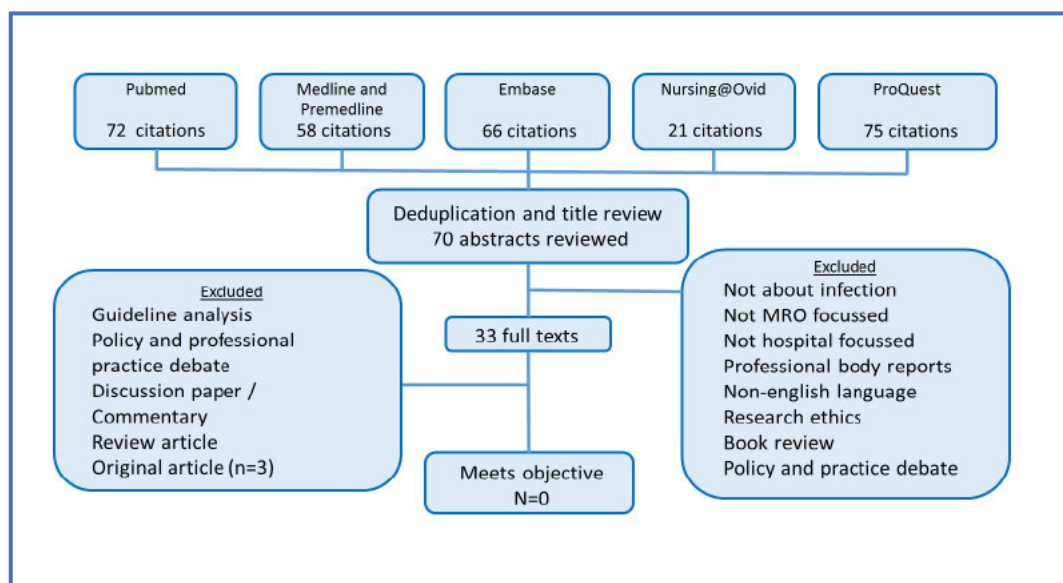


Figure 2. Algorithm showing results of April 2017 literature search

From this literature search (April 2017) three original articles were retrieved. One was a Dutch study confirming increased signs of stigma and poor mental health in people colonised with MRSA (Rump et al., 2017). The second original article was an Australian study. This used interpretive phenomenology to explore health professionals' lived experience of caring for patients with an MRO. It identified the importance of health professionals having rapport with patients and collaborative relationships other health professionals. It also highlighted barriers to practice such

as discomfort associated with wearing PPE, as potentially interrupting optimal patient care (Godsell et al., 2013). The third study also used interpretive phenomenology. This study characterised the lived experience of MRSA isolation in hospitalised patients in an acute care hospital in New Zealand, and the meaning those patients drew from their experiences. It found Contact Precautions to negatively influence the patients' perceived quality of care. The report also highlights the importance of staff being knowledgeable in infection prevention and control so that patients and their families are appropriately supported and informed (Barratt et al., 2010). None of these studies focussed on the bioethical aspects of their findings.

In conclusion, the literature search identified interest in discussing the possibility of bioethical concerns arising from Contact Precautions, but no published studies employed the specific objective of applying a bioethical lens to gain an understanding of the impact of Contact Precautions on hospital patients or health professionals through a description of their experiences.

This more focussed exploration of the ethical aspects of Contact Precautions confirmed that the research question was one that had not already been comprehensively explored. This confirmed that the research described in this thesis could potentially add useful understandings of the ethical standing of Contact Precautions in the management of hospital patients colonised with an MRO. This second literature review confirmed the possibility that Contact Precautions might impose ethical tensions and conflict for patients and health professionals and confirmed the relevance of the research objectives and the subsidiary questions that I had developed. It also affirmed the value of taking a qualitative approach in answering the research question and meeting the research objectives.

2.4 Third literature search and review

Throughout this research project relevant publications have been collected within an EndNote library for reference within this thesis. For assurance that a comprehensive collection of relevant work has been used for reference, and to effectively arrive at a conclusion to this study, the literature search was repeated on 28th March 2021, to retrieve papers published from 1st January 2017 to 28th March 2021. Papers describing the efficacy of Contact Precautions in preventing MRO transmission in hospitals were also sought.

This search found that between January 2017 and March 2021 several authors have published relevant work. These items were critically reviewed with the following purposes:

- To identify recent findings of studies exploring the impacts of Contact Precautions on patients, staff, and healthcare organisations. A contemporaneous understanding of the positive and the negative impacts of Contact Precautions would be crucial in enabling comparison between my research findings and those of other researchers.
- To identify recent findings of studies evaluating the effectiveness of Contact Precautions in reducing the transmission and acquisition of MROs in hospital patients. This research was not able to capture data demonstrating the ability of Contact precautions to prevent MRO transmission in hospitals. Studies into the efficacy of Contact Precautions were anticipated to enable discussions about the benefits of applying these controls in hospital. It was therefore necessary to use the results of other researchers' work to inform the risk vs benefit discussion that informs the recommendations that are made in the final chapter of the thesis.
- To identify any studies that had explored a similar research question to this one, or that had included a risk versus benefit analysis of Contact Precautions in the management of patients colonised with an MRO. This was important because the earlier literature searches had identified several commentaries which raised the possibility that hospital infection prevention and control practice may involve ethical conflict (Bryan et al., 2007; Gilbert et al., 2009; Herwaldt, 1996; Millar, 2009), but no research studies exploring the possibility in depth.
- To identify any relevant policy changes or practice innovations that had been introduced, or that had been recommended by other authors since this study was commenced. This was necessary to provide assurance to myself and to readers of this thesis, that the research question had not already become superfluous through changes in policy and practice.

This third literature review found that no recent studies have explored Contact Precautions through pluralistic and comprehensive application of ethical principles or moral theories. Interestingly, several published papers discuss the ethical impact of Contact Precautions, either as commentary pieces or research studies, with their

focus being a single aspect of moral theory such as respect for autonomy (Hostiuc et al., 2018) or justice (Voo & Lederman, 2020). Where more than one bioethical principle is explored, the focus has been from the single perspective of health consumers (Rump et al., 2018).

The search identified the recent publication of a systematic review of 13 studies that provided data suitable for the calculation of risk ratio related to isolation practices (Purssell et al., 2020). The review compared quantitative data on psychological or non-psychological outcomes in adult patients who are in infective isolation with those not isolated. Non-psychological outcome measures were quality of care, satisfaction of care, and adverse events. The comparative data showed that measures of quality of care such as staff responsiveness, being examined by the attending physician, removal of food tray immediately after a meal, and daily blood pressure recording, were lower in isolated patients than in non-isolated patients. The importance of hand hygiene was explained by staff to patients in isolation more often than to patients who were not in isolation, and adverse events including falls and pressure ulcers also occurred more often. Complaints were more frequent in isolated patients than in non-isolated patients. The authors summarise their findings by stating that 'This review has shown that there are a number of apparently negative aspects to contact precautions, in particular with regard to psychological effects and a reduction in the quality of some aspects of care.' (Purssell et al., 2020, p. 6).

In consideration of whether Contact Precautions have been shown to be an effective means of preventing MRO transmission in hospitals, four recently published studies seem supportive. These four papers indicate, in their abstracts and conclusions, that Contact Precautions are effective in reducing MRO transmission and infection rates. Only one was an original report. This descriptive study described the outcomes of implementing a universal Contact Precautions approach to all patients admitted to a Greek ICU, however, staff compliance with that policy is not measured in the report (Iordanou et al., 2021). Of the other papers, one was a review of 98 MRO outbreak management reports, but measurement of compliance with Contact Precautions was not a requirement for inclusion (French et al., 2017). Another was an approach using statistical modelling to predict MRSA transmission. Modelling presumed full compliance with Contact Precautions for patients identified as colonised with MRSA, in accordance with policy requirements (Khader, Thomas, Stevens, et al., 2021). This presumption is concerning, and very likely misleading, as compliance with Contact Precautions is problematic, as evidenced by published

reports where compliance ranged from 27% to 73% (Arriero et al., 2019; Dhar et al., 2014; Jessee & Mion, 2013; Katanami et al., 2018; Nofal et al., 2017).

The final paper is a commentary, reflecting the current level of concern about the implementation of Contact Precautions, and reflecting the poor quality of data. Despite describing the limited evidence supporting Contact Precautions, this paper falls short of determining that Contact Precautions are not an effective measure in controlling MRO transmission (Martin, Rubin, et al., 2018). Other recent authors have critically noted that the quality of the evidence-base in general, is poor, and that data on the efficacy of Contact Precautions is limited (Banach et al., 2018). It has also been postulated that any decrease in MRO rates in hospital is likely caused by factors other than Contact Precautions, such as improved antimicrobial stewardship (Furuya et al., 2018).

Eleven studies published since January 2017 describe the impact on MRO acquisition rates after cessation of Contact Precautions as an institutional policy requirement. One of these found an increase in infection rates following the discontinuation of Contact Precautions and active VRE screening as an organisational requirement (Johnstone et al., 2020). In the other 10 studies, discontinuation of Contact Precautions was found to have little or no impact on MRO colonisation and infection rates (Bardossy et al., 2017; Bearman et al., 2018; Haessler et al., 2020; Khader, Thomas, Huskins, et al., 2021; Kleyman et al., 2021; Marra et al., 2018; Metan et al., 2017; Renaudin et al., 2017; Schrank et al., 2019; Thompson et al., 2020).

Whilst no recent study has found Contact Precautions to definitively limit MRO transmission, two papers report the benefits of Contact Precautions to include the privacy and seclusion of single room accommodation (Jesus et al., 2019; Taylor et al., 2018). These two studies are heavily outweighed by the 20 studies published over the same timeframe that demonstrate a relationship between increased adverse events (Hamill et al., 2017; Martin, Bryant, et al., 2018; Tran et al., 2017), negative psychological impacts (Bushuven et al., 2019; Currie et al., 2018; Eli et al., 2020; Granzotto et al., 2020; Guilley-Lerondeau et al., 2017; Heckel et al., 2017; Hereng et al., 2019; Hossain et al., 2020; Jesus et al., 2019; Mutsonziwa et al., 2021; Purssell et al., 2020; Rump et al., 2017; Rump et al., 2018; Tran et al., 2017), and other harms associated with Contact Precautions including increased length of stay (Andreassen et al., 2017; Searcy et al., 2018) and decreased patient satisfaction (Guilley-Lerondeau et al., 2017).

In addition to these reported direct patient harms, Contact Precautions are found to be associated with increased financial and resource costs (Andreassen et al., 2017; Bushuven et al., 2019; DalBen, 2018; Engler-Hüsch et al., 2018; Roth et al., 2017; Schrank et al., 2019; Tran et al., 2017; van Dijk et al., 2020), delays or interruption to care (Currie et al., 2018; Datta & Juthani-Mehta, 2017; Rump et al., 2018) and to extra time being required to provide patient care (Barker et al., 2017). All these factors negatively impact on organisational function and reputation. Finally, the contemporary literature did not reveal any formal change to the accepted policy recommendations for Contact Precautions in MRO management, nationally or internationally. A table showing these recently published papers and a summary of their findings is included as Appendix A in this thesis.

The research aim for this study was to explore the impact of Contact Precautions on patients and hospital staff and to interpret participants' described experiences in the context of a bioethical framework that is familiar and relevant to healthcare contexts; the four principles of bioethics (Beauchamp & Childress, 2013). Specifically, the study aimed to build an understanding of the impact of Contact Precautions as they are practised in a group of three public hospitals in eastern NSW, and to make recommendations for the development of ethically superior processes for the management of people found to be colonised with MROs in hospitals.

The initial literature review described in this chapter led to the formulation of the research question which is 'Are Contact Precautions ethically justifiable in contemporary hospital care?' and the four subsidiary research questions. The research objectives were clarified as a result of the work undertaken in this review. These are to understand the impact of Contact Precautions on patients and on health professionals, to discuss these findings within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications, and to make recommendations for an ethically sound framework for the management of hospital patients colonised with a multi-resistant organism. The second and third literature reviews provided a more focussed exploration of Contact Precautions through a bioethical lens. They confirmed the value of this research as an innovative approach to empiric bioethical research.

2.5 Chapter summary

This chapter has provided a review of the literature relating to concerns about the ethical positioning of Contact Precautions in the management of patients colonised with an MRO, in contemporary hospital care. It is supported by the inclusion of a peer reviewed paper that was written to describe those concerns, and to frame them in the context of biomedical ethics (Harris et al., 2019).

Contact Precautions have long been mandated in internationally recognised guidelines (Garner & Simmons, 1983; Loveday et al., 2014; National Health and Medicine Research Council, 2019) as a necessary tool for the prevention of the transmission of MROs to patients within hospital settings. However, numerous researchers and commentators have demonstrated that patients and staff may be harmed by the practice. Contact Precautions may not be effective in achieving their aim, and compliance is frequently sub-optimal. Concerns about patient and staff autonomy, and observations that patients and staff experience feelings of stigma and discrimination are noted. The key findings of the publications presented in this chapter are used, in Chapter 6, to discuss the contextual results of this study that address the first two study objectives. Chapter 7 concludes the thesis with recommendations for infection prevention and control practice, policy, and research. It uses the knowledge and understanding gained through the three literature reviews to answer the fourth subsidiary research question which is **Q4**. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

As evidenced by the numbers of recent commentaries that have referred to the ethical positioning of Contact Precautions, there is a growing body of evidence supporting the need to explore the practice of Contact Precautions from an ethical standpoint. Despite this, no other studies have been identified that explore Contact Precautions in the management of patients colonised with an MRO through the theoretical scaffold of bioethical principles that has been chosen for this study.

The lack of substantial other work in this arena provided impetus and motivation to undertake research that will answer the research question which asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' The following two chapters establish the chosen methodological approach and describe the methods that were used to undertake this research.

Chapter 3. Methodology

3.1 Introduction

Chapter 2 has provided a review of the literature around Contact Precautions and their impact on MROs, patients, and staff, particularly considering aspects such as respect for autonomy (in the individualistic as well as the relational sense), justice, beneficence, and non-maleficence. The chapter also included a published peer reviewed paper that explored wider concepts such as the consideration of the person who is colonised with an MRO as a victim as well as a vector, the precautionary principle, and the doctrine of double effect, as they relate to Contact Precautions (Harris et al., 2019).

The aim of the research described in this thesis was to explore the impact of Contact Precautions on patients and hospital staff and to interpret participants' described experiences in the context of a bioethical framework. Specifically, to build an understanding of the impact of Contact Precautions as they are practised in a group of three public hospitals in NSW, and to make recommendations for the development of ethically superior processes for the management of people with MROs in hospitals.

As stated in previous chapters the research question asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' There were several key drivers for the decision to explore this question. Some were incidents that had been personally witnessed or formally reported either locally or in the global published literature as adverse events. Another was the increasing recognition of the continuing proliferation of antibiotic resistant strains of significant pathogens, and a growing sense that the well-established infection prevention and control procedures, known as Contact Precautions, have not been successful in stemming the tide of antimicrobial resistance.

As my career in infection prevention and control developed, the questions I had been asking myself became more concrete. I realised that I had reached a point of questioning not only the evidence-base that has informed the principles and practice of Contact Precautions, but the fundamental ethical standing of Contact Precautions in contemporary hospital care. It became important for me to consider whether the application of these policies might be unethical.

3.2 Ethics in infection prevention and control

To determine whether this hunch was justified, it was important for me to unpack my reaction, using the terminology of ethics and an understanding of the relevance of bioethics to infection prevention and control practices.

Healthcare practice involves interacting with patients in ways that can be evaluated as good or bad, right or wrong, not merely from clinical or regulatory perspectives, but also from an ethical perspective (Kerridge et al., 2013). Patient care should positively contribute to the individual's well-being. Unfortunately, healthcare can also be harmful. These harms may be directly caused by malpractice or error. Harms may be indirectly caused if healthcare is conducted in a manner that fails to take account of relevant background conditions or the social supports available to the patient, or if it does not respect the patient's autonomy (Beauchamp & Childress, 2013). Recognition that health care inherently raises ethical concerns has given rise to bioethics, or health care ethics, as a subdiscipline within philosophy (Kerridge et al., 2005). These paradigms focus on the ethical significance of health and illness, and the ways that health care practices and systems have ethical implications. Several substantive ethical theories can be applied to health care ethics, for example, deontological, consequentialist, pluralist, rights based or virtue theories, and these theories can conflict on particular issues (Beauchamp & Childress, 2013).

The purpose of introducing ethical concepts into this thesis is not to develop a novel ethical theory for infection prevention and control or to defend a particular ethical theory, but rather to introduce some common ethical language to understand how patients and health care practitioners understand the impact of Contact Precautions. Those insights are crucial in answering the research question and delivering recommendations for practice and research. Taking an ethical perspective throughout all stages of the research was necessary to support grouping and prioritisation of the ethical themes that would provide the necessary insight to answer the research question. An important consideration when selecting a suitable ethical approach was the need for this research to inform recommendations for changes to policy and practice which might mitigate any identified harms or negative ethical impacts of existing practices.

Some of the earliest evidence that our ancestors were concerned that health care practices and systems have ethical implications is seen in the documented deliberations about the practice of medicine in ancient Greece. Hippocrates is

attributed as the collator of a collection of works by several authors into the 'Corpus Hippocraticum'. These writings include the first recognised example of a professional code of ethics (Boylan, 2019). Consequently, Hippocrates is often viewed as the 'Father' of medical ethics and the impact of the Hippocratic Oath still has salience in health care practice. In a modified form, the Hippocratic Oath provides ethical structure to the medical profession. These rules include the often quoted 'first do no harm' (Pappas et al., 2008) as well as some more specific instructions relating to physicians' personal and professional behaviours (Beauchamp & Childress, 2013). Medical ethics is therefore the most established sub-branch of bioethics which also comprises animal ethics and environmental ethics.

Since the time of the ancient Greeks several moral theories that impact upon medical ethics have been developed by later theorists. One such philosopher was Immanuel Kant, who lived from 1724 to 1804 and argued that there is a fundamental moral duty to respect the rationality of humanity. From this he argues that humanity and the reasoned choices of other people ought to be respected and valued intrinsically (and not just instrumentally). This notion has been interpreted as the basis for the principle of respect for autonomy and respect for persons (Beauchamp & Childress, 2013), as well as justice or fairness.

In health care ethics, this is reflected in the view that competent adult patients ought to be provided with information about their condition and proposed treatment, including the risks, so that they can decide to give permission for treatment or to withhold that permission. Further, because all humans are taken to be intrinsically valuable, treatment which discriminates against some and privileges others, without justification, is viewed as unjust or unfair (Kerridge et al., 2005).

John Stuart Mill (1806-1873), building on the writings of his father James Mill and of Jeremy Bentham, developed a consequentialist approach to ethics (Mill & Robson, 1977). Their writings state there is a duty to act in such a way as to minimise harm and to maximise benefit or utility for all those affected by one's actions. For consequentialists, priority may be placed on the principles of non-maleficence and beneficence (Beauchamp & Childress, 2013). Like Kantians, consequentialist approaches are committed to non-discrimination and so endorse the principle of justice, although consequentialists and Kantians come to different conclusions about how to assess appeals to justice (Lee, 2012).

Since the beginning of the twentieth century there has been increased attention to questions of medical and research ethics in philosophical, academic, and clinical circles (Lee, 2012; Wendler, 2017). This has largely been driven by developments in the biological, reproductive and health sciences as well as some notorious examples of unethical research practices (Beauchamp & Childress, 2013). In early twentieth century Germany, the available research ethics guidelines were not followed by Nazi doctors conducting a range of harmful experiments on concentration camp prisoners. As a result, at the end of World War 2 the Nuremberg Code was published with the aim of preventing atrocities from being done in the name of research (Miracle, 2016; Wendler, 2017).

Despite this, some decades later in 1972, it was revealed that some 40 years previously, a cohort of impoverished American black men with syphilis had been recruited into a study (the Tuskegee study) examining the natural course of the infection if left untreated. This study commenced in the 1930's and even after effective treatment was available in 1947, the study participants were not provided with it. In addition, there was no evidence that they could leave the study once recruited (Miracle, 2016).

Following these revelations, the US Government established the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research in 1974 (Miracle, 2016). A panel of 11 eminent academic, medical, theological, and legal experts, along with a lay representative of the community, produced the Belmont Report after four years of deliberation. The report cites the principles of respect of persons, beneficence, and justice as being required for the ethical conduct of research (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). Although it was ostensibly written to guide ethical practice in research involving human subjects, the Report has been described as applicable in the enactment of routine medical care (Adams & Miles, 2013; Miracle, 2016).

In 1977, slightly before the Belmont Report was published Tom Beauchamp and James Childress published the first edition of their book entitled *Principles of biomedical ethics*. The 7th edition of this work has been used as reference throughout this thesis (Beauchamp & Childress, 2013). These authors provide and explain their four principles of biomedical ethics as respect for autonomy, non-maleficence, beneficence, and justice. Beauchamp and Childress recognise that in contemporary society there are several sources of, and influences upon, peoples'

ethical commitments. Also, that in a pluralist democratic society there is no single authoritative ethical perspective that can be used to ground health care practice. Health professionals, patients, and communities will have different ways of understanding and responding to ethical conflicts, although there are many areas where there is overlapping agreement about the ethically important features of individual cases. Beauchamp and Childress developed a principles approach to health care ethics to help identify and articulate the ethical concepts that are relevant in understanding ethical contexts. They did not seek to develop a stand-alone ethical theory. Their text was written not only to inform ethical practices in research, but to guide clinicians in their everyday practices when encountering challenging situations. In Chapter 8 of their book, they discuss professional – patient relationships, stating that ‘the entrenched distinction between research and practice is both puzzling and morally questionable’ (Beauchamp & Childress, 2013, p. 332).

Since its publication, Beauchamp and Childress’s work has been academically scrutinised and criticised (Beauchamp & Childress, 2013; De Vries & Van Leeuwen, 2010; Kolmes, 2016; Quante & Vieth, 2002). Principlism has been criticised for being overly abstract and dogmatic, and unacceptably distanced from clinical reality. A key concern being that the provision of the four principles inclines towards a deductivist approach in considering problems. Critics are concerned that self-deception may occur when people applying them may fall into the trap of believing the four principles to be useful as a framework that allows them to be used in a logical fashion to arrive at a conclusion (De Vries & Van Leeuwen, 2010). Clouser and Gert are cited as being concerned that ‘An agent will not be aware of the real grounds for his moral decision’ (Quante & Vieth, 2002, p. 630). Beauchamp and Childress strongly dispute these criticisms despite describing them in quite concrete terms as useful in healthcare contexts in establishing basic building blocks for a common morality. They argue that the four principles merely provide recognisable signposts to guide practising clinicians and therefore have relevance to ethical reflection, being bound to context. As such, the principles provide a means to achieve coherence through a method of ethical reflection known as reflective equilibrium, a term first used by John Rawls (1971, as cited in Beauchamp & Childress, 2013). Reflective equilibrium involves intuitive and inferential balancing and reflection on the different ethical challenges relating to a given situation or circumstance (Quante & Vieth, 2002), and empirical understandings, those drawn from experience, can assist in this process (De Vries & Van Leeuwen, 2010). In clinical practice, bioethical cases require decisive and timely solutions. Beauchamp

and Childress (2013) argue that traditional philosophical ethical methods are not suitable for achieving these goals.

Empirical bioethics research compliments and extends principlism by uncovering and demonstrating the practical implications of, and responses to, the application of bioethical principles and policy by patients and health care professionals. It has the capacity to deliver findings that can challenge dogma and conventional norms and influence ethically improved policies and practices and community expectations (De Vries & Van Leeuwen, 2010). Research such as this study is recognised as having the capacity to reveal the experiences of people associated with ethically important circumstances. Often these situations are hidden from sight, being obscured by policy requirements, or exempted from scrutiny, as practices that are accepted as routine and ordinary, and ethically irrelevant (Strong et al., 2010).

These strengths demonstrate the importance of the investigation described in this thesis. Contact Precautions for the management of hospital patients found to be colonised with an MRO are an example of a long-established practice that has received little ethical scrutiny since their introduction almost half a century ago (Harris et al., 2019; Herwaldt, 1996).

However, empirical bioethical research, rather like the evidence base for infection prevention and control, is criticised for a lack of rigour in research design that compromises the validity of findings (French et al., 2017; Purssell et al., 2020; Strong et al., 2010). Critics state that empirical bioethical research focusses too heavily on exploring 'what' is happening, rather than what 'ought' to be happening. The possibility that related ethically relevant factors may not be included in empirical ethical study, and a lack of attention to philosophical discourse that would acknowledge and address those deficiencies, is considered a weakness (Strong et al., 2010).

Beauchamp and Childress's take a patient-focussed approach to the application of the four principles of respect for autonomy, justice, non-maleficence, and beneficence, to healthcare decision-making (MacDonald, 2002). They describe these four clusters as 'a framework of norms with which to get started in biomedical ethics' (Beauchamp & Childress, 2013, p. 17).

There is recognition within their text, that health professionals work within a structure of rules, including procedural rules, that support a framework of moral norms. Procedural rules are those that describe the processes and actions that are to be

taken in particular circumstances (Beauchamp & Childress, 2013). This thesis recognises clinical policy frameworks such as infection prevention and control policies as examples of procedural rules. Health professionals recognise the need for these frameworks but may at times consider these rules to constrain their professional and personal autonomy (Gilbert & Kerridge, 2019; Hoogland & Jochemsen, 2000; Sharma et al., 2017).

Respect for professional autonomy is demonstrated when health professionals are afforded the ability to exercise their clinical judgement (MacDonald, 2002; Pellegrino, 1994). This thesis recognises that autonomy is not a concept relating only to patients, and refers to health professional autonomy in this latter, personal sense, rather than in the formal power and control based sociological paradigm maintained by Eliot Friedson (Brint, 1993). Respect for the personal and professional autonomy of health professionals must be considered when balancing bioethical principles, particularly those of respect for autonomy and beneficence (Pellegrino, 1994).

As discussed in the previous two chapters critical analysis of a wide range of sources indicates a number of tensions and conflicts associated with the implementation of Contact Precautions for patients colonised with an MRO (Harris et al., 2019). Interestingly, healthcare associated infection is not deeply explored in bioethical literature (Millar, 2009). Infectious diseases can trigger responses such as fear and panic, and these responses can then drive reflex decision-making leading to actions being taken by health professionals (or health services more generally), that may challenge bioethical principles of respect for autonomy, non-maleficence, beneficence and justice (Harris et al., 2019; Smith et al., 2004). Despite this, examples of communicable disease were only occasionally provided in 20th century bioethical texts (Austin, 2008; Francis et al., 2005). Where communicable disease was considered, the focus tended towards conflicts relating to the need to preserve an individual's confidentiality whilst taking action to protect the health of others. There was no recognition of the infected person as a victim, as well as a vector (Francis et al., 2005).

Interestingly, early editions of Beauchamp and Childress's primary text *Principles of biomedical ethics*, mention infectious disease only twice (Francis et al., 2005). In later editions the authors have accommodated greater discussion about communicable disease by using the example of HIV to frame discussions about confidentiality (Beauchamp & Childress, 2013). Indeed, whilst major texts such as *Ethics and law for the health professions* (Kerridge et al., 2013) might devote entire

chapters to infectious diseases, the focus continues to be on high-profile and relatively rare infections like HIV and tuberculosis, rather than hospital infection prevention and control (Bryan et al., 2007; Millar, 2009). The bioethical community's lack of interest in healthcare associated infection and antimicrobial resistance has been described as 'remarkable and inappropriate as HAIs [healthcare associated infections] are associated with considerable excess mortality, morbidity and expense, and are largely preventable' (Kerridge et al., 2013, p. 900).

In addition to the limited references to communicable disease within their text, there are several important criticisms of Beauchamp and Childress's approach to bioethics, that are relevant to this study. The first of these is that their description of the principle of respect for autonomy implies a narrow individualistic focus on the patient's autonomy (Stirrat & Gill, 2005) without broader consideration of the patient within the context of community, social connections, and relationships (Austin, 2008; Ells et al., 2011; MacDonald, 2002). These concerns are highly relevant to the context of this study because hospital patients are part of a wider community on whom the decisions and actions of an individual patient may have ongoing repercussions. A relational understanding of autonomy provides a stronger ethical basis for patient–health professional relationships (Austin, 2008; Ells et al., 2011; MacDonald, 2002), and provides an authentic platform on which to balance ethical considerations of the kind that are described in this thesis.

Beauchamp and Childress's (2013) bioethical principles do not expound on considerations of conflicts or tensions between respect for autonomy of patients and respect for the autonomy of health professionals who are caring for those patients. Exercise of professional judgement and professional autonomy are important aspects of ethical relationships with patients in the context of healthcare (Pellegrino, 1994; Stirrat & Gill, 2005). The decision to include health professionals as participants in this study was made in recognition of the need for the research question to be considered in the context of a relational rather than a narrow and individualistic focus on patient autonomy.

Despite these considered limitations, the principles approach to bioethics has been used as a key part of the theoretical scaffold throughout all stages of execution of this research. There are several reasons for taking this approach. The first is that the principles of respect for autonomy, justice, beneficence, and non-maleficence, that Beauchamp and Childress (2013) articulate provide a structured framework that is broadly understood and recognised as capturing the range of values relevant to

healthcare. Secondly, principles of bioethics provide a pragmatic framework that allows their intuitive application to reveal more about experiences or situations (Quante & Vieth, 2002). Thirdly, the language used fits comfortably with current healthcare vernacular (Cole et al., 2014; Day & Stream, 2018). Finally, until recently there has been little critical engagement with these principles in the field of hospital infection prevention and control, so their use for this work is innovative (Harris et al., 2019). The language of autonomy (expanded to recognise relational autonomy), justice, non-maleficence and beneficence is used throughout the thesis not uncritically, but as the common language of ethics in health care.

3.3 Statement of study significance and study rationale

In view of the lack of specific bioethical enquiry into the impact of Contact Precautions on hospital inpatients and health professionals, despite several commentators voicing their concerns, this study has the potential to answer several important questions and to inform future infection prevention and control practices. The study design meets the FINER criteria (Hulley et al., 2013) as shown in Table 2.

<p>Feasible – Interrogation of existing systems, and access to patients and staff are components of the primary researcher’s role and core employment function. The purpose of the study is to improve understanding of a key infection prevention and control activity.</p> <p>Interesting – The findings are of interest locally, as well as globally, in view of an increasing awareness of the possibility that Contact Precautions might impose harm on individuals, disproportionate to the benefit the practice imparts to them or to others.</p> <p>Novel – Literature review identified no other published studies using qualitative methodologies, including interpretive description, to explore the bioethical impact of Contact Precautions on patients or health professionals.</p> <p>Ethical – Ethics approval was provided by both University of Tasmania and NSW Health Human Research Ethics Committees. Local site-specific ethics and managerial approval was also provided to enable the study to proceed.</p> <p>Relevant – The study is highly relevant to the field of infection prevention and control. It is expected that the findings will inform the development of sustainable policies for future practice.</p>

Table 2. FINER criteria (Hulley et al., 2013)

3.4 Research questions

The purpose of the study was to explore the impact of Contact Precautions on patients and health professionals working in hospitals and to interpret their experiences in the context of a bioethical framework, in order to answer the research

question which asks, 'Are Contact Precautions ethically justifiable in contemporary hospital care?'

When planning and designing this research it was apparent that exploration of real-world practice (Cresswell, 2014) and its impact on patients and healthcare staff was required if the study objectives were to be met. The aim was to build an understanding of the impact of Contact Precautions on patients and hospital staff and to describe and interpret participants' experiences in the context of a bioethical framework. There were three specific objectives:

- to understand the impact of Contact Precautions on patients and on health professionals
- to discuss these findings within a bioethical framework with a view to exploring the ethical implications
- to make recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO

To explore this subject, and to meet the study objectives, the following sub-questions were asked: -

Q1. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions?

Q2. How do the ethically relevant features of patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

Q4. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

As previously discussed in Chapter 2, numerous authors have published reports that introduce the possibility of conflict existing between the infection prevention and control practice known as Contact Precautions, and bioethical principles (Beauchamp & Childress, 2013). Review of the literature has also demonstrated

that whilst concerns have been raised about the possibility of conflicts existing (Chavigny & Helm, 1982; Gilbert et al., 2009; Herwaldt, 1996; Millar, 2009; Parent, 1985; Wagenvoort et al., 1997), there has previously been no comprehensive exploration of whether patients and health professionals recognise these conflicts or identify them as relevant. In the absence of descriptions from health professionals and patients about what their experience of Contact Precautions has been and the focussed exploration of those experiences through a bioethical lens, it is not possible to know whether concerns about conflict between bioethical principles and Contact Precautions are founded.

The experiences of both patients and staff provide the data from which an understanding of the ethical impact of Contact Precautions as they are practised in a group of three public hospitals in eastern NSW, is derived, and described in this thesis. In the next section of this chapter, justification for the selected methodological approach is provided.

3.5 Research design

To answer the research question, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' and meet the aim of the study, it was necessary to explore the Contact Precautions from the perspective of patients and health professionals who had experienced these practices. Whilst the use of a quantitative methodology, such as a survey questionnaire might enable a degree of understanding of participants' ability to act autonomously (for example), it was considered that this methodology was unsuitable because it would not allow the same depth or breadth of information to be captured as a qualitative methodology might. A qualitative approach allows the research to fully explore the impact of Contact Precautions by giving precedence to the participants' own experiences and framing of the issues, rather than the researcher's knowledge and expectations.

Qualitative methodologies are recognised as being most suitable for understanding the subjective experiences of individuals by enabling them to use their own words to describe phenomena (Liamputtong, 2013). This was considered crucial in exploring Contact Precautions through a bioethical lens because concepts such as respect for autonomy, justice, beneficence, and non-maleficence are arguably difficult to describe, and may be felt differently and subjectively by individuals. People would likely use different words to describe similar experiences or feelings that could demonstrate that, for example, harm was being caused (conflicting with

the principle of non-maleficence), or that they felt able to make informed choices about their care (conflicting with the principle of respect for autonomy).

Having reviewed several qualitative methodologies it was determined that interpretive description (discussed below) would be a suitable approach by which to explore patients' as well as health professionals' experience of Contact Precautions. The concepts of justice, beneficence, non-maleficence, and respect for autonomy would likely be well recognised by participants, by virtue of well-developed societal expectations of fairness and kindness, common understanding of the requirement for medical professionals to not knowingly harm others, and that individuals are in general free to make choices relating to their own actions or the actions of others relating to themselves or their property. However, it was considered unlikely that people would use those exact terms in their recollection of their experiences. This meant that an inductive interpretation of their narrative would be required. Another attraction of interpretive description was that it is designed to enable improved understanding of what clinical care is like in real life settings, and to facilitate improvements in that care where necessary. It was therefore considered appropriate for the study aim and the objective of making recommendations for the development of ethically acceptable processes for the management of hospital patients who had been identified as colonised with an MRO.

3.6 Interpretive description

Interpretive description, an established approach, developed by Sally Thorne and nursing research colleagues during the 1990s, provides a mechanism to 'deconstruct the angle of vision upon which prior understandings have been erected' (Thorne, 2016, p. 41) so that there is development of new insights that can be applied to clinical practice.

Interpretive description recognises the unique standing of nursing in science and the need for nursing knowledge to embrace the complex interactions between psychosocial, cultural and biological phenomena that influence an individual's experience of health or illness (Thorne et al., 1997). Sally Thorne warns her readers that they will not find a recipe for interpretive description and explains that it is not a methodology per se, but 'a conceptual maneuver whereby a solid and substantive logic derived from a disciplinary orientation justifies the application of a universe of available techniques and procedures beyond their conventional contexts and rule structures' (Thorne, 2016, p. 40). Interpretive description studies have been used in

several settings to successfully improve the quality of clinical care and to bring about innovations in professional practice (Kalengayi et al., 2012; Olufemi-Yusuf et al., 2018).

The ancestry of interpretive description lies in its proponent's discomfort with the application of established qualitative methods from the social sciences to the field of nursing research (Thorne, 2016). Nurse researchers frequently found they needed to adapt these methodologies to their professional context. This prompted criticism about the credibility of the findings and cast doubt about the standing of nursing research. Thorne makes the case that ethnography, grounded theory, and phenomenology, all require defined procedural rules to be followed in their application and argues that this makes them unsuitable as primary research methods for the generation of applied nursing knowledge. She states that nursing research is concerned with 'questions from the field' (Thorne, 2016, p. 29) and necessarily needs to explore its subjects in the social, cultural and experiential context of the individual. In developing interpretive description Thorne saw that what was required was an approach that countered the 'tension between theoretical integrity and real-world utility' (Thorne, 2016, p. 37).

Interpretive description aims to address an applied health research question and create understanding that is of practical importance to the applied disciplines (Teodoro et al., 2018). Importantly, interpretive description acknowledges the value of human experiences where reality involves multiple and sometimes contradictory descriptions of fact and is conducted in as naturalistic a context as possible (Thorne, 2016). Interpretive description studies recognise subjective and experiential knowledge as fundamental to the development of applied practice insight. They allow the voice of the participant to be heard and understood in a way that has the potential to refine and improve clinical care, and generate novel approaches to professional practice (Thorne, 2016).

Interpretive description was chosen for this study because it enables a description of the experience of individuals that captures participants' attitudes, beliefs, reasoning, and decision-making. The approach can generate data that challenges existing practice, convention, and authority by showing how practice varies. These are attributes that have been identified as strengths of empirical research in bioethics (Strong et al., 2010) .

Importantly, empirical research in bioethics has the potential to make ethical discourse more connected to real life situations and has the potential to inform

improved ethical practice and policy making (De Vries & Van Leeuwen, 2010; Strong et al., 2010). These are key objectives for interpretive description (Thorne, 2016), making it well suited to answer the research questions posed. Another benefit of interpretive description is that it allows the researcher's previous knowledge gained through clinical experience or empirical study to be recognised, included, and challenged where necessary. The potential of this construct to facilitate the application of new theoretical frameworks and a different viewpoint to the well-established practice of Contact Precautions was evident.

Within the field of infection prevention and control, interpretive description has been used to describe public and professional perceptions of risk associated with *Clostridium difficile* (Burnett & Corlett, 2017). The experiences of 39 members of the public and 29 health professionals were explored, using a series of 15 focus groups in two contrasting demographic areas of the UK. The use of interpretive description in this study enabled the researchers to gain an understanding of the inter-relationships between direct and indirect experiences of *Clostridium difficile* infection and media reporting, on participants' concerns about the negative impacts of the infection on physical and emotional health. It did not explore people's actual experiences of Contact Precautions in the management of infected patients. The authors discuss their findings in the context of the need for effective and appropriate communication about *Clostridium difficile* and conclude that further work should be done to understand perceptions of health-related risks more fully. They also call for the development of health information that is socially and contextually relevant in order to reduce concerns about public, personal and professional vulnerability, blame, and competence (Burnett & Corlett, 2017).

An important motivational factor for the decision to use interpretive description for the research reported in this thesis was recognition of the fact that its application to the topic of Contact Precautions and their use in hospitals in the prevention and control of MROs would be a novel approach.

Interpretive description is not a recipe-book methodology, and this means that there are no strict procedural elements to be adhered to. This places an obligation on the researcher to consider the most appropriate methods to use in the exploration of the research question. Whilst there are no prescribed procedural elements involved, interpretive description requires some general principles to be followed and incorporated. When designing an interpretive description study, it is expected that there must be explicit descriptions of the placement of the researcher within the

research and of the relevant analytic frameworks, and detail about sample selection, data sources, data analysis and rigour (Thorne, 2016; Thorne et al., 1997).

It is therefore important that prior to setting up an interpretive description study design and project plan, the researcher has a strong foundation on which to build their work. This is referred to as 'scaffolding a study' (Thorne, 2016, p. 59). There are two key elements in this scaffolding; the first is the literature review that provides a contemporary understanding of the problem as reported by others. The second is the process of 'clarifying the theoretical forestructure' (Thorne, 2016, p. 70). These concepts are now explained.

3.6.1 Scaffolding the study

In interpretive description the researcher is not an impartial or detached observer or interpreter of other people's words. The term scaffolding is used to describe the foundation upon which an interpretive description study is built (Thorne et al., 2004). There are two necessary elements to scaffolding an interpretive descriptive study; the first is to understand the literature and the state of the science relating to the research question, as well as the underpinning theoretical frameworks. The second is to overtly and actively account for the part that might be played by the researcher's prior experience, professional knowledge, personal beliefs and attitudes, and cultural and societal positioning. It is recognised that these factors would have been key drivers in sparking the researchers' interest and motivation to explore the topic in detail, and their influence will inevitably colour the interpretation (Thorne, 2016).

This relationship is depicted in Figure 3 and explored further in this chapter.

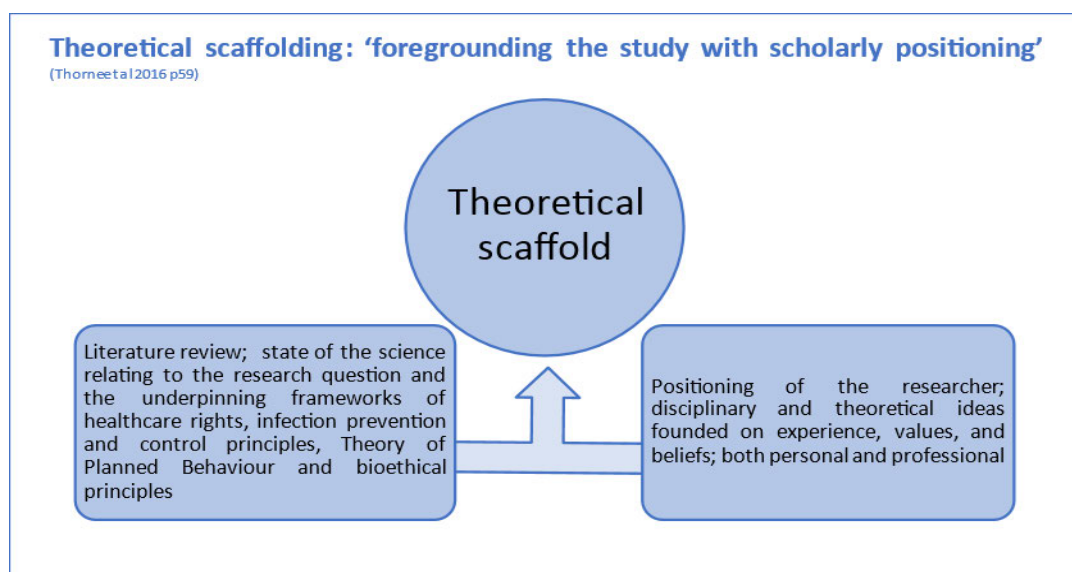


Figure 3. Theoretical scaffolding

Literature review and underpinning theories

The findings of the literature review are described in the previous chapters and in a recently published paper (Harris et al., 2019). These support the possibility that there are areas where Contact Precautions impart a negative effect when they are examined through a bioethical lens. The areas of concern relate to the principle of respect for autonomy; for example, whether patients have any choice about whether Contact Precautions are initiated, and whether they understand the purpose of the precautions (Raupach-Rosin et al., 2016; Wyer et al., 2015). Additionally, whether health professionals have enough knowledge to properly inform their patients (Easton et al., 2007; Kolpa et al., 2015). Concerns about justice and non-maleficence are generated by reports of the harms created by stigmatisation and discriminatory practices being felt by both patients and staff in relation to the control measures for prevention of MRO transmission (Pryor et al., 2012; Rump et al., 2017). The literature review confirms that principles of non-maleficence and beneficence are challenged by the application of Contact Precautions through their association with increased risks of adverse events such as falls or medication errors, and psychological harm (Guilley-Lerondeau et al., 2017; Karki et al., 2013). The literature review also identifies a growing uncertainty about their efficacy in preventing MRO transmission in hospitals (Furuya et al., 2018; Young et al., 2019; Zastrow, 2011).

Underpinning theories shape all stages of an interpretive description study by providing an orienting lens and transformative perspective which influences how questions are asked, and how the data is collected and analysed (Cresswell, 2014). Underpinning theories provide a means of orienting the inquiry by setting explicit theoretical assumptions that serve as a starting point as well as ongoing reference points throughout the progress of the study. Within interpretive description the researcher's theoretical allegiances and disciplinary orientation serve to position them within the ideas, which is seen as crucial. 'Going in blind', which would be considered necessary in traditional phenomenological enquiry, is considered counterproductive in generating nursing knowledge (Thorne et al., 1997, p. 173).

In 1997 Thorne described these orienting constructs as analytic frameworks, however in further development of the approach she recognises that the terminology may be misleading in that it could imply that data analysis should be guided by a pre-determined structure. Subsequently, the term is replaced with 'theoretical scaffolding' to disassociate it from the data analysis element of the study whilst

sustaining the focus on the need for connection with relevant theoretical foundations, alongside the researcher's disciplinary orientation and personal standpoints (Thorne, 2016).

Theoretical scaffolding is described as being constructed on the basis of critical analysis, meaning 'a careful examination and evaluation' of existing knowledge relating to the identified problem (Nordquist, 2017 para. 1), and as being a necessary basis for interpretive descriptive study (Thorne, 2016). The theoretical scaffold for this study incorporates accepted professional governance frameworks (Australian Health Practitioner Regulation Agency, 2021; Jones, 2001) and stated expectations that every recipient of healthcare in Australia should have about their healthcare journey (Australian Commission on Safety and Quality in Healthcare, 2020) alongside the principles of infection prevention and control (National Health and Medicine Research Council, 2019) and biomedical ethics (Beauchamp & Childress, 2013). The Theory of Planned Behaviour (Ajzen, 1991) adds depth to the factors that influence any individual's autonomous action, as will be discussed later in this chapter. Figure 3 illustrates this theoretical scaffold.

The principle of respect for autonomy is complex (Cole et al., 2014; Ells et al., 2011; Hostiuc et al., 2018; Pellegrino, 1994; Schermer, 2002). There are many factors that can influence how much control an individual perceives they have in determining their actions and behaviours. To explore the drivers that would likely be important in understanding how Contact Precautions impact on the bioethical principle of respect for autonomy, an additional theoretical construct was considered appropriate to add to this scaffold.

It was anticipated that this research might potentially develop our understanding of why health professionals might spend less time with isolated patients (Morgan et al., 2009) or why they may treat them disrespectfully (Skyman et al., 2010). The Theory of Planned Behaviour (Ajzen, 1991) is a theory that has been widely used in health to understand or to predict health-related behaviours (Taylor et al., 2006). It is described as being suited to retrospective analysis of behaviour, with the observed behaviour being strongly correlated to both the attitudes towards the behaviour, perceived behavioural control, and self-efficacy (Taylor et al., 2006). This theory aims to provide an explanation for behaviours, recognising that individuals and groups of people will exert influence according to pre-existing attitudes, cultural norms, and expectations. Importantly this theory recognises that the degree of control the individual has over their own actions might be restricted. This latter

aspect includes consideration of what factors make a certain behaviour more likely or less likely to happen; the enablers and the barriers that may influence actual implementation of intent. The precisely defined components of the theory have been cited as promoting efficiency and consistency in application (Taylor et al., 2006).

The Theory of Planned Behaviour (Ajzen, 1991) was considered particularly relevant and valuable as a framework to explore health professionals' experiences of the implementation of Contact Precautions. It was anticipated that health professional participants would describe situations where their personal autonomy as a health professional (Pellegrino, 1994) had been negatively impacted by the application of Contact Precautions. It was also expected that the culture of the clinical unit, or the availability of resources might have influenced clinical decision-making or clinical practices during interactions with patients being managed under Contact Precautions. For these reasons this theory was incorporated into the study design. More detail on the Theory of Planned Behaviour (Ajzen, 1991) and principles of biomedical ethics (Beauchamp & Childress, 2013) as they are applied to this research is provided later in this chapter.

Aspects of both theoretical constructs were woven through the study starting with the conceptual scaffolding of the semi-structured interviews that were used for data collection. In interpretive description data collection and analysis is undertaken concurrently, with the researcher using the developing insights drawn during data analysis to further evolve and inform the direction of exploration during subsequent data collection activities (Thorne, 2016). Accordingly, in this study, as the interviews progressed, some common experiences and themes that were strongly related to these theoretical structures became apparent. During subsequent interviews future participants were asked whether they had shared that same experience or feeling in relation to Contact Precautions. It was important to understand the perspective of those who did not share that same experience, and it was also important to identify paradoxical experiences of the participants. Similarly, throughout data analysis the use of the theoretical lens relating to the principles of biomedical ethics (Beauchamp & Childress, 2013) and the Theory of Planned Behaviour (Ajzen, 1991) was key in using interpretive description to draw out the insights needed to answer the research question.

Positioning of the researcher within the study

I was drawn to explore ethical aspects of Contact Precaution through my personal observations of the implementation of internationally accepted infection prevention

and control measures as they are applied to the management of hospital patients known to be colonised with an MRO. These observations included noticing how patients were affected by being told to stay in the single room they were allocated, and how difficult it was to see their families and friends trying to maintain emotional and physical contact with their loved one whilst having to wear personal protective equipment (PPE) such as gloves and yellow long-sleeved gowns. I had noticed that staff sometimes asked questions and made comments that indicated concerns about their own safety when providing care to these patients, and I had also encountered situations where certain staff felt so much at risk that they would refuse to enter the patient's room.

As my experience in the specialty of infection prevention and control nursing grew, I began to question the value of the application of these precautions in preventing the transmission of MROs within hospitals. These doubts originated in occasions when patients who were being managed under Contact Precautions due to being colonised with one MRO were found to have acquired other healthcare-associated pathogens. I also recognised signs of significant psychological harm in patients. An example of this latter circumstance was the previously described attempted suicide of an elderly gentleman being isolated in hospital. In his case, staff reported that they had noticed his mood deteriorating but they did not feel able to discontinue his Contact Precautions because they did not want to put other patients in danger. They seemed so committed to the policy requirements that they did not ask for advice about the possibility of moving him into a room where he would benefit from contact with other patients and could be more effectively observed. To me it appeared that they failed to consider this patient's needs in favour of compliance with policy and their understanding of organisational expectations.

It is recognised that infection prevention and control strategies may involve constraints on individual freedoms and can also be associated with adverse events in hospital (Millar, 2009; Purssell et al., 2020). The obligation on health professionals to avoid taking or supporting actions that are harmful to the patient, including when those actions are stipulated in policy, is widely recognised (Pellegrino, 1994). Individual patients trust that their clinical team will act in their best interests and health professionals have a shared understanding of their obligations and responsibilities in providing effective, safe, patient-centred care (Cole et al., 2014; Gilbert & Kerridge, 2019; Webb, 2015). This mutual trust is a vital constituent of the patient-health professional relationship and patient-centred care (Dorr Goold, 2001; Ells et al., 2011; Pellegrino, 1994).

This attempted suicide event prompted me to consider infection prevention and control policy from the health professionals' perspective. What were the factors that prevented experienced health professionals from more effectively advocating for their patient's best interests by actively challenging the policy requirements for this individual patient? This thought was the driver behind the development of the third subsidiary research question.

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

The Australian Charter for Healthcare Rights formalises expectations that all healthcare consumers should expect of their experience. Under this Charter, patients have rights to access, safety, respect, partnership, information, privacy, and the right to give feedback (Australian Commission on Safety and Quality in Healthcare, 2020). As my career in infection prevention and control progressed, I noticed reports in the published literature describing and reviewing the rates of adverse events for patients managed under Contact Precautions. Although some researchers found a decreased rate of non-infectious adverse events with these patients (Croft et al., 2015) many others found the opposite. Several dimensions of patient care were reportedly negatively impacted including increases in medication errors, pressure injuries, and falls (Abad et al., 2010; Gandra et al., 2014; Karki et al., 2013; Morgan et al., 2009). Higher rates of delirium were recognised (Day et al., 2012), and patients requiring Contact Precautions waited longer to be transferred from the Emergency Department to a hospital ward (McLemore et al., 2011). Patients themselves reported negative consequences of being managed under Contact Precautions. They were more likely than other patients to perceive problems in their care, particularly that there had been a lack of respect for their preferences (Mehrotra et al., 2013). These patients also experienced feelings of stigma extending to feeling violated and vulnerable because of being isolated, and because of the reactions they had observed from health professionals and their own friends and family members (Rump et al., 2017; Skyman et al., 2010). These reports confirmed to me that others shared my uneasiness about Contact Precautions impacting on the delivery of safe care to isolated patients.

In addition to feeling uneasy about the impact of Contact Precautions on patient safety, I also grew uncertain about their effectiveness, and therefore their purpose. These doubts were driven by the growing numbers of clinical reports that increased

the global understanding of MRO epidemiology including resistance mechanisms, transmission pathways and acquisition rates. Other reports demonstrated improved clinical outcomes and effectiveness in the treatment of significant infections caused by MROs. These improvements were driven by earlier diagnosis through improved contemporary laboratory techniques and clinician awareness, and more effective treatment options facilitated by pharmaceutical advances. Evidence emerged that outcomes such as all-cause mortality did not significantly differ between infections caused by antibiotic resistant and antibiotic sensitive strains of the same pathogen (Cheah et al., 2013; De Rosa et al., 2015), and MRSA bloodstream infections were reportedly less likely to lead to endocarditis than those caused by antibiotic sensitive *Staphylococcus aureus* (Abraham et al., 2004). I became more concerned about the ethics of applying Contact Precautions to the hospital management of these people if MROs were not particularly more harmful than antibiotic sensitive strains of the same pathogen. I asked myself whether these precautions could be justified or whether the risks might possibly outweigh the benefits. I also wondered what staff and patients would tell me about their experience of Contact Precautions. My ultimate concern was to consider whether it is right to continue to use these measures in hospitals.

In addition to these disciplinary groundings relating to infection prevention and control nursing, the credibility of the project required the use of validated theoretical frameworks relating to questions around bioethics, to inform the design through all stages of the study. Designing the study around these theoretical frameworks allowed the research to be built and delivered to provide conclusions and pragmatic recommendations through answering the research question. This was considered an important factor in driving results that are of interest to the intended audience, and that stimulate improvements in clinical and professional practice, all of which are key objectives of the interpretive descriptive approach to qualitative research, and empirical ethical enquiry (Strong et al., 2010; Thorne, 2016).

3.6.2 Theoretical scaffolds

As discussed earlier, in addition to the theoretical scaffold provided by professional governance frameworks, expert knowledge, and clinical experience as an infection prevention and control nurse, two further frameworks underpin the study design (Ajzen, 1991; Beauchamp & Childress, 2013). They are discussed here.

Bioethical principles

Beauchamp and Childress's four principles of biomedical ethics are: respect for autonomy, justice, non-maleficence, and beneficence (Beauchamp & Childress, 2013). As stated at the beginning of this thesis, the first sub-question, used to build the picture that would answer the main research question, asked what the experiences of health professionals and patients tell us about what is ethically relevant in the care of patients who are being managed under Contact Precautions. The second sub-question then considered how those experiences map to the four bioethical principles.

Beauchamp and Childress's bioethical principles provide a pragmatic framework upon which to elucidate and describe participants' reflections on their experiences. Further, this framework allows balancing and comparison of the ethical priorities for the study participants. This is done by thorough and repeated immersion into, and a review of the interview transcripts, coupled with deliberation and intuitive reflection on how participants' experiences relate to the four principles.

This balancing requires a judgement to be made about how any ethical infringements have impacted on individual participants, as well as to the broader group of patients, doctors, nurses, or allied health professionals. In clinical settings balancing also requires sympathetic insight, humane responsiveness, and practical wisdom (Beauchamp & Childress, 2013).

Beauchamp and Childress provide an account of bioethical principles that is focussed on the patient; however, their approach is criticised for its individualistic focus on patient autonomy (Ells et al., 2011; Kerridge et al., 2005). This perspective risks failure to recognise the external and cultural factors that might be influential in the decisions that patients make, and the role of health professionals' attitudes, beliefs, and clinical acumen when patient wishes are in conflict with their professional judgement (Pellegrino, 1994).

This thesis recognises the potential for health professionals to be influenced and impacted by bioethical tensions that are triggered by their experience of the application of Contact Precautions in the management of patients colonised with an MRO. Through a dynamic process of reflective balancing, identified ethical conflicts and tensions can be prioritised to arrive at justification for the answer to the research question. Finally, this justification allows recommendations to be made.

The aspiration is that implementation of those recommendations will reduce ethical tensions and improve the healthcare experience for patients colonised with an MRO, thus answering the third and fourth sub-questions. For this study, a crucial characteristic of this approach is that it recognises the importance of empirical findings in exploring the ethical standing of clinical situations and it is designed to inform changes in practice.

Respect for autonomy

A traditional view of autonomy is that it is the ability for a competent individual to make choices about what they do or the things that they allow others to do to them, considering the individual's values and goals (Cole et al., 2014; Milligan & Jones, 2016). People who make autonomous choices act intentionally and with understanding. In order to do this, they must be free of external pressures such as coercion or manipulation and must have the internal mental and physical capacity to exercise that choice having been provided with appropriate information (Beauchamp & Childress, 2013; Pellegrino, 1994). The principle of respect for autonomy is considered of paramount concern in modern healthcare and is understood as an aspect of respecting individuals as persons with minds of their own and whose choices should be respected (Beauchamp & Childress, 2013; Lee, 2012).

Beauchamp and Childress's (2013) work is very much centred on respect for patient autonomy. This focus has been criticised as ignoring the moral claim that health professionals rightly hold for their personal and professional autonomy to be equally respected (Pellegrino, 1994). Further criticisms of the paradigm of respect for patient autonomy are its potential to harm the trusting and respectful patient-doctor relationship (if the patient's demands are perceived as over-riding the considered best advice of their doctor), and failure to properly place the concept of autonomous choice in the context of the social nature of people's lives; their relationships and community (Ells et al., 2011; Stirrat & Gill, 2005).

Examples of behaviours that indicate respect for patient autonomy might be when health professionals demonstrate their commitment to ensuring that the consent process is robust, attending to patients' wishes for end-of-life care, seeking to provide honest and transparent responses to patient questions, or avoidance of a paternalistic approach to decision-making relating to patient care (Braunack-Mayer et al., 2001; Cole et al., 2014).

In the context of infection prevention and control, respect for autonomy might be demonstrated when patients and staff report having all the necessary information available to them by which to understand their situation. Individual patients whose autonomy is respected will be enabled to make choices about their management when asked, or even to make decisions about how, when or where they move around the hospital and with whom they have contact. They will have been provided with sufficient information about any recommended procedures or tests before they are done. They should also understand how the results of those tests might be used for purposes additional to their own medical treatment, for example, for communicable disease surveillance (Braunack-Mayer & Mulligan, 2003). More fundamentally, respect for autonomy requires people to be given options and to provide informed consent to decisions that are made about their care (Beauchamp & Childress, 2013).

As will be explained later in this chapter, the ultimate action a person takes is a complex aggregate of the internal and external drivers and influences that may be in play at the particular moment in time (Ajzen, 1991). The Theory of Planned Behaviour is therefore useful in exploring the impact of Contact Precautions on health professionals' autonomy because health professionals, as people, carry their personal beliefs, values, and attitudes in addition to their professional knowledge, experience, and skills. These attributes provide the same platform for expression of autonomy, as demonstrated by actions or behaviours, in health professionals as they do for patients (Pellegrino, 1994). Therefore, the essence of this thesis is that it recognises the need to consider the personal autonomy of health professionals and patients as equitable when considering the research question. The autonomy of health professionals is inherently affected by professional rules and employment conditions and may also be affected by environmental factors such as organisational culture (Cole et al., 2014; Godsell et al., 2013; Lawton & Parker, 1999). The Theory of Planned Behaviour also has relevance to patients who are colonised with an MRO as their ability to act in certain ways (such as leaving their room to have a cup of coffee) are limited by the implementation of Contact Precautions (Wyer et al., 2015).

Justice

The principle of justice demands that equals should be treated equally (McKeown & Learner, 2009). In addition, actions or policies should not be applied according to arbitrary differences over which the affected individual has no control (Beauchamp & Childress, 2013). Concern for justice also captures the idea of fairness, the

expectation that neither individuals nor groups of people should suffer discrimination in their access to social goods such as healthcare. Some examples might include seeking to avoid discriminatory treatment and facilitating patients in having access to the health care that they need, rather than their ability to pay, or their residential address. In the context of Contact Precautions initiated in the management of patients colonised with an MRO, discriminatory treatment might take the form of patients having their healthcare journey interrupted, extended, or halted, purely on the grounds of their colonisation status (Harris et al., 2020).

The principles of beneficence and non-maleficence have played a central role in traditional medical ethics since Aristotle's time (Beauchamp & Childress, 2013). Non-maleficence requires the avoidance of causing harm to others, as famously stipulated in the Hippocratic Oath (Beauchamp & Childress, 2013; Pappas et al., 2008). Following this paradigm, modern frameworks for healthcare professional ethics and codes of conduct impose a duty of care to ensure that treatments offered are backed by evidence and the practice of healthcare does not cause harm to the individual or to the wider community (Australian Commission on Safety and Quality in Healthcare, 2020; Mitchell et al., 2020).

Non-maleficence

Non-maleficence is particularly complex to elucidate in the context of Contact Precautions, where their instigation was derived from the precautionary principle and public health principles targeted at protecting the population with little regard for harm that may be caused to the individual. The principle of non-maleficence draws attention to the consequences of our actions, on all those who are affected by what we do. Given that infection prevention and control is aimed at limiting the number of people exposed to infection, but the health care worker's primary patient is the person who is colonised with an MRO, there is a potential conflict. John Stuart Mill wrote that in acting to protect against harm it is permissible to act in a way that in other regards might be thought to be harmful, to protect a greater harm from occurring. He stipulates though that this is only acceptable if the harm we cause is the least harmful means of protecting against a significantly greater and immediate harm (Mill & Robson, 1977). These considerations indicate that application of the principle of non-maleficence depends on the facts about how, and where, harm may be caused. In the absence of knowledge about all patients' colonisation status, is it possible that the harm caused to an individual patient by Contact Precautions is

greater than the risk of harm that would be caused to others if Contact Precautions were not implemented?

Beneficence

Beneficence, or doing good and promoting well-being, differs from non-maleficence in that the latter is a negative duty (not to harm) that must be always applied to all people with impartiality whereas beneficence which as a positive duty (such as promoting well-being) may be applied less impartially to benefit those we choose to help. The principle of positive beneficence supports a range of obligations including, 'To protect and defend the rights of others; To prevent harm from occurring to others; To remove conditions that will cause harm to others' (Beauchamp & Childress, 2013, p. 204). Many of these obligations are assumed by patients and by health professionals, to be necessary and expected rules of engagement by virtue of the relationship that is imposed on the two parties by their respective situation at that moment in time. In the public health realm concern for beneficence is demonstrated by measures such as providing influenza vaccines and raising awareness to increase uptake. These measures improve both individual and population health directly (by vaccinating individuals) and indirectly (when herd immunity protects those who are not able to be vaccinated) (Smith et al., 2004). In the context of hospital infection prevention and control, the need for healthcare professionals, patients, and visitors to clean their hands frequently to prevent the transmission of pathogenic organisms is founded on the principle of beneficence by preventing harm from occurring to others.

It is recognised that neither patients nor health professionals are likely to use the terms autonomy, non-maleficence, beneficence, or justice when describing their experiences of Contact Precautions, however the language that is employed can reflect the underlying bioethical principles that are in play.

For example, the language of the individual's choice, or control, or personal values and respect, aligns with a concern for autonomy, and the language of being controlled, dominated, disregarded, or disrespected reflects concern that the principle of autonomy has been infringed.

Justice encompasses ideas such as fairness, equity, and non-discrimination. If participants use words such as unfair, or describe feeling discriminated against, being treated differently, or feeling part of a disadvantaged group, this may indicate that the principle of justice is not being upheld.

For non-maleficence, participants might reflect on the value of Contact Precautions in protecting against illness or harm, but may also describe the experience as being mistreated, hurt, or made to suffer.

Beneficence might be reflected in participants' referring to treatments that aim to make a patient well, or the beneficial effects of family or social contacts. The degree to which participants value the role of Contact Precautions in maintaining individual health and wellbeing and supporting public health and welfare, versus allowing disease to spread, or identifying a failure to support health professionals in implementing Contact Precautions or patients being exposed to them, will provide information about conflicts between Contact Precautions and beneficence.

The other theoretical scaffold used in this study is the Theory of Planned Behaviour (Ajzen, 1991). This theory has been identified as a useful tool to explore hand hygiene practices in Swedish homecare nurses with the findings potentially informing improvement strategies (Lindh et al., 2016). It was also used in an Australian study where the authors concluded that it provided a sound framework for systematic exploration of the self-reported beliefs that inform nurses' decision-making regarding hand hygiene practices (White et al., 2015).

Theory of planned behaviour

Professor Icek Ajzen worked with Martin Fishbein to develop the Theory of Reasoned Action in 1975 (Taylor et al., 2006). The two theorists recognised limitations, such as the omission of recognition of the influence of the level of perceived control a person may have about their ability to act in any given way. This omission was addressed in the Theory of Planned Behaviour (Ajzen, 1991) which continued to develop exploration of the relationship between attitudes, subjective perceptions and beliefs, and the perceived level of control in determining the behaviour of individuals. In this theory, behaviour may be prospectively predicted, and retrospectively analysed, by considering the influence of various components of intention, and the person's notion about the level of control they have in the given situation. Intention is the person's readiness to perform a given behaviour. A person's intention is based on their attitude toward the behaviour, their perceptions about what is socially or culturally acceptable or expected, and their perceived ability to perform the action (Ajzen, 1991).

The 1991 Theory of Planned Behaviour suggested three antecedents for intention, and that the stronger the intention, the more likely the person is to undertake that behaviour or action. These antecedents are:

Attitude toward the behaviour which is the degree to which performance of the behaviour is positively or negatively valued by the individual.

Subjective norm which is the person's perceived social pressure to either carry out the action, or not to. This perception will be determined by the beliefs and values of the person's immediate social group, and the wider community, and the power of this aspect of the theory might depend on the strength of those relationships.

Perceived behavioural control which relates to the person's assessment of their ability to perform a given behaviour. This perception includes consideration of any barriers or enablers that might be presented.

Since the theory was first proposed it has been further developed. The most recent representation, shown in Figure 4 provides further detail to the various components, and suggests important precursors to attitude, subjective norm and perceived behavioural control, known as behavioural beliefs (Ajzen, 2019).

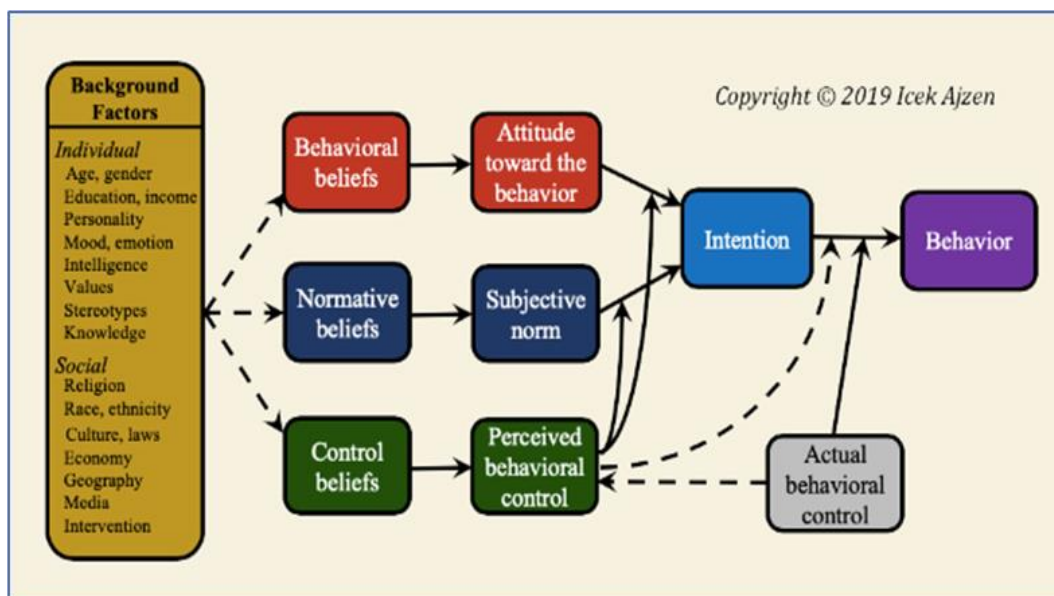


Figure 4. Theory of Planned Behaviour (Ajzen, 2019)

This depiction of the theory illustrates that there are influences such as the attitude toward the behaviour that may be internal, or externally driven, and that the degree to which the individual is able to 'do the right thing' might be influenced by material resources or possibly by personal psychological or physical characteristics. Both the

attitude and the perceived control contribute to the concept of 'subjective norm' which can be described as 'the ways things are done'. The ultimate action taken is a complex interplay of the many influences in place at the time.

This theory is particularly useful in exploring the impact of Contact Precautions on health professionals' personal autonomy (Pellegrino, 1994), which is inherently affected by virtue of their conditions of employment to follow organisational policies, professional codes of conduct or the directions of other staff (Australian Health Practitioner Regulation Agency, 2021; Cole et al., 2014; Godsell et al., 2013; Jones, 2001). It also has value in exploring patient behaviours such as their compliance with instructions not to leave their room, or for their visitors to wear gloves and gowns.

The use of this theory in couching the questions used in the semi-structured interviews was anticipated to facilitate an understanding of any internal or external conflict or stress experienced by health professionals because of policy requirements, conflict between cultural and personal expectations, or unavailability of material resources required to implement the policy. For patients, the use of this framework was expected to provide a mechanism to explore the linkages between their ability for decision-making and the degree of control they felt they had. These relate to Beauchamp and Childress's (2013) principles of respect for autonomy, justice and non-maleficence. Therefore, using both frameworks to underpin and infuse the design of the study, from data collection through interpretive descriptive analysis, was important in thoroughly exploring the research question.

3.6.3 Sample selection

To answer the research question, a purposive sampling technique (Cresswell, 2014) was needed because participants must have experienced Contact Precautions to authentically provide their insights. This is a commonly used sampling method in interpretive description; however, care must be taken to achieve heterogeneity amongst the participants for aspects such as gender, age, and professional group in order that the research findings are credible and bear scrutiny by the intended audience (Thorne, 2016). Sample sizes in interpretive description vary according to the subject under examination, what is already known, and the researcher's interpretations as the study proceeds (Teodoro et al., 2018).

Thorne (2016, p. 99) discusses the value of the research team identifying 'everyday philosophers', or key informants from within the participant cohort, as these people

can be useful in adding a broader and deeper understanding of the experience as they are more likely to elaborate on their observations and to share their own thoughts on the experience rather than provide a simple description. The recruitment of key informants identified during initial data collection activities can be highly valuable in fleshing out and further refining groupings or categories of the identified codes into themes as data analysis progresses (Thorne, 2016). As analysis occurs concurrently with data collection in interpretive description, theoretical sampling techniques are also utilised. Theoretical sampling refers to the practice of prospectively identifying and seeking out instances of contradiction, paradox or agreement with the information provided in earlier data collection.

3.6.4 Data sources and analysis in interpretive description

Interviewing is commonly used as the primary source of data in qualitative research (Cresswell, 2014), and this is the case for interpretive description, where researchers are often from the applied health environment and are therefore confident in engaging people in clinical discussions and interview-like situations (Thorne, 2016). Despite some limitations including the subjectivity of the participants' recollections, and the challenges met by researchers in undertaking a research interview in comparison to the more familiar clinical interviews, individual interviews are recognised as a useful mechanism for the development of clinical knowledge (Thorne, 2016).

Data analysis within interpretive description is inductive and reflexive, meaning that data is analysed not with a view to test a pre-existing theory, but with the objective of generating new theory and practice recommendations from the data. Data collection and analysis occurs concurrently, and insights are brought into the research as they are found, so that insights of future participants can be sought on the emerging themes. Methods such as detailed coding or following set algorithms for coding and theming are not recommended as they may stifle the ability to see the bigger picture (Thorne, 2016). Instead, it is necessary for the researcher to repeatedly immerse themselves in the data by frequently reading interview transcripts, listening to recordings, and actively reflecting on the contents in the context of the theoretical scaffold prior to beginning classification or creating linkages (Teodoro et al., 2018; Thorne et al., 1997).

The use of computer-aided qualitative data management software can be beneficial as a means of saving time and achieving deeper exploration of the data (Cresswell,

2014). Accordingly, NVivo (QSR International, 2018) was used to manage the large amount of data generated through the interviews.

3.7 Ethics approval

This study was approved by the Human Research Ethics Committee (HREC) at the University of Wollongong, NSW (HREC reference number 2017/324). This study was also approved by the Tasmanian Health and Medical Human Research Ethics Committee, where the UTAS HREC project number is H0016918. Detail of the methods by which identified ethical risks were mitigated is presented in the next chapter.

3.8 Chapter summary

Interpretive description is a research methodology designed to enable the generation of improved and authentic knowledge about healthcare provision (Thorne, 2016). To avoid the production of a purely descriptive piece of work, which may not have cohesively answered the research question or resulted in a credible set of recommendations for future practice, the use of the principles of biomedical ethics (Beauchamp & Childress, 2013) and the Theory of Planned Behaviour (Ajzen, 1991) were selected to provide an underpinning theoretical foundation for the study design and analysis. The intuitive application of this framework to prior knowledge and experience of the implementation of infection prevention and control policies for the management of patients under Contact Precautions provided the theoretical scaffolding for this study.

The transition of this interpretive description study from a theoretical stance to the implementation and application of the approach in entering the field and conducting the research, is described in the following chapter.

Chapter 4. Methods

4.1 Introduction

The previous three chapters have explained the motivating factors that prompted the execution of this research, have considered the research gap identified by the literature review, and described the methodological approach that was taken. This chapter outlines the methods that were used to undertake the study including the study design, participant recruitment and data collection via semi-structured interviews, and the techniques used for data analysis. The methods that were used to assure rigour as well as the considerations that were made in ensuring the study was undertaken according to the requirements of the National Statement on Ethical Conduct in Human Research 2007 (National Statement) (National Health and Medicine Research Council, 2007 - Updated 2015) are covered.

The purpose of the research reported here was to answer the overarching question which asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' by exploring the impact of Contact Precautions on patients and hospital staff and to describe and interpret participants' experiences in the context of a bioethical framework. There were three specific objectives. The first of these was to understand the impact of Contact Precautions on patients and on health professionals. To fully understand the impact of Contact Precautions it was important that the study design, participant recruitment and data collection methods facilitated the provision of authentic descriptions of the experience of Contact Precautions by people who had had first-hand exposure to them. Having recruited suitable participants it was important that their stories and reflections were reliably captured using a valid data collection method. This would enable any positive or negative impacts to be identified through effective data analysis, and the presentation of the study findings as themes for further interpretive analysis.

The second study objective was to discuss these findings within a bioethical framework with a view to exploring the ethical implications. The theoretical scaffold described in the previous chapter, and in Figure 3 provided the mechanism by which this objective was met. Through repeated immersion in the data by frequently reading interview transcripts, listening to recordings, and actively reflecting on the contents in the context of the theoretical scaffold, the ethical implications of the participants' experiences were developed. It was therefore important that the

methods used for data storage, organisation, and analysis, were appropriate to meet this objective.

The third study objective was to make recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO. The development of legitimate recommendations for ethically improved infection prevention and control practice, relies upon the selection of an appropriate research methodology, and assurance that the research methods have been reliably implemented. The purpose of this chapter is to describe the methods used to undertake the research, so that the three study objectives could be met, and the research question could be effectively and authentically answered.

Interpretive description using established theories (Ajzen, 1991; Beauchamp & Childress, 2013), and clinical experience in infection prevention and control nursing as its scaffold, was selected as the most appropriate methodology to answer the question: 'Are Contact Precautions ethically justifiable in contemporary hospital care?' The reason for choosing this methodology was that it was developed specifically to support nursing researchers in undertaking qualitative research, by guiding them in reflexive and responsive approaches to the design and execution of their work. It is an approach that has been shown to successfully support nurses undertaking qualitative research in uncovering professionally and contextually credible findings (Teodoro et al., 2018). As discussed in Chapter 2, there is limited consideration of healthcare associated infection within ethical theory, and little empirical research exploring Contact Precautions from an ethical perspective (Bryan et al., 2007; Harris et al., 2019; Millar, 2009). It was expected that this dynamic and responsive approach would show whether health professionals and patients have concerns about the ethical impact of Contact Precautions. Participant's attitudes and values relating to the management of patients identified as colonised with an MRO was expected to be seen in their descriptions of behaviours such as the use of PPE, or insistence that patients remain segregated, and acceptance or otherwise, of perceived breaches in the policy requirements. The participants' experiences might also indicate whether the reasons for sub optimal care could be attributed to an overly narrow sense of what was required to respect patient autonomy, or a prioritisation of the protection of other patients over safeguarding the colonised patient from harm. Interpretive description offers the potential for the research to 'generate new insights that not only shape new enquiries but also translate them into practice' (Thorne, 2016, p. 41). As such it was considered an ideal approach to take in exploring conflicts and tensions between

bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions.

The principles of biomedical ethics were selected because Beauchamp and Childress's principles of respect for autonomy, justice, beneficence, and non-maleficence are widely acknowledged as essential requirements of a modern healthcare system (Lee, 2012). These principles are designed to inform ethical practices in research, as well as to provide ethical guidance to health professionals in their everyday practice (Beauchamp & Childress, 2013). The framework is not designed to be used to logically or deductively conclude whether a course of action is ethical, however its structure does provide a pragmatic support to non-bioethicists in clinical settings as well as in research, by informing ethically sound clinical decision-making. This connection to the real-world application of ethical principles to clinical practice aligns Beauchamp and Childress's work to the chosen research methodology of interpretive description, because this too is designed to bring about practical and relevant evidence-based changes in clinical practice.

4.2 Study setting

The setting for this study was a publicly funded health service organisation in a regional area of New South Wales in Australia, situated around 100km south of Sydney. Participant recruitment centred on the three main hospitals providing inpatient services to the local population approaching 400,000 people.

4.3 Study design

This retrospective study was structured into three phases. These acknowledge the two separate participant groups, health professionals, and patients, and that the third study objective, to make recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO, could only occur once information had been gathered from these two participant groups. The study design is shown graphically in Figure 5 (page 82).

This figure illustrates the progression through planning and preparation to data collection and analysis, and the significance of the theoretical scaffold in supporting the three phases of the study. It also shows the requirement for dissemination of the study findings to influence ethically improved hospital infection prevention and control policy and practice.

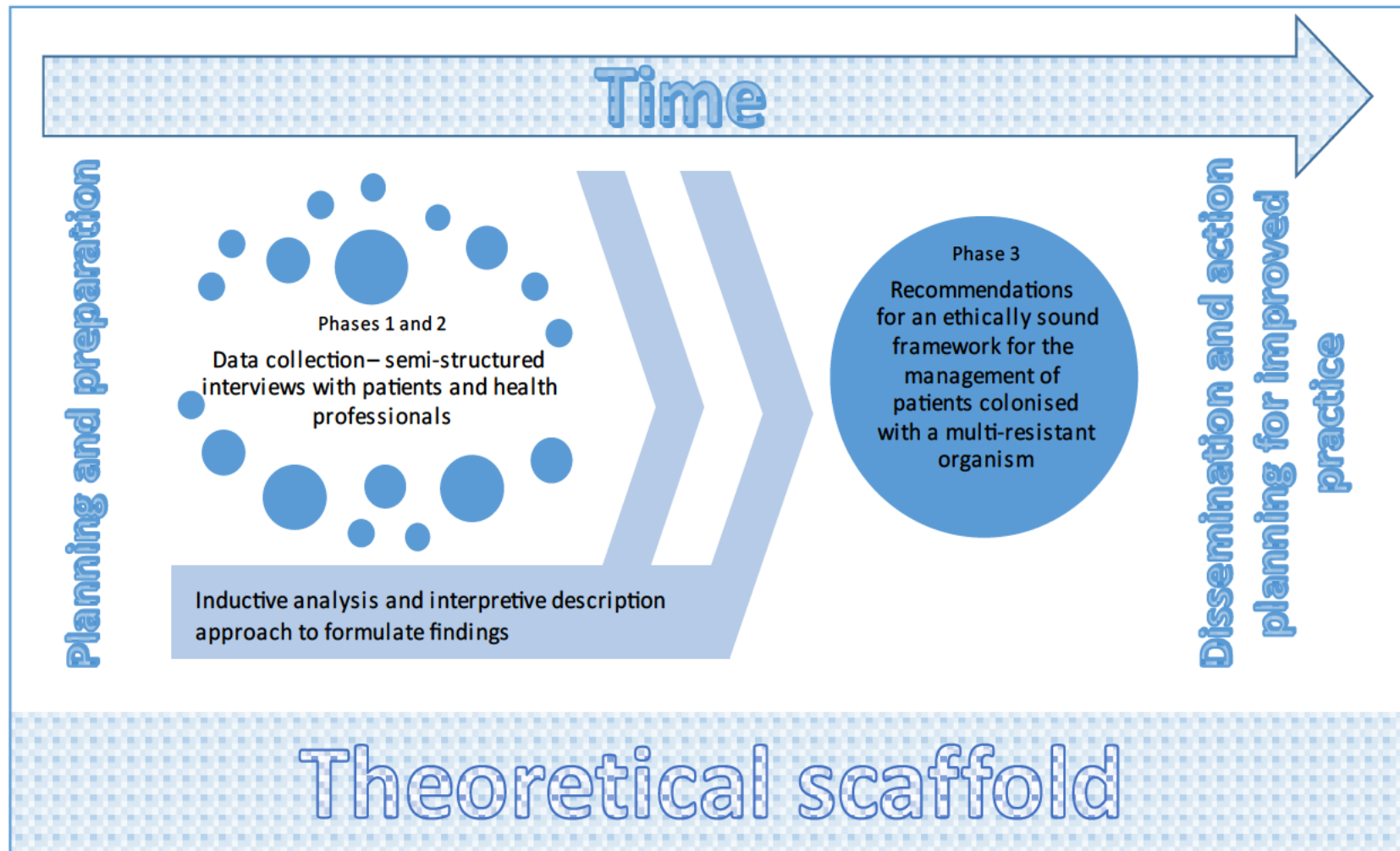


Figure 5. Study design

Study phases one and two were undertaken concurrently. This enabled the reflections from each participant to be included in the future interviews with other members of the same participant group as well as those from the other group. This was important so that the ethically relevant experiences of the patient group could be related back to health professionals as the research progressed, and vice versa. Whilst interviews are described here as having two phases, they were concurrently done. The description relates to there being two slightly different approaches taken in the focus of conversation for the patient participant interviews compared with those of health professionals. Patient interviews started with the participant being invited to talk about their experience of being managed under Contact Precautions and the impact this had on their relationships with the hospital staff, their friends and family and their overall wellbeing.

Health professional interviews started with a discussion about the participant's prior experience relating to Contact Precautions and asking them to reflect on the purpose and value of these precautions. They were then prompted to consider how Contact Precautions had affected their patients and themselves. These conversations then moved on to discussions about the practical application of Contact Precautions and health professionals were asked to describe some their perceived enablers and barriers to practising Contact Precautions effectively.

Face to face semi-structured interviews were chosen as the most appropriate data collection method for exploration of the impact of Contact Precautions from the perspective of both health professionals and patients. Semi-structured interviews have the capacity to elicit rich and varied information on a broad topic framework by encouraging participants to elaborate on their responses (Carpenter, 2013). The use of a series of topic prompts to guide each discussion facilitated the inclusion of questions designed to strengthen the understanding of the experience of Contact Precautions. These prompts were designed to enable the experience of the interviewee to affirm, corroborate, contradict, or clarify previous participants' reported experiences. This process of concurrent data collection and ongoing analysis is a key attribute of the interpretive description approach (Thorne, 2016) as described in the previous chapter.

4.4 Research ethics considerations and mitigation

Data collection involved patient and health professional participants taking part in semi-structured interviews. Two key ethical challenges were identified and addressed in the applications for HREC approval that were granted as detailed in Chapter 3.

The study setting is a group of three public hospitals within the same Local Health District (LHD) in NSW, Australia. Although I do not have a close relationship with clinical staff in any of these facilities and I am not involved in direct patient care on the wards, I am the Nurse Manager for the LHD's infection prevention and control service. The most prominent concern was that of perceived or actual conflict of interest between my professional role and that of researcher. The other key concern was the possibility of power differentials between me and potential recruits influencing the interview discussions.

Conflict of interest

It was recognised that there was a potential for perceived conflict of interest between my undertaking this research (especially the data collection phases) and my employed position within the organisation that manages the provision of healthcare to the patient participants and employs the health professionals that took part. The use of the Theory of Planned Behaviour (Ajzen, 1991) to underpin health professional interviews was expected to facilitate an understanding of the degree to which participants' beliefs about the need to comply with policies that may be seen as belonging to the researcher, impact on their reported experiences of managing patients under Contact Precautions. It was foreseen that conflicts of interest with the health professional participants might occur, since the policies they work to are developed and approved by the infection prevention and control governance structures for the LHD. They may have therefore found it challenging to be able to honestly describe their experiences in working within those policies, particularly if they disclose that they have at any time breached their terms of employment by not following these policies. Similarly, there was a possibility that patients may not feel able to criticise the implementation of a policy that they recognise as falling within the scope of responsibility of the researcher, particularly while they are hospital inpatients.

Power differential

There were concerns about whether consent to participate had been granted freely when there was a possible power relationship in play. These are recognised challenges in participant recruitment, and also pose challenges to researchers who are required to navigate, acknowledge and negotiate how to situate themselves within the research role with integrity and consistency (Thorne, 2016; Tully & Taylor, 2014).

4.4.1 Mitigation of ethical concerns for patient participants

For patients, both areas of concern were managed through the recruitment of potential participants being initiated by the patient's clinical team rather than by myself. Following a series of information sessions being provided to staff, copies of the patient participant information sheet (Appendix B) were provided with a request that they initiate a conversation with the patients about taking part in the study. From time to time I, and members of the local infection prevention and control team would attend the ward to remind staff that the research was ongoing and ask staff to offer their patients the information sheet. Members of my team would also approach patients to provide them with the information sheet (Appendix B). Potential participants were informed of my role within the organisation, and that they were able to withdraw from the study at any time. It was initially expected that patient participants would be interviewed following their discharge from the hospital to reduce the risk that my relationship with the organisation might negatively impact on the patients or with the validity of their feedback. However, several patients voiced their preference to be interviewed while in hospital, so this aspect of the study was amended, with approval from the HRECs.

The patient information sheet reinforced that the purpose of the study was to explore the patient's perspective on being managed under Contact Precautions, and that the researcher had no knowledge of, or influence on the future or past management of the medical condition that led to their hospital admission. During interviews, this message was reinforced should the patient participants indicate that they expect their involvement to lead to any alterations to their clinical management plan. In addition, it was important that participants understood that their involvement would not have an immediate impact on the organisation's infection control policy framework. The patient participation information sheets made this clear and this was also reinforced in further conversations I had with potential participants. Patients

who were interested in taking part completed the expression of interest form at the bottom of the information sheet (Appendix B). This enabled me to visit them on the ward to discuss the project so that they could decide whether to take part. Patients who were willing to participate in the study completed a consent form and were again reminded they could withdraw from the study at any time (Appendix C).

4.4.2 Mitigation of ethical concerns for health professional participants

Anticipated conflicts of interest with the health professional participants related mainly to the likelihood that their interviews would include significant commentary about infection prevention and control policy, specifically the application of Contact Precautions, as this is the central element of the research question, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' This risk was mitigated through the provision of a clause stating that the researcher will maintain confidentiality and that any information supplied during the research would only be used for the purposes of the research. This was included within the study protocol, participant information pack (Appendix B), and consent form (Appendix C). Health professional participants were also reminded that they could remove themselves from the study at any time.

The reflective journal that was created during data collection provides information that demonstrates that as the recruitment and data collection progressed these concerns were unfounded; many staff and patients were very happy to constructively critique infection prevention and control policies and practice. An unanticipated difficulty arose early in the study however when several potential participants expressed an interest in taking part but were not comfortable being interviewed outside the hospital. As previously noted, patients also voiced a preference for being interviewed whilst in hospital, and the study protocol was adapted accordingly, with HREC approval.

4.5 Ethics approval

The data collection component of this study used face to face interviews to explore participants' experience of following infection prevention and control policy (healthcare professionals) or of being managed according to the policy (patients). This research was classified as low risk according to the guidance provide in the National Statement (National Health and Medicine Research Council, 2007 - Updated 2015). While discomfort might occur for both groups of participants whilst

discussing the emotional, physical, or psychological effects of Contact Precautions, no distress or harm was anticipated.

My position as an employee of NSW Health, and a Higher Degree by Research (HDR) candidate with the University of Tasmania (UTAS), meant two ethics applications were required. Approval was first provided by the HREC for NSW (through the University of Wollongong). Local site-specific ethics approval was also given by the LHD hosting the inpatient services provided to the participating patients and employing the health professional participants, as well as myself. The reference number is HREC 2017/324. Approval was also provided by the University of Tasmania HREC (H0016918). This was required as the research was being done for PhD studies under the auspices of the University.

The initial application stated that patient participants would be interviewed following their discharge from hospital, and health professionals would be interviewed at a time and place of their choice.

4.5.1 Amendment to the original research plan and amended ethics application

As the study progressed, many patients voiced an interest in taking part, but asked to be interviewed during their current hospital admission rather than after their discharge home. They explained that they did not want to have to think about their experiences once they were home, and they were keen to share their experiences with me while they were still fresh in their mind. Similarly, health professionals were reticent about being interviewed away from their work setting due to personal privacy and time constraints. They were keen to take part, but wanted to share their reflections there and then, and they were not willing to be interviewed outside of their work hours or away from their work setting. Having heard these concerns when trying to recruit participants to the study, an amendment was made to the ethics application requesting that the interviews take place on healthcare premises. This was approved by both HRECs and having received this approval for the amendment in September 2018, recruitment proved easier. Interviews were held between the beginning of January 2018 and the end of March 2019. In the first five months nine people were successfully recruited compared to the twenty-three participants who joined the study in the last five months.

4.6 Sampling and recruitment

Purposive sampling was by definition, necessary for this study, as the participants must have had first-hand experience of the situation under examination in order to describe it (Liamputtong, 2013). Potential participants were doctors, nurses, physiotherapists, and occupational therapists working in hospital, who had experience of implementing Contact Precautions, and hospital patients who had been managed under Contact Precautions because of known colonisation with an MRO. Two of the patient participants were approached while being visited by their spouse. On both occasions their spouse joined the discussions to impart their own perspective on their partner's experience of Contact Precautions.

The first stage of participant recruitment was a series of preparatory information sessions to staff working within the facility, to explain the background and purpose of the study, and the methods that would be used. This was so they were aware of their role in discussing the research with patients, and so they themselves could consider being involved. These sessions took the form of presentations to medical staff during scheduled routine weekly meetings, and short in-service updates to nursing staff and allied health professionals during their allocated education timetabling, in their workplace. These sessions provided an opportunity for staff to ask questions about the research and one to one discussion about the study also occurred on request. Examples of the language-appropriate written information brochures that had been developed for patients and staff (Appendix B), were provided at these sessions (Tully & Taylor, 2014). Health professionals were asked to provide patients who were being managed in Contact Precautions because of MRO colonisation, with information about the study. These staff were asked to be the conduit for the return of interested patients' expression of interest forms so that the next steps of patient recruitment could occur. Staff who were interested in taking part were asked to complete an expression of interest form and to return it at the end of the meeting or at any later time at their convenience. The participant information sheets are provided in Appendix B.

Hospital wards were visited periodically, to remind staff that the research was ongoing and ask them to consider taking part and to offer their patients the information sheet. Members of the infection prevention and control team approached patients to give them the information sheet and expression of interest form. Potential participants were invited to seek clarification of any aspect of the study prior to deciding whether to take part but were asked to make their decision

within three days. For patient participants this was to facilitate the generation of information that most accurately reflected the person's experiences, attitudes, beliefs, and feelings about Contact Precautions as close as possible to their experience. Setting timeframes also helped the study to proceed according to the project plan. People who agreed to participate signed a consent form (Appendix C). They were provided with my contact details and reminded they could withdraw from the study at any time.

Interpretive description can be used with samples of any size and there are no concrete rules governing this (Teodoro et al., 2018; Thorne, 2016). To determine if any sample size is considered optimal in interpretive description, other recent interpretive description studies were reviewed. This revealed 7 studies published between 2007 and 2017 where participant numbers ranged from 10 (Kalengayi et al., 2012; van Wiltenburg, 2007) to 60 (Thorne et al., 2010). Review of these studies confirmed the ability of interpretive description utilising semi-structured interviews and comparatively small sample sizes to generate clinically applicable knowledge about people's experiences.

Thorne (2016) explains that the construct of 'saturation' is actively discouraged in interpretive description studies. The rationale for this advice is that within health research the likelihood that no new variation could emerge is contrary to the conceptual foundations of practice knowledge. Rather, it is suggested that as long as it is recognised and acknowledged that further information might be available if more people had participated, it is acceptable to establish an arbitrary sample size 'there is no firm and fast rule regarding what constitutes the right sample size for an interpretive description study' (Thorne, 2016, p. 105).

For this study, it was anticipated that the size of the sample would be informed by the research findings as they emerged and would be dependent on several factors including the degree to which each participant was willing or able to share their experience. It was expected that at least ten health professionals and ten patients would initially be recruited into this study. Recognising the importance of ensuring heterogeneity amongst participants, purposive sampling continued beyond the ten health professionals that were originally planned. This was necessary to capture any discrepancies and contradictions that could be attributed to their different professional standpoints, and to accommodate other demographic differences such as gender. Recruitment of patients continued until a diverse range of experiences

and commentary had been captured, with enough alignment between patients to provide confidence of the ability of the data to answer the research question.

4.7 The participants

This study involved thirty-three participants who were interviewed either in one of the three designated hospitals or, for patients, at their home address. Two patients took the opportunity to be interviewed with their spouse. Twenty-four health professionals took part, representing a range of clinical specialties. Further details about the participants are provided in Chapter 5.

4.8 Data collection process

The aim of this study was to answer the overarching question which asked, ‘Are Contact Precautions ethically justifiable in contemporary hospital care?’ by exploring the impact of Contact Precautions on patients and hospital staff and to describe and interpret participants’ experiences in the context of a bioethical framework.

Semi-structured interviews with health professionals were structured loosely around constructs relating to both biomedical ethics and the Theory of Planned Behaviour so that the resultant transcribed dialogue could be inductively interpreted through those lenses. During the interviews prompts were provided to guide the flow of the conversation. Participants were guided towards describing aspects such as their feelings about Contact Precautions, health professionals’ preparedness and abilities in answering patients’ questions, whether patients should have a choice about Contact Precautions, and whether these patients are treated differently from others. Furthermore, health professionals were asked to describe any barriers or enablers they had encountered in following infection prevention and control policies when Contact Precautions are indicated.

For patients, prompts were more aligned to the principles of biomedical ethics than the Theory of Planned Behaviour, with questions exploring aspects such as the participant’s feelings about being managed using Contact Precautions, how much information they had received about Contact Precautions and where this information came from. Additionally, patients were asked whether they had noticed anything changing in the way people related to them after the Contact Precautions were started.

The concurrent data collection and analysis that is a feature of interpretive description facilitated responsiveness and adaption of the questions and prompts

as the data collection progressed. This optimised the ability to test, explore and expand on the conceptualisations as they were formulated as soon as initial coding, and subsequent grouping and theming happened. As more interviews were undertaken, subsequent participants were asked questions that would enable a greater understanding of a topic raised by a previous participant. This enabled constant comparative analysis to occur throughout.

As described earlier in this chapter and illustrated in Figure 5, this study was structured into 3 phases. Phases 1 and 2 were undertaken concurrently during the period from January 2018 to March 2019, with initial analysis running synchronously throughout. To answer the overarching research question, some specific research questions linked to each phase needed to be explored during the interview process. These are detailed below.

4.8.1 Phase 1 (health professionals)

The objective of phase 1 of the study was to understand the impact of Contact Precautions on health professionals, and to discuss these findings within a bioethical framework.

The interviews with health professionals who had managed patients under Contact Precautions were expected to provide a rich source of information relating to their views and experiences of the harms or benefits of Contact Precautions. Of particular interest in this phase was the opportunity to discover the drivers for health professionals' decision-making about the practical application of Contact Precautions, to understand what impact those drivers have on health professionals' personal and professional autonomy (Pellegrino, 1994), and to identify threads that might relate to the principle of justice. The Theory of Planned Behaviour was utilised along with the framework of bioethical principles because of its particular focus on the cultural and environmental factors that influence the actions that an individual might take. The justice and non-maleficence element of the theoretical scaffold would relate to whether health professionals felt that Contact Precautions affected their ability to provide equitable care to patients, and their experience of any harm that they felt had been caused by Contact Precautions. This then leads into the principle of beneficence; if health professionals have noticed that Contact Precautions have a negative impact on their patients, how do they manage the resulting conflict with the principle of beneficence that requires health professionals to act in their patients' best interests to support wellbeing?

To answer the overarching research question the following phase-specific sub-questions were framed:

Phase 1.Q1. What do the experiences of health professionals reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions?

Phase 1. Q2. How do the ethically relevant features of health professionals' experience of Contact Precautions map to principles of biomedical ethics (Beauchamp & Childress, 2013)?

Phase 1. Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with a multi-resistant organism are managed under Contact Precautions?

The following construct of broad topic prompts was followed for each health professional interview. The questions and comments shown in Table 3 were not presented verbatim or in the given order and were not used in every case if they were not relevant to the participant's focus in the discussion. However, where necessary they proved invaluable on occasions where an interview seemed to falter, by providing a means of re-focussing the discussion.

Interview question topic prompts for health professionals
Preliminary conversation to set the scene and context
Bioethical construct (Beauchamp and Childress 2013)
<ul style="list-style-type: none"> • Who do you think Contact Precautions are designed to protect?
<ul style="list-style-type: none"> • How do you feel when explaining the rationale for Contact Precautions to patients with a multi-resistant organism?
<ul style="list-style-type: none"> • What can you tell me about the amount of choice patients have about whether Contact Precautions are used?
<ul style="list-style-type: none"> • What information do you use to decide whether a hospital patient should be managed under Contact Precautions?
<ul style="list-style-type: none"> • What have you noticed about the way that nurses and other colleagues treat patients who are identified as colonised with a multi-resistant organism?
<ul style="list-style-type: none"> • Please describe your feelings about providing care to hospital patients after they are identified as colonised with a multi-resistant organism, compared with beforehand.
<ul style="list-style-type: none"> • What kind of things have you heard patients say about Contact Precautions?
<ul style="list-style-type: none"> • What kind of things have you heard colleagues say about Contact Precautions?
TPB construct (Ajzen, 1991)

Interview question topic prompts for health professionals	
Attitude toward the behaviour	What do you think are the advantages of Contact Precautions for patients with a multi-resistant organism?
	What do you think are the disadvantages of Contact Precautions for patients with a multi-resistant organism?
Subjective norm (social pressure to perform or not to perform the behaviour)	Who do you think would approve of you doing Contact Precautions for patients with a multi-resistant organism?
	Who do you think would approve of you not doing Contact Precautions for patients with a multi-resistant organism?
Perceived behavioural control (how easy is it to do the behaviour?)	What factors or circumstances make it easy for you to do Contact Precautions?
	What factors or circumstances make it difficult or impossible for you to do Contact Precautions?
Demographics	
Participant type – Doctor, nurse, allied health professional	
Gender	

Table 3. Interview topic prompts for health professionals

4.8.2 Phase 2 (patients)

The process for data collection and analysis of the experiences reported by patient participants mirrored that described for the health professional participants. This was altered where necessary to meet the objective for phase 2 of the study.

The objectives for phase 2 were to understand the impact of Contact Precautions on hospital inpatients and to discuss those findings within a bioethical framework. Contact Precautions intentionally restrict the ability of patients to move about their hospital ward. This is an obvious external controlling influence that will impact on the patient's ability for autonomous action. The patients' opinion about the fairness of the situation relates to the principle of justice, and the degree to which non-maleficence and beneficence are impacted by Contact Precautions is explored by understanding whether patients felt there had been any harm caused or had noticed any omissions being made in their health provision because of Contact Precautions being in place. The purpose of this phase was to understand what impacts there had been on patients' abilities for making decisions about their care (respect for autonomy), and to seek out themes that might relate to the principles of justice, beneficence, and non-maleficence.

The published literature relating to the impact of Contact Precautions on hospital patients is extensive (Harris et al., 2019). Whilst some studies have asked patients to describe their experiences (Barratt et al., 2010; Skyman et al., 2010), others have used quantitative measures such as rates of falls, pressure ulcers, and medication errors (Croft et al., 2015; Gandra et al., 2014; Karki et al., 2013) as descriptors of the impact of Contact Precautions on patients. To answer the research question, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' from the patients' perspective, it was important to hear about events that had happened to these patients and to learn what emotional responses had been elicited because of their being managed under Contact Precautions.

Of particular interest in this phase was the opportunity to discover what aspects of the experience of Contact Precautions were most positively or negatively significant for patient participants. To facilitate this understanding the following phase-specific research sub-questions were framed:

Phase 2. Q1. What do the experiences of patients tell us about what is ethically relevant in the care of patients who are colonised with a multi-resistant organism being managed under Contact Precautions?

Phase 2. Q2. How do the ethically relevant features of patients' experience of Contact Precautions map to principles of biomedical ethics (Beauchamp & Childress, 2013)?

Phase 2. Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with a multi-resistant organism are managed under Contact Precautions?

The intention was to be able to understand patients' points of view and rationale for that position, to hear the stories that have developed those points of view and to appreciate the overall patient experience rather than single episodes of care.

Data collection for Phase 2 mirrored the method used in Phase 1 (see page 91,) with the phase-specific questions and topic prompts being tailored to the patient experience rather than that of the health professional as shown in Table 4. As with the health professional interviews, where an interview seemed to falter or tend to move to an unrelated conversation, these prompts provided a valuable mechanism for redirecting the dialogue.

Interview question topic prompts for patients
Preliminary conversation to set the scene and context
Bioethical construct (Beauchamp and Childress 2013)
What impact does the application of contact precautions for the management of patients with a multi-resistant organism have on patients' experience (of bioethical principles)?
<ul style="list-style-type: none"> • When you had the [wound] swab collected did the nurse or doctor explain why it was taken and what might happen if (the organism the patient has) was found?
<ul style="list-style-type: none"> • What can you tell me about the reason you are in isolation?
<ul style="list-style-type: none"> • Have you changed anything since you were told you had (the organism the patient has)] and needed to be isolated?
<ul style="list-style-type: none"> • Have you noticed any changes in the way other people including the staff here, and your family and friends, treat you since you were told you had (the organism the patient has) and needed to be isolated?
Attitude toward having the multi-resistant organism and being managed under Contact Precautions
<ul style="list-style-type: none"> • What is it like to be here?
<ul style="list-style-type: none"> • What do you think about having (the organism the patient has)?
<ul style="list-style-type: none"> • Can you tell me what makes you think this way?
Demographics
Participant type – patient
Gender

Table 4. Interview topic prompts for patients

4.8.3 Interviews

As previously described, data collection was achieved through semi-structured interviews. Participants were individual health professionals (doctors, nurses, or allied health professionals) who had had experience of managing patients colonised with an MRO under Contact Precautions, or patients who had been identified as colonised with an MRO and had experienced Contact Precautions as a result. Each of the 33 interviews lasted between 20 and 50 minutes depending on the time available to the participant and the amount of information they wished to share.

Having provided consent to participate in the study (Appendix C), a time and suitably quiet and private venue was arranged for the interviews to take place. Being aware of variations in intonation and expression can be invaluable in the data analysis, thus interviews were digitally recorded. This also enabled concentration on the discussion rather than on recording proceedings by other means such as taking

written notes during the interview (Notley et al., 2014). Professional transcription of each interview recording was undertaken verbatim to enable interpretive and reflexive analysis of the content. Throughout data analysis these recordings proved crucial in recalling aspects of the interview that were not captured on the written transcript. In addition to the participant interviews, reflections on each interview were captured through field notes and a research diary. This process enabled incorporation of early thoughts and ideas about the important themes to be formed and it facilitated their inclusion in the subsequent interviews. This is an important construct within the process of undertaking an interpretive description study (Thorne, 2016).

At this stage, each participant was assigned a code formed from a pseudonym first name followed by their designation N (nurse), D (doctor), A (allied health) or P (patient). This device protected participants' anonymity throughout all further stages of analysis and is used throughout this thesis to attribute quotes or specific findings where appropriate.

4.9 Data analysis

The interpretive descriptive researcher is not merely a medium through which information is passively brought, but an interpretive instrument able to make sense of other people's descriptions of their experience (Thorne, 2016). My long-standing experience as a nurse working in the specialist field of infection prevention and control supported the ability for this aspect of interpretive description to be met.

In qualitative research, analysis of interview data is an iterative, multistep and circular sense-making endeavour and the development of a code book is often considered a crucial initial step in that process (DeCuir-Gunby et al., 2011). However, Thorne cautions against early detailed coding into small data units, preferring the collation of researcher insights, field notes, transcribed data and use of field notes as they relate to the theoretical scaffold to bring intuitive consideration of the overall picture (Teodoro et al., 2018; Thorne, 2016). Nevertheless, a code book was developed to facilitate consistency in the initial and further coding as the study progressed. This proved invaluable as the breadth and volume of data became evident.

As described in Figure 5 which depicts the study design, data collection and analysis occurred concurrently. The role of the field notes and reflective journal in the creation of the growing understanding of the subject was key. Codes are labels or

tags that are assigned to sections of data that relate to a specific context. In this study the codes were developed intuitively and inductively through a combination of an a priori reference to the theoretical scaffold as well as from the raw data as the interviews and further analysis progressed.

Following each interview, the audio recording was listened to several times, and the reflective research diary was updated. As soon as each interview transcript was returned, it was read alongside the recording of the interview, to check the transcript for accuracy. Repeated listening to the recorded interviews identified aspects of the interview that would not be captured through transcription, such as tonal variations or non-verbal expressions of emotion such as crying. This allowed interpretation of the transcribed verbal descriptions in tandem with the affective elements and reflections on each interview. In this way the findings' multi-faceted relationship to the theoretical framework could be explored and understood.

A brief vignette of each participant and their interview was created to facilitate concurrent and responsive inclusion of the ongoing findings into the subsequent data collection. This process helped to embed the interview experience with the written record of what was said during the interview in order that each participant could be seen as an individual, but also as connected to the other participants, the research process, and the theoretical scaffold. A selection of these vignettes is provided in Chapter 5 as a means of enabling the reader of this thesis to similarly connect with the participants who so generously shared their experiences of Contact Precautions during this study.

Validation of these interpretations was not done by taking the analysis of an individuals' experience back to that person as confirmation as is the case in other qualitative approaches. Rather, the initial threads and themes from the growing cohort of participants were shared with individual participants during their interview, inviting them to provide feedback on how well the developing picture matched their own experience. This is described as a useful mechanism for identifying outlying themes or divergences which can be useful in the construction of the findings (Thorne, 2016). NVivo 12 software (QSR International, 2018) was chosen to collate the data and to help to organise and track the progress of analysis and record the developing findings in the form of a codebook. A key driver for this decision was a recognition of the potential for information to be missed because of the amount of descriptive information that had been collected, and the sheer scale of the analytical

challenge presented by data provided by the thirty-three interviews. Initial coding of the transcripts was undertaken using the following methods:

4.9.1 Initial descriptive coding (Liamputtong & Serry, 2013)

Creating codes involves meshing theoretical scaffold insights with the data that is generated during the interview (DeCuir-Gunby et al., 2011). To support effective and insightful coding field notes were made immediately after each interview. These notes included a brief reflection on how the interview had proceeded and recorded the immediate thoughts and feelings about the messages that were being relayed by the participant. Field notes included mud maps and key words, summarising the overall picture the participant was painting regarding their experience of Contact Precautions. Initial codes were assigned to the source data through repeated reading of the transcripts whilst listening to the interview recording. Initial codes tended to be reflexive and responsive, taking the participants' words literally, and classifying them very simply. Some phrases were ascribed to more than one code. Examples of the initial coding are given below.

Transcribed dialogue	Initial code
Tricia (P) 'No, I wasn't really told like sit down and told'.	Nobody told me
Sally (P). 'I felt powerless I didn't know what was happening to me half the time'.	Powerless
Judy (A) 'I touch them, I – you know, do everything the same as what I would with everybody else'.	No difference reported
Milo (P) 'Everybody puts gloves on, it's sort of a waste of gloves and everything else'	Waste
Milo (P) '...they walk in you, do your obs, they don't really touch you half the time, then they throw the apron away. Sometimes, I feel like I've got the plague or something, the way I've sort of, just they're not treating me like, it's just me, I feel like that'.	They don't really touch you
	Differences noticed
	Plague

Table 5. Examples of initial coding

4.9.2 Focused and axial coding (Liamputtong & Serry, 2013)

Axial coding is the higher-level coding that enables connections between codes to be understood and described, and the development of themes and concepts into a cohesive framework (DeCuir-Gunby et al., 2011). To do this, the initial codes were reviewed to inductively seek out connections, by asking questions such as: 'What is this?' 'What is happening here?' 'What does this stand for?' 'What else is this like?' 'What is this distinct from?' These questions enabled the initial codes to be grouped and structured into a more cohesive and manageable form.

A further inductive and deductive review was undertaken to combine similar codes into groups whilst maintaining contact with the chosen theoretical frameworks. This was achieved through a process of reflecting on the participants' dialogue, looking for indications that any of the four principles of biomedical ethics had relevance, and if so in which way. Consideration was also given to whether components of the Theory of Planned Behaviour (Ajzen, 1991) were in play, such as the culture on the ward, or the underlying beliefs and attitudes that the participant held towards Contact Precautions or communicable disease.

Interpretive description requires this analytical process to be done in a way that moves beyond simple content analysis of the theoretical framework, or a deductive fitting of the data to the theory, to one which uses creativity and imagination founded from the researcher's own positioning within the field. It is expected that this approach will move the initial descriptive assertions 'toward abstracted interpretations that will illuminate the phenomenon under investigation in a new and meaningful manner' (Thorne et al., 2004, p. 5).

Graphic representations of both theoretical frameworks were posted above my desk to help prompt this reflection and to support the interpretive component of this methodological approach. This enabled a conscious examination of each transcript, and journal entries, in the context of an ongoing connection with both.

In this way the theoretical scaffold provided a consistent thread running through all phases of the research, from the framing of the semi-structured interviews and the ongoing reflection and inclusion of the early analysis into the subsequent interviews. This meant that when the data collection phases were complete and the formal process of thematic analysis took place, components of the theoretical approaches were combined with my significant professional experience as an infection prevention and control nurse. Thematic analysis and aggregation provided further

insight to further inform, shape, develop and fine tune the interpretation of the data into the findings.

The use of NVivo 12 (QSR International, 2018) enabled a consistent approach to the exploration of the connections between the themes and the many sub-themes and the participants, and to check for discrepancies and paradoxes within the data. In many instances one piece of data would be found to be relevant for coding in more than one node. It was also noted that nodes could also be applied to more than one theme, albeit, with a particular differentiating focus and perspective.

Where similar nodes were found to relate to more than one theme, NVivo 12 was used to further refine and rename the node for the context of the theme. The use of this software therefore enabled discrepancies and paradoxes within the data to be explored more thoroughly than would have been possible using manual coding systems, or simple word recognition in word or excel software.

4.9.3 Key informants

During the data collection phases of the study, several participants were particularly engaged and thoughtful during their initial interviews. Thorne describes these people as ‘key informants’ and suggests they may be useful in providing further insights and challenges to early analysis thereby strengthening the analytical process (Thorne, 2016, p. 99). At the beginning of 2020 I had intended to return to three participants. Having reminded them of the purpose of the study and that they could withdraw at any time if they wished, they were to be shown the collated themes from the other participants. The purpose of this was to invite them to comment and to discuss whether the themes were reflective of their experience, and to consider whether the themes were dissonant from their experiences. This process of checking was expected to help ensure that my place within the research had not overly influenced the analysis to date.

It is fortuitous that this process of returning to key informants is not an absolute requirement of interpretive description, because at the end of 2019, news of a novel respiratory virus known as COVID-19 emerged from China, and in March 2020 the World Health Organisation declared a state of pandemic. A range of restrictions to travel and social and work gatherings were enforced, and particularly vulnerable people (for example those over the age of 70 and anyone with chronic conditions such as diabetes) were required to limit social interactions and non-essential contacts to safeguard their health. The patients I was hoping to involve as key

informants were people classified as vulnerable under this description. In addition, my professional workload, and that of many of the health professional participants increased enormously because of the need for a strategic and operational response to the containment and control of the virus within NSW. Both factors meant that it was no longer possible or appropriate to revisit these key informants as originally planned.

Data analysis continued through immersion in the transcripts and recordings of the interviews. Themes were refined further through consideration of how the participants' words and non-verbal communication had related to the four principles of biomedical ethics, in order that the research question might be effectively addressed, and appropriate recommendations made. This inductive analysis enabled a range of conclusions to be made upon which Phase 3 of the study was founded.

4.10 Phase 3. Development of recommendations

Having explored the research question using interpretive description, the purpose of phase 3 of the study was to consider how the identified themes could inform recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO. Subsidiary questions 3 and 4 were addressed as the means of providing these recommendations:

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with a multi-resistant organism are managed under Contact Precautions? This question required the positive and negative experiences of the participants to be considered through an empiric bioethical lens so that any identified conflicts or tensions could be identified. For example, some participants may describe being isolated in a single room as beneficial and supportive, and some may describe having confidence that isolation of people colonised with an MRO protects others from becoming colonised. These findings would imply that Contact Precautions support the principle of beneficence. These two findings are compatible and do not demonstrate ethical conflict.

However, it is possible that some participants will describe adverse consequences including physical or emotional harm, because of Contact Precautions. This finding would imply that Contact Precautions might pose an ethical conflict with the principle of non-maleficence. In this case there would be an ethical tension between the principles of beneficence and non-maleficence.

These identified ethical tensions will provide the basis for consideration of the fourth subsidiary research question:

Q4. If there are challenges, what changes could be made to appropriately resolve any conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way? This question also provides the foundation for the third study objective which was to make recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO.

4.10.1 Phase 3 method

This interpretive description of the experiences of health professionals and patients using the chosen theoretical scaffold (Ajzen, 1991; Australian Commission on Safety and Quality in Healthcare, 2020; Beauchamp & Childress, 2013), has enabled improved understanding of the ethical impact of Contact Precautions on health professionals and patients. The purpose of this phase of the study was to make recommendations that will support an ethical approach to infection prevention and control practice in the future. This was achieved through bringing those separate insights together to compare each participant groups' perspective, and whilst remaining connected to the theoretical frameworks, consider how those findings could be used to influence ethically improved policy and practice. It is expected that these recommendations will be subject to scrutiny from the broader clinical professional and academic world and will be critically compared with other published findings. It is hoped that the findings of this study and the subsequent recommendations will be accepted for consideration by future policy makers and that further research will be prompted. For this to occur, policy makers will need to be assured of the rigour of the study that has informed those recommendations.

4.11 Rigour

Rigour is described in qualitative research as the degree to which the findings are trustworthy. Within interpretive description integrity to the interpretive process is more important than rigid adherence to formal validation strategies or formulae (Thorne et al., 2004). However, in this study rigour was supported by incorporation of internationally recognised criteria (Critical Appraisal Skills Programme, 2013) throughout all stages of the research design and implementation.

Liamputtong (2013) describes the measures of rigour for qualitative research as credibility, transferability, dependability, and confirmability. Credibility relates to the question of whether the findings can be regarded as truthful, and how believable they are. To give credibility to the research design, implementation, and outcome, a range of measures were used including the use of diarising, memos, field notes, and reflective accounts. These records captured those early intuitions and participants' non-verbal messaging that complement the other data such as the interview recordings and verbatim transcripts.

As the analysis continued, discussion during regular supervision meetings enabled each decision about the attribution of a theme and its relationship to the principles of biomedical ethics (Beauchamp & Childress, 2013) to be challenged and justified. The connection between these principles and the study findings are expressed in Chapter 6.

Transferability asks whether the findings can be applied to other contexts or participant groups. Transferability requires clarity in the description of the research design and methods so that other researchers may either undertake the study in their own contextual setting or be able to assess whether the findings can be translated to their own context. The research setting has been described in some detail as have participant characteristics, and the theoretical scaffold on which the study is founded. Future researchers and policy makers will be able to make their own assessment of how well their context matches that described here.

Dependability requires that the reported findings fit the raw data and asks whether there is documentation to support the process that was followed. Maintenance of the reflective research journal throughout all stages of the project, in addition to the verbal or written records of data collection such as interview recordings and verbatim transcripts, provide evidence supporting the dependability of the study. The use of NVivo 12 has enabled a capacity for the development of the themes and the connections or divergencies between different participants' perspectives to be explained and explored.

Confirmability requires there to be a clear link from the raw data to the reported findings. Any person external to the study, should at any time in the future be able to follow an audit trail of the actions taken, be able to understand what processes occurred throughout the study, and be able to identify how the findings and conclusions were arrived at (Bazeley & Jackson, 2016). Research notes and diary

entries provide an audit trail of the themes as they developed and matured on inductive analysis and interpretation.

In assuring rigour, all these components are supported by the process of data verification. Within interpretive description, emerging themes from the entire sample to date, are shared with individual subsequent participants during their interview, for their critical consideration as to how well those concepts 'fit' their own experience. This is because important insights can be gained from understanding contrary views as much as confirmatory ones, allowing the veracity of the emerging themes to be tested, which in turn enables further refinement of theoretical linkages (Thorne, 2016). This approach allows participants the opportunity to 'co-create' the study findings (Teodoro et al., 2018). Accordingly, during the interviews, and as the data collection phases progressed, participants were informed when other participants had described similar experiences to their own. Participants were also asked during their interviews whether they had experienced similar feelings or been subjected to similar practices that others had previously described.

As described previously, the original intention to return to key informants was made impractical with the emergence of the COVID-19 pandemic in early 2020, however, this is not an essential component of interpretive description and so this will not have materially affected the rigour of the study.

4.12 Chapter summary

This chapter has described the methods that were used in recruitment, data collection, and data analysis stages of this study. It has also described the methods that were used to strengthen rigour so that the findings, and importantly, the recommendations, might be seen as dependable and credible by future researchers and policy makers. Chapter 5 describes the study participants. It also introduces a series of vignettes, to make the participants' voices central to this thesis. Subsequent chapters will present the broad findings as viewed through the chosen theoretical lenses and then further conceptualise, develop, and discuss those findings in the context of the theoretical scaffold.

Chapter 5. Participants and Interviews

5.1 Introduction

The previous chapter described the methods used to undertake this interpretive description study, through participant recruitment, data collection and interpretive descriptive thematic analysis. The purpose of this chapter is to introduce the study participants, giving some demographic detail and depictions of their personal experiences with Contact Precautions. Characteristics of the participants, such as their gender and age, and for the health professional participants, the length of time they have worked in healthcare settings in their current role, are described. For the patient participants, some of their previous healthcare experiences and their life events are shared where considered relevant, such as their previous exposure to communicable diseases. Selected vignettes from each of the participant groups are provided to introduce these people as authentic entities and to promote their role as active agents in the research.

The purpose of this chapter and the following chapters where the findings are presented, and then more extensively developed and interpreted in the context of the research question and the theoretical scaffold, is to focus a bioethical lens on Contact Precautions. This enhanced understanding of the impact of Contact Precautions on patients and health professionals extends beyond personal prior knowledge and experience, and beyond what has previously been reported and described by others.

5.2 Participant groups and attributes

The 33 participants were either health professionals working in a hospital setting who had experience in Contact Precautions, or a patient being managed under Contact Precautions after having been identified as colonised with a multi-resistant organism (MRO). Data collection was achieved through semi-structured interviews.

Twenty-four health professionals took part, representing nurses (13), doctors (7) and allied health professionals (4) of whom 2 worked in occupational therapy, and 2 as physiotherapists. Insights from family members can strengthen data in interpretive description studies (Thorne, 2016) and in this study 2 of the 9 patient participants chose to be interviewed with their spouse. This inclusion of spouses in the interviews stimulated discussions about the impact of Contact Precautions on other family members, and on personal relationships.

Table 6, below, illustrates the demographic details for the participants showing age, gender, and for health professionals, the number of years they have worked in their current professional role. The number of health professionals with clinical experience in hospitals other than the one at which they currently work, is also shown.

Classification		Patient N= 9	Doctor N= 7	Nurse N= 13	Allied N= 4	Total N=33
Gender	Male	2	4	5	0	11
	Female	5	3	8	4	20
	Mixed couple	2	-	-	-	2
Age	<25	1	0	2	0	3
	25 - 40	1	5	9	4	19
	>40	7	2	2	0	11
Work experience	< 2 years	-	1	1	0	2
	2 – 5 years	-	0	3	1	4
	5 – 10 years	-	3	6	2	11
	10 - 20 years	-	2	2	1	5
	>20 years	-	1	1	0	2
Experience of working in other hospitals		-	6	10	4	20

Table 6. Participants' demographic characteristics

The group of participants comprises more females than males, which for nurses and allied health professionals, reflects the workforce demographic for these professions in NSW (NSW Ministry of Health, 2017; Nursing and Midwifery Board of Australia, 2018; Occupational Therapy Board of Australia, 2017). There were also more females than males in the patient participant group. Most of the health professionals interviewed were aged between 25 and 40 years of age, whilst most patients were older than 40. There was a broad range of experience, ranging from less than 2 years to more than 20 years, amongst the health professionals. All but four had worked in hospitals other than their current place of employment.

In this study, researcher positioning is a crucial piece of the theoretical scaffold. To introduce the participants, some of whom were intended key informants because they were particularly insightful, participants vignettes are included in this chapter.

Vignettes include the reflections about the interview, as they were written in the research journal. Inclusion of these vignettes is intended to bring the immediate impressions of the interviews, instilled by interview participants' expressed emotions, feelings, and spoken words, to the centre of this work. This recognises that research findings, and the answer to the research question, will be informed by a holistic understanding of participants' experiences.

These six vignettes are included to enable readers of this thesis to connect with the experiences of selected patients and health professionals more fully than their transcribed words alone could portray.

5.3 Participant vignettes

The first of these vignettes relates to one of the most thought-provoking interviews I held with a patient. This was not the first patient interview, but it was the first one where the emotional impact of the experience of Contact Precautions was palpable.

Sally(P)

This poor lady. Almost a year in hospital over the past five. She described many of the negative experiences that are reported in the literature. Staff distancing themselves from her, poor communication, and needing to use the internet to get information about MROs as the staff did not offer it. The interview was held at her home on the outside verandah.

Laughter – Sally uses humour and tells me that this is one of her coping mechanisms

Tears – when she told me how alone she felt and scared for her family. Should she cuddle her granddaughter?

Anger - when she recalled poor clinical care.

When she was first admitted she was so unwell that she 'didn't care where I was'. Later, it was 'very intimidating. Because I was in there, I could only see people sort of passing the doorway. And the only window I had looked on to a brick wall. I was just lying there, waiting for somebody to come in and speak to me'.

There were references to the room being called a dirty room and she noticed that the trolley ladies wouldn't go in. She mentioned noticing the doctors talking about her from outside her room and tells me 'you do feel a bit of a pariah almost'. Later in the interview Sally confirmed that when the room was described as dirty, she also felt dirty 'you feel like, have I got a sign on me, you know, uh, unclean'.

She recalled being in her bed waiting for an Xray and being 'parked' in an alcove which was where they stored the rubbish. One time she was told off for using the toilet in the Xray department, because other people had to use the same toilet. She said '.... you think, what do you want me to do? I can't hang on until I go three floors up on the other side of the hospital'.

The cleaning staff were great. They had gloves on which she would expect, but once there was one that came in with face mask and yellow gown and double gloved to wash her bathroom 'And I just got so upset about that, that I walked out. I couldn't stay there. You know'. Despite feeling upset Sally didn't feel able to speak to anyone about the way she was feeling.

Sally describes a number of ways in which it seems the provision of information about MRSA and VRE was not as it ought to have been 'it was a, long time before I knew I had MRSA you know'. When she was told, it seems as though there was little explanation or invitation for her to ask questions or to speak to the infection prevention and control nurse. Her sister did a Google search and that is where Sally found most information.

Not all of Sally's experiences were poor though. Sally recalls how when she was in the Rehab hospital one of the nurses brought in some books for her to read after they had been discussing their favourite authors 'even the male nurses gave me hugs and kisses as I left'. These acts of kindness made a real difference to her.

Although not only related to her experience with Contact Precautions, and being colonised with MRSA, Sally relates how her friend was concerned about her state of mind when she came to visit. Sally tells me that she was expecting to have had a toe amputated but ended up having half of her foot removed due to necrotising fasciitis. The lack of information about the operation, and the experience of being in a 4 bedded room with 3 men, sharing a bathroom, and problems with the wound in the immediate post-operative period appear to have triggered this. 'I felt powerless... I didn't know what was happening to me half the time'. She had nine surgeries over maybe three weeks.

Being alone in a single room presented problems for Sally. She described how being on your own and having nobody to discuss it with 'you sit there and you stew on it'. She also said 'The isolation made me feel helpless. It, sort of, impressed on me what I couldn't do'. The television may have helped but she couldn't afford to pay the \$10 charge. One night she did go to the TV lounge on the ward but 'I got hounded out'. When I asked why that was, she said that she wasn't allowed to mix with others because of the MRSA. She had also been told that magazines that she had bought and read could not go to the lounge to be shared with others because of the MRSA. She was even told that the volunteers could not launder her clothing (she mentions nightwear and knickers) because of the MRSA. At the time she was in Sydney and had no family able to visit and do her laundry for her.

Sally also felt powerless and unable to say anything when she noticed mould around the bathroom floor and cracked tiles in one of the rooms she was placed in.

The impact of the PPE worn by staff was significant for Sally 'for a long time you've got no face because they've got a mask on'. Her family never complained about having to wear the PPE when visiting her, and Sally thinks that is because they didn't want to upset her. She would have liked staff to have given more explanation to her about the PPE, or even to have apologised for having to wear it.

Many times people would stand at the door to speak to her rather than come in to the room, and described meal delivery to be 'like drop and run'. Sally explains that she can understand why other people would be scared about MRSA, and uses the word panic in this context, but feels that more education about to what extent her illness could affect them might help. Sally believes that some health professionals don't have enough

understanding of MROs to even ask questions, or that some don't know how to approach a discussion about it. She felt that the older nurses were really good at talking to her, if she wanted to ask.

Sally suggests solutions in addition to improved education for staff, that might mitigate some of the negative aspects of her care that she attributed to Contact Precautions. She suggests technology such as an intercom or some other way to communicate from the isolation room to those outside. Being able to see people moving about outside the room and an outside window with a view would also be an improvement.

Sally's insights were like those of another patient, Ronald.

Ronald(P)

This interview took place in Ronald's single room on the rehabilitation ward of the hospital. Ronald has impaired vision. I asked him to tell me a bit about his time in hospital since he was told he had the MRO. His response was 'it is a bit of a pain in the backside to be honest'.

Ronald was identified as having the MRO about 20 years ago and has had numerous hospital admissions during this time 'and every time I go into a hospital "Oh, he's got such and such. Oooh"'. He tells me 'nobody wants to talk to you though. They don't want to know you' 'They don't like dressing up all the time'. The emotions and loneliness are heard in his voice. He sounds wistful and sad.

He notes that the doctors just come in but the nurses 'are all wrapped up in gowns and have gloves on... and ... they avoid you like the plague'.

We discussed the single-room and he tells me that he 'got used to being alone'. He also made a comment about looking out of a window in a Sydney hospital and staring at a brick wall, with nothing to see out of the window. The room he is in during this admission is described as a 'great room. They're not all as good as this'. It has a patio door that he can unlock, but he tells me that 'they don't like it'. I take this to mean the nursing staff do not like him to open the door and go outside. I think it likely that this is due to his impaired vision or security concerns rather than the MRO.

He describes an incident when in the middle of the night another patient had made their way into his single room and whilst he was not concerned that the other person had been put at risk by being there without wearing PPE (he was just surprised to have a stranger in his room at midnight) 'the nurses worried. They panicked'. When I asked him how that had made him feel he told me 'it made me feel small'. There were times that he felt embarrassed too.

In a Sydney hospital he was moved from his single room to an empty four-bedded room because they needed his single room for someone else. He was in the four bedded room at the end of the corridor, on his own. He used humour at this stage of the conversation; 'I had three beds there. I've got Casper, Jasper and' We laughed but it had clearly had an effect on him as he described how his sister who could only visit once a week would come to the ward and ask 'where is he?' His family have never been concerned about the MRO, and he told me that he has not made any changes at home as result of his MRO

colonisation... Then he went on to tell me how he keeps his laundry separate from other family members' which seemed a contradiction to me.

Ronald likes going to the rehab ward gym because it gets him out of his room but has noticed differences in the way that staff approach him compared to other patients, particularly the nursing staff 'They try not to touch me. You see them escort some people (to the gym) and they sort of hold their hand... not me'. The physiotherapists seem to be more relaxed. Humour comes in again when he tells me with a smile 'They will just grab your behind'. The gym allows him to have a chat with people and to get some social interaction. He has been told that he mustn't leave his room unless it is to go to the gym, and he has attributed this to the MRO.

When describing the lack of physical contact that Ronald has noticed, particularly from nurses, he indicates an acceptance of the situation 'You get used to it'. He has noticed people not coming into his room unless they are wearing a gown. He has had staff stand at the door to his room to have discussions, rather than them coming in to speak to him face to face. Ronald is vision impaired. I asked him whether he could see who he was speaking with when this happened 'I can't read a newspaper, I can't read a book. I don't know half the doctors I am talking to'. As this part of our conversation moved on, we considered whether this was due to the Contact Precautions or the frequent changes in medical staff shifts, and Ronald felt it was a bit of both but the use of PPE was a big factor.

Ronald had had experiences of some staff spending time with him, including a cleaner who would 'come into my room and we would talk for hours'. However, his experience is that he does not get the opportunity to talk to the nurses 'they gown up, do their job, and go'.

Not all the patients had difficult experiences of Contact Precautions. Sally and Ronald's experiences were different from those described by the first patient to be interviewed, Leticia.

Leticia(P)

This was my first interview. This lovely lady was about to be discharged to her nursing home when I first met her to ask if she would be interested in joining my study. She agreed and so I went to meet her in her shared room in the nursing home a week or so later. I needed to explain my research to the staff as well as sign some paperwork before I could start, and we were interrupted a few times by carers coming into the room to see the lady that Leticia shared with.

Leticia did not remember having been given any explanation for why she had been put into a single room in the hospital. She had not found the experience difficult or uncomfortable. 'I didn't mind at all'.

She had no recollection of ever having been told she had MRSA. When I asked whether she had any thoughts about why staff would have worn an apron and gloves when coming into the room she said 'Probably in case they catch something. I don't know'. On reflection I ought to have explored this statement with her in more detail by asking her why she should think that, and what sort of things would staff be worried about catching from her.

She had not noticed having any restrictions put on her movements, or that staff were less attentive to her needs than she expected. Food and drinks were brought into her room and she hadn't noticed people standing at the door to speak to her.

Overall her experience was a positive one 'I found it peaceful there'. Peace and quiet; nurses were lovely; everyone was great; food was good. For Leticia this had been a positive experience.

The next vignette relates to the interview held with Katy, an experienced nurse working on the rehabilitation ward.

Katy(N)

During this interview I shared insights from a colleague's study which was done locally some years previously in the same hospital (Wilson, 2009) alongside the feedback I was getting from my own patient participants that indicate that things have improved since then. Katy was pleased to hear this. She is really concerned that MROs have a big impact on patients and their families.

Katy does not look forward to having discussions with patients found to be colonised with an MRO. She feels it is very important that they understand the situation, but also has a sense that as soon as the conversation happens and patients know they will be treated differently, they then also feel different. She says, it's something else for them to deal with, the PPE places a physical barrier between them and staff who are there to care, and that perhaps staff body language (standing at the door, hands on hips) might make them feel they are a nuisance. The factsheets are very helpful in giving a structure to these conversations. Katy felt that patients would find it harder to trust staff enough to open up about how they are doing and how they are feeling 'if I'm gowned and gloved, like I'm looking like a hazmat person, it's very hard to break down those barriers like, literally, to get them to talk to me and trust me, do you know what I mean? That's how I feel about it'. The PPE also makes it hard for nurses to connect with their patients. It's sad that patients don't get skin contact.

Katy finds it hard to reassure them that nothing is really changing, it's just that we do this in hospital. She says 'a lot of people, and they don't really listen to what you're saying, and they don't really understand. They just know that they're different'. Their whole journey can change and that can have a big impact on patients and also on their recovery. When patients are moved from a multi-bedded room to a single room they lose the mateship and camaraderie that can be an important factor in a person's rehabilitation journey. She reflects that whilst some people appreciate having the privacy of a single room, others just don't do well in single rooms. Their mood generally drops as a result of the isolation and lack of motivating effect of having the varied social contact that being in a multi-bedded room affords. She had particularly noticed this being an issue for older male patients, knowing the value of the witty remarks, celebrations of rehabilitation achievements, and general mateship that happens amongst these long-term patients. She had also had

patients ask her about whether grandchildren were in danger as a result of the MRO colonisation, and whether or not patients can still hug their family members.

Katy was the first nurse to mention colleagues describing MRO patients or their rooms as dirty or infectious. Previous interviews with nurses had identified that patients have told staff that they feel dirty, and a number of nurses and other staff have very obvious concerns about taking infectious agents home to their families, but this was the first time I had heard about nurses calling patients or rooms dirty. She was also the first to describe breaches in patient confidentiality occurring when staff would call out cross the ward that 'we have a VRE in room 3'. Katy described her feelings about helping patients to understand their colonisation, and her own feelings of guilt and responsibility (not personally but as a representative of the hospital) for the patient having been put in the position they are in 'I do feel really awkward because I feel responsible' later on she says 'and we haven't washed our hands correctly or we haven't done the – the proper precautions, so we are responsible. How would you like that if that happened to your loved one?' When a patient told her recently that she was the first person this patient had seen cleaning an item of equipment Katy told me she was embarrassed and ashamed of her ward because this meant that other staff were not doing the right thing and were putting patients at risk as a result. The reputation of the ward, and the hospital, could be damaged.

We discuss the value of education that brings real stories to the awareness of staff so that it triggers an emotion and makes it more real. There is a resentment sometimes amongst staff needing to wear the PPE due to the disruption to patient care and workflows. There is also confusion at times, and a need to simplify the way that we do things.

Katy describes the light globe moment in our conversation when I asked her whether patients have a choice about whether we implement Contact Precautions, or whether they are asked for their consent to having swabs collected. She tells me 'That's an interesting question because it's – it's never been – I, kind of, never thought about that before. We just do it, don't we? It's true, isn't it? That's a very good point because they have a right of refusal for any treatment or service or whatever. That's actually a – that's actually a light globe moment for me because I didn't – never thought of it like that'.

A lot of our discussion centred around negative aspects of Contact Precautions so I asked Katy to tell me what the advantages of Contact precautions might be. She couldn't see any advantage if Standard Precautions were being properly adhered to.

The next example is the vignette relating to the interview held with Sara(A). This was the last of the four allied health participant interviews, and the interview was held in a quiet office in the same corridor as her work base. Another of the allied health participants, Emily(A), was the first participant to mention her practice of keeping her work clothes separate from those of other family members and taking her shoes off outside the house. As I wanted to explore the degree to which health professionals felt they needed to protect their family members from MRO infection,

this became one of the questions that I brought into subsequent interviews as part of the process of concurrent analysis as the data collection continued.

Sara(A)

Sara is an occupational therapist with experience of working in hospital settings. Contact Precautions are there to protect staff as well as patients to prevent spread of infections to other people. Patients have asked if they could be moved in with other patients, have said they are lonely. Social interaction is important and being with others can be encouraging to them. Has noticed patients being fearful of making other people ill and having an understanding that them being managed under Contact Precautions is safer for other people. Has heard patients ask whether they will put their grandkids at risk after they go home. Talks of Contact Precautions being associated with loneliness in patients.

Identifies non-verbal communication can be impaired by the use of PPE. Patients with special needs such as hearing, or vision impairment need non-verbal communication and Contact Precautions can limit the ability of health professionals to respond to this. Contact Precautions compromise care by impacting on communication and rapport-building. Patients in Contact Precautions miss out on the motivation from other patients.

Sara doesn't feel confident about answering patients' questions. She has also sometimes felt anxious about not wanting to do the wrong thing or having a question 'Is this a silly question if I ask?' Not worried about her own safety when caring for these patients though. Trusts the policy to be there to protect everyone. Frustration that the MRO signage can be out of date and inaccurate when patients move beds. Knows to use the electronic medical record (eMR) to check MRO alerts.

Values the teamwork and collaboration that there is between the various allied health teams, when communicating MRO requirements, as well as other aspects of patient care to ensure continuity. Describes a good flow of information and communication with nursing teams but states that interdisciplinary communication between doctors and allied health is poor. She has seen conflict happening between staff groups when one group doesn't use the PPE. Has seen that this can lead to people deciding not to use the PPE due to peer pressure.

Contact Precautions are easy to do if the equipment and the signage is consistently available. Also, if there is appropriate role modelling and the culture of the team supports the policy being followed.

PPE is useful as it reduces her risk and protects staff as well as patients. Can be hot and sweaty working in the gowns especially and opening packets or finding the end of tape when wearing gloves is tricky. Juggling the PPE and cleaning equipment including ChlorClean availability is a challenge, especially when the patient is in a multi-bedded room.

Does not treat her clothes or shoes particularly differently from non-work attire.

The final example presented here, is the vignette relating to the interview held with Sasha, a doctor working in the Intensive Care Unit of a large hospital.

Sasha(D)

Sasha is a doctor with a wide range of experience including working in ICU and in infectious diseases. She was keen to take part in the research telling me she thought it was an interesting question. She had not considered the ethical issues associated with Contact Precautions before.

Sasha explained the purpose of Contact Precautions as being to prevent transmission of organisms from patients to staff and back to patients again. To reduce the spread of MROs in an era of increasing antibiotic resistance globally, and difficulties in treating infections caused by these MROs. Despite this understanding she also stated that she had never seen evidence that Contact Precautions work. Sasha reflected though that Contact Precautions may not always be done very well, particularly the order of putting on and taking off PPE. Putting on the PPE in a hurry when a patient is deteriorating creates difficulties.

In her career she had noticed difference in the way that paediatric doctors responded to MRO colonisation compared to adult physicians. Reflecting that the paediatric trainees seemed less knowledgeable about MROs, perhaps as they had seen them less often.

Sasha brought some great insights into the management of a child with an MRO called Carbapenemase Producing Enterobacterales (CPE). She described how there is a greater concern when the MRO is an emerging one or a less common one. She had experience of Contact Precautions in place for CPE having the effect of reducing the collegiality and reducing options for peer support for the child's parents. They were not allowed to go to the parents' tearoom or to speak to the other parents or go to other children's bed-spaces. This led to them having no down time as they couldn't share the facilities like other children's parents did. She did also say that although she noticed this, she thought the child's parents were too worried about their child to notice. Their child being so sick was their bigger concern. 'I don't know that they particularly missed the lack of other people. But it certainly, you know, there would have been impact on even their, you know, their ability to actually get away from the bay and have some time outand have a cup of tea, um, because whenever they were in the bay they were so fixated on – on the boy and the numbers on the monitor and all of these things'.

On the question of consent, Sasha reports that she always explains the reasons for bed moves to patients but states that patients don't get a choice and they don't challenge it either. If patients voice a preference it is likely to be relating to TV or window access. She has had patients ask questions about the safety of grandchildren visiting when MROs are found. She says that MRO patients are discriminated against. Relates that 'clean patients' go first and anyone with an MRO would go at the end of the theatre list.

She reflects very honestly about policies sometimes impacting on clinical decision-making and says they can be useful as long as they are up to date. She refers to the dangers of 'recipe medicine' when patients are pigeon-holed to fit the policy rather than the doctor 'thinking about the actual realities of the pathophysiology in front of you'. Do policies stop people from thinking?

She does not treat MRO patients differently and is not worried about herself but has identified a level of anxiety about MROs in her colleagues. Paradoxically she also reflected on witnessing staff not using the PPE due to the gown being too hot and uncomfortable to work in, until the infection control team found out and started to monitor Contact

Precaution compliance strongly. Infection Control experts are definitely in a policing role in this scenario.

Sasha doesn't treat her work clothes any differently from others, but is aware that other people may do 'I know ICU nurses who go home, take all of their work clothes and their shoes and socks off, like, in the – in the, um, garage or in the laundry straight away and will not take them into the house, wash them separately than any other clothes in the house, won't store them in their cupboard, all of that, like, quite extreme. I don't, I just go home, chuck my clothes in the washing basket'.

These selected vignettes have demonstrated the broad and diverse range of topics and concerns that were revealed during the interviews. Whilst Leticia(P) had felt safe and peaceful during her hospital stay, Sally(P) and Ronald(P) described negative emotions and had noticed they were treated differently from other patients. Small acts of kindness were appreciated and were noticeably rare. The health professionals reflected on the impact of Contact Precautions on professional relationships and the practicalities of caring for patients while wearing PPE. Katy(N) described her 'light globe moment' when realising how little attention is given to providing patients with opportunities for informed consent regarding Contact Precautions, and words such as 'clean' and 'dirty' are used in relation to patients and their hospital accommodation.

5.4 Chapter summary

The purpose of this chapter has been to introduce the study participants and to provide a brief description of the interview transcripts to set the scene and to connect the study participants to the research question by illustrating the degree to which many aspects of Contact Precautions impacted on them. Sometimes this was on a deeply personal and emotional level, and in other cases, in a more thoughtful, contemplative, and analytical way. It is hoped that these vignettes have been successful in bringing the participants' experiences to life for readers of this thesis.

As previously described, writing the vignettes was an outcome of my continuing connection and immersion in the data. Whilst reviewing the interview recordings and written transcripts alongside the research journal, an understanding of what the data was saying was developed. As further inductive analytical interpretation of participants' experiences continued, the mapping of developing themes to the theoretical scaffold was facilitated. The explore functions in NVivo also enabled

pertinent excerpts from the transcripts to be retrieved and used to illustrate the findings.

In Chapter 6 these findings, organised and connected as four main themes, are presented, and discussed in the context of an inductive analytical interpretation of participants' experiences and insights with the theoretical scaffold. This next chapter serves to demonstrate several ways in which Contact Precautions impact in an ethically relevant way on health professionals and their patients. It also reveals some considerable challenges for patients and for health professionals as they attempt to effectively negotiate and manage those conflicts.

Chapter 6. Presentation and discussion of findings

6.1 Introduction

To answer the research question: 'Are Contact Precautions ethically justifiable in contemporary hospital care?', it is necessary to identify and assess the ethical impacts (positive and negative) on all those affected (Beauchamp & Childress, 2013).

A review of the published literature was presented in Chapter 2, including a published paper that presented the case for Contact Precautions to be examined under a bioethical lens (Harris et al., 2019). The paper does this by discussing the evidence base for the potential benefits of Contact Precautions including their efficacy in reducing MRO acquisition in hospitals, as well as the potential harms that have been attributed to Contact Precautions. It also explores the precautionary principle and doctrine of double effect as they relate to Contact Precautions. This paper builds on several other commentators' concerns that the use of Contact Precautions might conflict with established ethical values (Bryan et al., 2007; Chavigny & Helm, 1982; Herwaldt, 1996; Millar, 2009), and provides the foundation for the research described in this thesis.

The purpose of this chapter is to present and to discuss the findings of the qualitative study conducted for this thesis, that used interpretive description as its methodology (Thorne, 2016). The findings are presented as themes and sub-themes that are discussed within a bioethical framework (Beauchamp & Childress, 2013; Ells et al., 2011; Pellegrino, 1994) with a view to exploring the ethical implications. Thus, meeting the first and second research objectives which are to understand the impact of Contact Precautions on patients and on health professionals, and to discuss these findings within a bioethical framework with a view to exploring the ethical implications.

Theoretical scaffolding was founded on the principles of biomedical ethics (Beauchamp & Childress, 2013), and the Theory of Planned Behaviour (Ajzen, 1991) as they apply to the clinical practice of hospital infection prevention and control, within the context of the publicly funded health system in NSW Australia.

The value of using the chosen bioethical framework is that the four bioethical principles provide and establish basic building blocks for a common morality and use language that is familiar in healthcare vernacular. These attributes make them

particularly pertinent to healthcare contexts (Beauchamp & Childress, 2013). In this chapter, the four principles provide signposts that enable intuitive reflective equilibrium (Quante & Vieth, 2002) on empirical findings such as those identified by this research. They are not used to deductively find the answer to the research question.

Using a bioethical framework to scaffold this interpretive description study has enabled a practical focus on situations and circumstances that arise. The study design has supported critical reflection and an inductive approach to the consideration of ethical dilemmas, a hallmark of contemporary ethical theory (Beauchamp & Childress, 2013), and a strength of empirical bioethical research (Strong et al., 2010).

The previous chapter introduced the study participants, giving demographic details and depictions of their personal involvement with Contact Precautions. Characteristics such as their gender and age, and relevant professional or personal experiences were shared. Selected vignettes from each of the participant groups were presented to bring these people into the heart of the thesis and to enable their voices to be heard.

A considerable amount of data was captured during the interviews and the associated journal entries and reflections. This data has been organised and presented under broad themes and sub-themes which have been formulated through a combination of description, analysis, and interpretation (Liamputtong & Serry, 2013; Thorne, 2016) and through recurrent and interpretive reference to the theoretical scaffolds that underpin this study (Ajzen, 1991; Australian Commission on Safety and Quality in Healthcare, 2020; Beauchamp & Childress, 2013; National Health and Medicine Research Council, 2019). In presenting the research findings, illustrative exemplar quotes from the interview transcripts are included throughout the chapter, where appropriate to provide clarity to the theme or sub-theme.

The study findings are introduced as four main themes, and their associated sub-themes, that present the ethically relevant aspects of Contact Precautions, as experienced by the study participants. These themes are then connected to bioethical principles for further discussion and ethical reflection. In doing so the chapter answers the first two subsidiary research questions **Q1**. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions? and **Q2**. How do the ethically relevant features of

patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

This chapter also develops consideration of the ethically significant study findings, making comparisons with the findings of other relevant studies that have been published in the infection prevention and control literature as well as within the wider context of applied biomedical ethics. This application of empirical and theoretical knowledge in clinically relevant contexts, to the findings of this study promotes consideration of the ethical standing of Contact Precautions. These discussions balance the identified conflicts and tensions and consider the benefits and costs of Contact Precautions as experienced by participants in this study, and as described in the empirical evidence base. In doing so, the chapter answers **Q3**. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

This chapter describes and discusses the several bioethical conflicts and tensions that have been revealed by this study. Balancing those conflicts and tensions through a reflective approach provides the foundation upon which recommendations for more ethically defensible infection prevention and control policy and practice, and suggestions that would strengthen the infection prevention and control evidence base are made. The reason for using interpretive description research methodology was to ensure that the findings of this research could be used to inform and improve hospital infection prevention and control policies and practices. Accordingly, Chapter 7 summarises the identified ethical challenges associated with Contact Precautions and makes recommendations for improved policy and practice. Therefore, chapters 6 and 7 combine to provide the answer to the fourth subsidiary research question; **Q4**. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

As recognised by Thorne (2016), research findings require further interpretation and discussion before they can be developed into an answer to the research question, and into recommendations for improved clinical practice. Accordingly, the purpose of this chapter is to interpretively discuss each of the main themes, in the context of the theoretical scaffold, and with reference to the current relevant evidence base, as revealed by the literature review. In doing so this chapter articulates to the first two study objectives which are to understand the impact of Contact Precautions on

patients and on health professionals, and to discuss these findings within a bioethical framework with a view to exploring the ethical implications.

The chapter provides the basis for the concluding chapter in which the third study objective has been met through the development of several recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO.

6.2 Themes and bioethical principles

The interview transcripts reveal a wide variety of experience demonstrated by participants' descriptions of the circumstances that happened to them and the things that they noticed about Contact Precautions. Some participants provided their observations in quite matter of fact and objective terms. Others brought in the emotional impact that Contact Precautions have had on them and added their own reflective and analytical perspective. Some participants suggested changes that might improve the hospital experience for people colonised with an MRO.

There is a high degree of homogeneity in the findings across and within the different groups; many participants provide very similar insights into the experience of Contact Precautions despite their seemingly different perspectives as either a hospital patient or a health professional.

Four themes have been identified and are listed below, alongside a summary description for each.

- **Powerlessness moving to acceptance** – participants describe feeling constrained by infection prevention and control policy framework that requires Contact Precautions to be used. They also feel unable to affect change. However, over time they eventually accept the situation and their position within it.
- **You feel a bit of a pariah** - people in Contact Precautions are considered outcasts and feel physically and emotionally isolated.
- **Others need protection... but I need looking after too** - the sometimes-conflicting balance that participants feel between the need to protect the wider community and the need for the individual's needs to be met.
- **Doing Contact Precautions is not easy** - many factors conspire to present barriers to the effective application of Contact Precautions within infection prevention and control policy.

These themes and their contributory sub-themes are illustrated in Table 7 (page 122) which also demonstrates how the sub-themes relate to specific participant groups.

For example, members of both groups felt personally responsible for protecting their families against MROs, and people from both groups described how Contact Precautions reduced their capacity to make autonomous decisions about their actions. However, some of the identified sub-themes relate to only one of the participant groups. These examples include the stigma that was acutely felt by some patient participants, and the physical discomfort associated with Contact Precautions, which was described by health professionals but not by patients.

The themes, and associated sub-themes are presented in detail in the following section of this chapter which uses illustrative quotes from the participants where appropriate.

Participants have described several aspects of their experience of Contact Precautions that are ethically relevant. Each of the identified themes is aligned in a significant way to one of the four principles of bioethics: respect for autonomy, justice, beneficence, and non-maleficence. Importantly, each of the themes can be linked, albeit to a lesser extent, to the bioethical principle of non-maleficence. This is illustrated in Table 8 (page 123) and these relationships will be described further throughout the chapter, to explain how the study findings map to bioethical principles, thus answering subsidiary question 2.

Theme	Description	Sub-theme	Patient	Health professional
Powerlessness moving to acceptance	Participants are constrained and feel unable to effect change – over time they eventually accept the situation	Level of control and capacity for autonomous choice	✓	✓
		They didn't tell me – I didn't know	✓	✓
		Hierarchy		✓
You feel a bit of a pariah	People in Contact Precautions are considered outcasts and feel physically and emotionally isolated	They don't want to come in	✓	✓
		They make me feel dirty	✓	✓
Others need protection... but I need looking after too	The sometimes-conflicting balance that participants feel between the need to protect the wider community and the need for the individual's needs to be met	The protection of others	✓	✓
		Contact Precautions compromise care	✓	✓
Doing Contact Precautions is not easy	Many factors conspire to present barriers to the effective application of infection prevention and control policy.	Variation in policy		✓
		Wasted time and wasted resources	✓	✓
		Single rooms are good ... but not for everybody all the time	✓	✓
		Contact Precautions are physically and emotionally uncomfortable	✓	✓
		Some do it better than others	✓	✓
		Enablers and barriers		✓

Table 7. Themes and sub-themes

Theme	Description	Primary bioethical principle	Secondary bioethical principles
Powerlessness moving to acceptance	Participants are constrained and feel unable to effect change. Over time they eventually accept the situation	Respect for autonomy	Non-maleficence
You feel a bit of a pariah	People in Contact Precautions are considered outcasts and feel physically and emotionally isolated	Justice	Non-maleficence
Others need protection... but I need looking after too	The sometimes-conflicting balance that participants feel between the need to protect the wider community and the need for the individual's needs to be met	Beneficence	Respect for autonomy Justice Non-maleficence
Doing Contact Precautions is not easy	Many factors conspire to present barriers to the effective application of infection prevention and control policy.	Non-maleficence	Respect for autonomy

Table 8. Relationship of findings to principles of bioethics (Beauchamp & Childress, 2013)

Conflicts and tensions were felt by members of both participant groups, and these were revealed as being relevant to all four bioethical principles. This study has identified several challenges in managing those tensions.

Whilst the impact of Contact Precautions on patients has been well described, as demonstrated in Chapter 2 and elsewhere (Harris et al., 2019), an unanticipated finding of this study is the degree to which ethical challenges relating to Contact Precautions apply particularly to health professionals. Although they trust and believe in Contact Precautions as beneficent, that good is in a consequential tension with the principle of non-maleficence if they experience internal conflict and moral distress when noticing the impact of Contact Precautions on patients, or when experiencing personal physical or emotional discomfort whilst working under those precautions. Health professionals also describe how Contact Precautions can promote interpersonal and interprofessional conflict in relation to their peers'

attitudes and clinical practice relating to Contact Precautions. Further discussion of each theme, and its relationship to bioethical principles is now provided.

The first theme to be discussed is one entitled 'Powerlessness moving to acceptance'. This theme is discussed in two parts. The theme of powerlessness describes the various ways in which the study participants identify a reduction in their ability for effective and unhindered autonomous decision-making or ability due to the constraints imposed by Contact Precautions. The reactions and responses of participants from both groups demonstrate how feelings of powerlessness changed over time to an acceptance of the situation and of their place within it.

6.2.1 Respect for autonomy: Powerlessness, then acceptance

The theme of 'powerlessness moving to acceptance' is one where participants are constrained and feel unable to affect change, however, over time they come to accept the situation and their place within it. As shown in Table 8 above, this theme relates strongly to the principle of respect for autonomy, and to a lesser extent, to the principle of non-maleficence.

Powerlessness is defined as a lack of participation and autonomy. Participation concerns the degree to which the individual has input into or influence over strategic, administrative, and operating decisions. Autonomy concerns the freedom of the individual to be his or her own master within the prescribed task domain. (Ashforth, 1989)

Autonomy has been described as the right of a rational individual to make an informed, uncoerced decision (Hostiuc et al., 2018; Santos et al., 2008; Stirrat & Gill, 2005). For a person to act autonomously or to make an autonomous choice, they need to have liberty and agency, meaning freedom to act and independence from controlling influences. The person should also have received and understood information so that they understand what they are doing and how it will affect what they value. People making autonomous actions must have the emotional, mental and physical capacity to decide and act on their chosen intentions and must not be prevented from acting or be compelled to act in a particular way or allow something to be done to them (Beauchamp & Childress, 2013). In healthcare, demonstration that a person's autonomy has been respected requires evidence of an attempt to instil relevant understanding. There must have been no coercion or manipulation, and the person's healthcare rights (Australian Commission on Safety and Quality in Healthcare, 2020) must also have been respected (Beauchamp & Childress, 2013).

Healthcare settings present challenges with respect to this principle, as most aspects of healthcare impose restrictions on otherwise autonomous and empowered individuals (Alfandre et al., 2020; Jones, 2001).

Infection prevention and control policy and practice has been revealed in this study as imposing feelings of powerlessness on participants. The actual word 'powerless' was, in fact, only used by one participant, Sally(P), who said 'I felt powerless I didn't know what was happening to me half the time'. However, there were several examples of participants experiencing Contact Precautions feeling powerless to act or to change to their situation.

The infection prevention and control policy framework was discussed by 15 of the 24 health professional participants. For most of these staff the policy provided security as a set of evidence-based rules that had been written by experts whose role within the organisation is to protect the best interests of both patients and staff.

However, there is also a demonstrated concern amongst health professionals that the infection prevention and control policy framework imposes restrictions on their personal autonomy as a health professional (Gilbert & Kerridge, 2019; Pellegrino, 1994; Stirrat & Gill, 2005).

For some, the existence of the policy was the only explanation provided when telling patients and their families about some of the policy requirements, for example the need for them to be accommodated in a single room. Paradoxically, despite the policy requirement to provide clear and timely information about Contact Precautions to patients, this frequently does not happen, even when the information ought to have been provided as a component of procedural consent prior to the collection of samples for laboratory investigation. This leads to patients feeling that things are 'done to them' rather than having been involved in the decision-making regarding their care. These examples of people feeling powerless to act or to make changes to their situation justifies nomination as one of the main findings in this study.

The sub-themes within this theme of powerlessness relate to participants' ability to, and capacity for making autonomous choices; the importance of effective communication to all participant groups; and for the health professional participants, the influence of inter-professional and other well-established hierarchical relationships within the health care setting. All these sub-themes apply, in slightly different ways, to each of the participant groups.

The first of these sub-themes is the ability to, and the capacity for, autonomous decision-making.

6.2.1.1 Level of control and capacity for making autonomous choices

Both staff and patient participants described ways in which their level of control and capacity for making autonomous choices were affected by the application of Contact Precautions as part of the organisation's infection prevention and control policy framework.

Within the group of patient participants, the policies themselves were not referred to, but the impact of the restrictions imposed on patients by those policies was obvious and predictable. For health professionals, the structure and function of the organisation's policy framework, and the level of control that clinicians have in the development of the policies played a prominent role in discussions. The perspectives of both patients and health professionals in relation to the infection prevention and control policy framework are now described.

Staff – the policy paradox

Policies were referred to in their interviews by 15 of the 24 health professional participants comprising 9 of the 13 nurses, 5 of the 7 doctors, and 1 of the 4 allied health professionals.

Participants recognised the difficulties for the organisation and health professionals relating to the sheer number of policies and the need to make them accessible and useful in clinical practice. However, the value of having a policy framework to refer to was acknowledged, for example in a comment by Connie(N) who stated 'it's all very clear what's the policy. It is written in black and white, so I think it's... everyone understands why we have to do it'.

Most health professionals recognised policies as helpful in informing practice and in providing a clear framework designed to protect both staff and patients. Several staff recognised significant challenges associated with the development of an effective evidence-based policy framework.

Some participants cited the large number of policies as an imposition from on high rather than a support:

I get the sense that the rest of the [health care worker] population just tolerate it as another imposition from above that – that makes their already difficult working lives, you know, that much more challenging. Unfortunately,

that's truly the perception that I get out there... I'd love to see a bar chart or something with the number of policies that exist in this hospital and the number of policies that exist, you know, from New South Wales Health and I suspect it's, kind of, increasing exponentially. So every new policy is a new, kind of, imposition on someone trying to do their job and, I think, everyone finds that, kind of, difficult to manage that workload...

... I just think every, everything that is, um, handed down via a policy is unfortunately another imposition even if it's, you know, appropriate and comes from a good place, I think, that's – that's really difficult. Simon(D).

The findings demonstrate a lack of connectedness with the development and implementation of policies, from the practising clinicians who participated in this research. This lack of connectedness was illustrated in the health professionals' references to policies being developed by experts, with little opportunity for clinical staff to meaningfully influence the content.

Despite feeling disconnected with the policy development process and overwhelmed by the numbers of policies governing clinical practice, these health professionals describe a deference to the expertise of policy authors in making decisions on behalf of everyone else. Vincent(D) reflected, 'I don't know about the evidence, but I'm sure it's something that people have looked into. So, yeah, I'm trusting them'.

When asked whether Contact Precautions work in protecting patients from MRO transmission in hospitals, five of the health professional participants stated that they believed them to be effective. However, two of the doctors interviewed, Sasha(D) and Vincent(D), were not certain that Contact Precautions were an effective means of preventing the transmission of MROs, and Winton(D) was sceptical about their value:

I am sceptical about what they have to offer. I don't believe they're entirely worthless um, but I certainly do believe in a scenario where you have excellent levels of hand hygiene and a recognition of the special cases that do require over and above precautions, that the contact precautions have little to offer. Winton(D).

These participants hold doubts about the value of Contact Precautions but are employed under a governance framework that requires policy compliance. The perception that policies must be followed unquestioningly and without fail, was

apparent in several transcripts alongside a belief that there was little room for flexibility in their application. According to Bertram(D) 'Here are the rules that must not be broken'.

The potential conflict that this dynamic presents was illustrated by one participant's concerns that policy compliance may restrict clinical decision-making processes:

Ah, I think they are good for many things in terms of standardising care and assisting in decision making and certainly if they're updated regularly with whatever the best evidence is I think they can be really helpful..... I think outside of those protocolled policies can become too much recipe medicine and dangerous in a way that people are pigeon-holed into something that often they don't fit into. I think sometimes people rely too heavily on them without thinking much about it. Sasha(D).

As discussed in Chapter 2, Contact Precautions have been associated with increased incidences of adverse events including psychological harm and medication errors (Karki et al., 2013; Purssell et al., 2020). Juliet(N) was one of the participants who was aware of these risks. Paradoxically she stated that even though she was concerned that medication errors may be more likely because of a policy of not allowing medication charts to be taken into the single rooms of patients in Contact Precautions, she would not challenge that policy:

There's potential for mistakes there because if a doctor just writes a chart off of what they used to be on and it's different to what they're on now and you're first giving them their medications from ED there's a high potential for mistakes. Juliet(N).

Similarly, Simon(D) related that he had not come across a situation where the policy should be over-ridden due to the potential detrimental impacts on the patient.

One benefit of policy frameworks is their ability to standardise practice and support evidence-based decision-making, as noted by Sasha(D). However, participants in this study described feeling frustrated, confused, and uncertain, when they had encountered a lack of standardisation of infection prevention and control policies between different health care settings. According to Kit(D):

Whether it's MRSA, VRE and those things, the guidelines do change. They have changed over the years since I've been working and so, it can be a

little bit confusing about knowing exactly when they need to be isolated or not... if I'm honest. Kit(D).

Four health professionals spoke about the differences they had noticed in infection prevention and control policies within the various places they had worked. Evolution of policy requirements over time were noted by two of the health professionals. These differences are provided in more detail later in this chapter under the theme of 'Doing Contact Precautions is not easy'.

Despite health professionals stating that they trust infection prevention and control policies, and would not challenge them, there are several instances of observed practice and self-reported actions, where policy requirements are not adhered to. This phenomenon is described and discussed under the sub-theme of 'Some do it better than others', but also warrants discussion here.

This study reveals several ways in which health professionals' clinical and personal autonomy might be overtly or covertly imposed upon during the application of Contact Precautions. Although health professional participants reported their acceptance of Contact Precautions as a legitimate means to prevent the transmission of MROs within the study hospitals, compliance with those policies has paradoxically been identified, in their reflection of their colleagues' practices, to be less than optimal in some situations. It is therefore likely that some health professionals experience internal conflict in relation to the application of Contact Precautions. They state their belief in the purpose and efficacy of Contact Precautions, but do not rigorously obey the rules, making (in their view) justifiable modifications to their practice. The reasons for this are likely varied, and the study did not explore the processes that were used to justify policy breaches, or the rationale for these actions. However, the study findings indicate the possibility that the hierarchical culture of the healthcare environment may be a contributory factor, and this is discussed later in the chapter.

This study has found that the policy requirement for health professionals to ensure that patients are fully informed are not followed. There are two prominent examples of this policy requirement being breached. The first example relates to the requirement for patients to provide informed consent prior to clinical procedures, and the second relates to the requirement for patients to be fully informed and involved in decisions that are made about the application of Contact Precautions.

Health professionals reported that whilst they did explain that clinical specimens were to be collected, the reason for the swab collection would likely be explained as a requirement of the infection prevention and control policy, or other related organisational stipulation. This explanation was unlikely to include any caution or advice about the possible outcomes of the finding of an MRO. Katy(N) reflected, 'I don't believe anyone has the discussion much with them about what potentially could arise from that'.

Many health professionals agreed that the possible outcome of the application of Contact Precautions is not discussed as part of specimen collection consent discussions. When asked if patients were informed of the possibility that a wound swab might reveal an MRO, and the subsequent need for them to be managed under Contact Precautions, Toby(N) responded, 'Oh, no. I don't say anything like that, that just, like, panics them'.

It seems that staff felt a need to protect their patients from a possibility that may not happen, at a time when so many other, more serious problems were being encountered. Staff do not want to add extra distress to an already difficult situation for the patient and their family.

Just as the collection of specimens for lab examination may not always be undertaken with the patient's full and informed consent, patients are not actively involved in the decision to apply Contact Precautions on the receipt of a laboratory finding of an MRO. Many health professionals believed patients should not be given any choice about the application of Contact Precautions. Dan(N) stated 'Ah, no they shouldn't have a choice'.

During Winton's(D) interview the commonalities that were being seen in the interviews to that time, were summarised and presented to him by the interviewer. This summation suggested that patients are not provided with any options about whether Contact Precautions are implemented.

...we don't give patients a choice do we? We say "you've got MRSA, we have to do this, there's a policy that says it"... and we don't give them a choice... JH(Interviewer)

to which Winton(D) agreed. In addition to the finding that patients might be given quite a rudimentary explanation for the need for Contact Precautions to be implemented, it is also found that patients are given no option to refuse them. Feedback from health professional participants indicates that the way infection

prevention and control policies requiring Contact Precautions are applied removes the level of choice a patient can have about their care once they are identified as colonised with an MRO.

The observations of health professionals were supported by the experiences described by the patient participants. They described instances of things happening to them rather than in partnership with them.

Patients – consent, control, and choice

Patients interviewed in this study confirm they are not given a choice about having laboratory specimens collected, nor are they given information about what may happen if an MRO were to be identified. Jenny was interviewed with her husband Bobby(P) who had been identified as colonised with MRSA on his admission to the intensive care unit (ICU) in a very serious condition. She remembered that staff had collected the clinical specimens to be sent to the microbiology laboratory, on Bobby's admission to the unit. When asked if the staff had explained what they were doing and why, Jenny and Bobby(P) both replied in the negative, saying, 'They just said we've got to do a – take a couple of swabs. And the nasal one... was one and the rear end was another'.

Patient participants were asked whether they recalled being advised about the possibility of an MRO being identified, and the outcome being moved to a single room and Contact Precautions being put in place. The infection prevention and control policy requires this discussion to take place, and there are information sheets available for staff to use while having those conversations, however, none of the patient participants recalled having been provided with this information prior to the swab collection. This was highlighted by Amelia(P) who stated, 'No not really they just tested it, and then, yeah, went from there'.

Once the laboratory results were reported and an MRO identified, the infection prevention and control policy requires that the patient be informed, and the need for Contact Precautions to be put in place explained. As the interviews progressed it became clear that these conversations may not be happening. Subsequently, the question was asked specifically, 'So somebody's been in a four bedded bay, you've done the wound swab, it comes back MRSA or VRE or something, and they need Contact Precautions; how does that conversation go with the patient?' Responses to this question identified that many staff have not had these discussions with

patients. Toby(N) recalled, 'Uh, to be honest, I've never had that conversation with a patient about that'.

This study has shown that patients are not given a choice about whether Contact Precautions are implemented and whilst some health professionals agreed with this position, for others, such as Katy(N) this was a 'light globe moment' because for so many other aspects of care, patient consent and informed choice is paramount:

That's an interesting question because it's – it's never been – I, kind of, never thought about that before. We just do it, don't we? It's true, isn't it? That's a very good point because they have a right of refusal for any treatment or service or whatever. That's actually a – that's actually a light globe moment for me because I didn't – never thought of it like that. Katy(N).

This study has identified a novel recognition of two important and significant ways in which Contact Precautions can precipitate conflict with the principle of respect for autonomy. The first of these relates to patients and their experience of that key healthcare exemplar of respect for autonomy - informed consent. The second relates to the identification of an unanticipated power that Contact Precautions have in influencing health professionals' agency and intention to act - their personal autonomy as a health professional, which ought to be considered of equal importance as patient autonomy (Pellegrino, 1994).

It is expected that patients should be provided with information about the risks and benefits of healthcare procedures including diagnostic tests, and be active partners in the decisions that are made about their care (Australian Commission on Safety and Quality in Healthcare, 2020). However, several practical barriers arise within the contemporary health care environment. These include entrenched institutional pathways, a lack of commitment to making informed consent a meaningful entity rather than a meaningless bureaucratic ritual, limited time, and poor access to adequate education and knowledge-building resources (Milligan & Jones, 2016).

This research demonstrates that fundamental concepts of respect for autonomy and informed consent, are frequently not observed for diagnostic specimen collection and laboratory examination, in clinical contexts. Patients are not provided with adequate information on which to provide their informed consent prior to specimen collection. This concurs with other researchers have who reported that patients consider they should receive information before collection of a nasal swab (Hill et

al., 2013) and that communication about MRSA screening and possible implications should be improved (Currie et al., 2009; Rump et al., 2017).

Clinical specimens such as urine samples, wound swabs or blood cultures are collected from the patient when there is a concern that an infection requiring therapeutic treatment might be present, and the laboratory result helps to inform the most effective antibiotic treatment regimen. These clinical specimens are collected to inform and support optimal treatment for that individual patient, and therefore reflect the principle of beneficence. However, informing individual patient management is not the only indication for the collection of clinical specimens. A NSW Health policy requires all patients admitted to an intensive care unit (ICU) to be screened for MROs through the collection of a swab of the nose, throat, and perianal region for MRSA, and a rectal swab for VRE (NSW Health, 2020b). The purpose of this practice is twofold; to monitor the rates of acquisition of MROs in the ICU setting, and to ensure that these very vulnerable patients receive the most optimal antibiotics if they start to develop signs of infection. In this latter context, the specimen collection supports the principle of beneficence, as its purpose is to facilitate the prompt administration of empiric antimicrobial agents should an individual patient develop signs of infection.

However, these swabs collectively provide information about whether MRO transmission is occurring within the unit. In this context the screening swabs are collected as an active surveillance measure. Patients who are found to be colonised with an MRO will most likely not require antibiotic treatment at that time, so the results have no bearing on their individual clinical management. These screening swabs may also be collected as part of outbreak investigation or management protocols, as determined necessary by organisational governance policy requirements. In these latter two contexts they are done in support of the principle of non-maleficence (protecting others from possible harm) and public health ethics, as their stated purpose is to facilitate an understanding of pathogen transmission within the ICU.

MRO screening practices vary considerably (Kohlenberg et al., 2011; Pogorzelska et al., 2012), however in most hospitals patients screened and found to be colonised with an MRO will be managed under Contact Precautions (Calfee et al., 2014; Isenman et al., 2016; National Health and Medicine Research Council, 2019). In NSW, there is no statutory responsibility for MROs to be notified to public health units (NSW Government, 2010).

The NSW Health Consent to Medical and Healthcare Treatment Manual, requires that patients be provided with information so that before any procedure is started, they have a genuine understanding of the reason for the procedure and the expected outcomes as well as any material risks, benefits, and alternative options. A risk is defined as material 'if it is considered that a reasonable person in the patient's position, if warned of the risk, would attach significance to it' (NSW Health, 2020a, p. 16). The Australian Healthcare Charter also requires informed consent to be sought before undertaking any procedure on a patient. The Charter states that for patients to be able to provide their informed consent they must have received clear information about their condition, and the possible benefits and risks of the different tests and treatments (Australian Commission on Safety and Quality in Healthcare, 2020). For simple procedures such as specimen collection, written consent is not required, but the expectation that a full explanation of all possible outcomes should be provided remains clear, with no exceptions provided for diagnostic testing (Australian Commission on Safety and Quality in Healthcare, 2020; NSW Health, 2020a; Selgelid, 2016).

In the context of public health it is recognised that surveillance is often undertaken outside of expected standards for informed consent even when individual-identifiable data is used (Callahan & Jennings, 2002). A recent report using community juries to explore communicable disease surveillance, concluded patients should be offered an opportunity for their laboratory results to be excluded from surveillance datasets (Degeling et al., 2020), however, contemporary NSW Health surveillance systems do not provide a mechanism for this (NSW Health, 2020b). Ethical challenges arise when microbiological information is shared outside the patient's immediate care team (Braunack-Mayer & Mulligan, 2003) for surveillance purposes, or when outbreak management reports are published using surveillance data (Santos et al., 2008). Recently, concerns have been raised about new technologies such as whole genome sequencing or 'Big Data analytics' being used in communicable disease surveillance, without the consent of the patients from whom clinical specimens were collected (Degeling et al., 2020, p. 2). In these examples competing ethical factors are the potential for an individuals' microbiological information to be used to improve the public health, and the obligation on health services to maintain patient confidentiality (Lee et al., 2012; Vassal et al., 2017). In some healthcare organisations patients bear the cost of laboratory investigations, and this has been noted as ethically questionable if the

organisation also uses the information that is obtained, for surveillance purposes (Santos et al., 2008).

Public health surveillance requires majority participation for public health and research benefits to be maximised (Lee et al., 2012). Statutory notification of selected communicable diseases remains the mainstay of public health surveillance however MROs are not required to be notified (NSW Government, 2010). To counter concerns about the ethical conflicts associated with using patient laboratory information without their consent, whilst achieving maximal datasets, an opt-out consent model has been suggested (Degeling et al., 2020). With this approach, active consent for specimen collection would not be necessary. However, a minority of patients might take the option for their results to not be used in surveillance activities. This would support respect for their autonomy, whilst preserving the dataset for the beneficent purposes of public health surveillance (Degeling et al., 2020; Selgelid, 2016).

Proponents of hospital MRO surveillance programmes as a public health strategy justify their non-consensual approach by suggesting that active surveillance cultures done within infection prevention and control programmes are quality improvement activities rather than research. They consider the risk to the patient as minimal, and for these reasons specific informed consent is not required (Djibre et al., 2017; Santos et al., 2008; Vos et al., 2009). This is contrary to research reports that cite the need for informed consent to be provided when the same procedures are done to collect samples for laboratory testing, when the purpose is research rather than clinical care (Skjøl-Årtil et al., 2019; Young et al., 2014).

As will be presented later in this chapter, this study has demonstrated that for some patients unlucky enough to be identified as colonised with an MRO, the risk of harm associated with Contact Precautions is significant. Several other researchers have reported similar negative impacts on patients (Jesus et al., 2019; Purssell et al., 2020; Rump et al., 2017; Tran et al., 2017). The previously cited authors' (Djibre et al., 2017; Santos et al., 2008; Vos et al., 2009) assertion of minimal risk associated with the collection and laboratory testing of clinical samples, is therefore disputed.

This study has corroborated other reports that the accepted approach taken towards the collection and testing of samples for MROs is not in alignment with stated broad expectations of informed consent (Australian Commission on Safety and Quality in Healthcare, 2020; NSW Health, 2020a; Selgelid, 2016; World Health Organisation, 1985). In this study setting health professionals do not routinely consider diagnostic

specimen collection to fall into the scope of the need for informed consent to be provided by patients. These activities appear to be considered part of routine clinical practice and staff defer to policy requirements or doctors' instruction as their explanatory justification for sample collection. Patients are not warned about the possibility that laboratory findings will lead to them being managed under Contact Precautions. Nor are they informed that their laboratory result might be included in surveillance data sets. Patients should be told about the types of people to whom their medical information might be disclosed (Braunack-Mayer & Mulligan, 2003) but this is not occurring in this study setting.

This study demonstrates that in relation to the collection and processing of microbiological specimens, respect for patient autonomy is possibly accepted as dispensable in this study setting. Furthermore, these findings perhaps indicate a belief amongst health professionals that policy requirements have dominance over a respect for patient autonomy. Informed consent is neither sought nor obtained prior to the imposition of Contact Precautions on patients identified as colonised with an MRO.

These findings illustrate how the policy requirement to apply Contact Precautions contributes to feelings of powerlessness amongst health professionals and patients. Another contributor to this theme relates to the importance of effective communication, in its various forms, and the impact on people when information is not forthcoming or is not understood by the intended recipient. This was mentioned by both patients and health professionals.

Early review of the interview audio recordings, written transcripts, field notes and reflective journal, enabled ongoing designation of codes to the data, through an iterative process that required continual reference to the theoretical scaffold. This process, which is described fully in section 4.9, identified several codes that were related to information provision. Some patients described their experiences of being provided with timely and sufficient information, whilst others described feeling that information was not forthcoming and one felt she was being kept in the dark. Health professionals reported the difficulties they experienced when information about a patient's MRO colonisation was not easy to find in their medical records or was not updated frequently enough. Later these initial codes were developed into an understanding of a second sub-theme that has contributed to participants' powerlessness which is now discussed under the title of 'They didn't tell me ... I didn't know'. As shown in Table 7 this sub-theme related to both patients and health

professionals. This sub-theme is now presented, first from the perspective of the patient participants and then from health professionals. Subjects that arise within this sub-theme are that of whose role it is to inform patients and their families, the importance of information being provided in an appropriate format, and a recognition that sometimes the messaging to patients may be overshadowed by other, more pressing, health concerns.

6.2.1.2 They didn't tell me... I didn't know

The sub-theme of 'They didn't tell me... I didn't know' is the second aspect of the broader theme of powerlessness. This study has identified that patients and health professional participants experience feelings of powerlessness when they have not been provided with appropriate and timely information about Contact Precautions. This is concerning because health professionals need accurate and timely information when making safe clinical decisions (Seibert et al., 2014), and effective communication is crucial for patients to be equal partners in their own healthcare (Australian Commission on Safety and Quality in Healthcare, 2020; Beauchamp & Childress, 2013).

The patient perspective

One of the first patients interviewed was Valmai(P). She had recently returned from overseas and therefore required screening for colonisation with an MRO. Contact Precautions were required to be in place from the time of her admission, pending the screening results. She was asked whether she recalled anyone telling her what sort of accommodation she would have and whether she would be in with other people. She said, 'I think they just pushed me in'. Valmai(P).

Seven of the nine patients stated that at no time had anybody taken time to explain the reason or the rationale for the Contact Precautions being implemented, or to help them to understand what implications there may be for them or their families. Paul and Julie(P) recalled noticing the signage on the door of Julie's double room, but that nobody had spent any time explaining why Julie(P) had been moved to this room. They went on to say:

And then somebody mentioned it, and then we see that thing on the – on the door about three weeks ago wasn't it? Yeah. Yeah. Something about, um, infectious something and the nurses have to wear, um, ah, aprons and gloves, and that before they come in. And that's why I'm in here, because apparently, that woman is in the same situation. She's got it too. Otherwise

you're in a room on your own. We didn't know. We... you know, we didn't know. Paul and Julie(P).

Tricia(P) was another patient who did not recall having any explanation provided. She recognised that there was a possibility that she may have been told, but there was an underlying discomfort that she was being kept in the dark. She voiced this concern by saying, '...it's not a nice feeling. Especially when you're really not told... so you think, why keep it a secret like?'

Sally(P) remembered being told she had something called VRE. She said the staff came in just to tell her in a matter-of-fact way that she had VRE, but that no further explanation was given, and she was not invited to ask for more information if she needed it. As a result, she relied on her sister to find out more about VRE by using the internet:

My sister Googled everything for me, you know. And that was the only reason I knew that it was... that VRE was something to do with the bowels, you know. Sally(P).

This experience was not universal. Amelia(P) recalls being told about her colonisation with MRSA by a nurse who supported the conversation by giving her an information sheet and invited her to come back to her if she had any other questions.

Patients in Contact Precautions are physically and metaphorically isolated in a single room and are actively discouraged from moving outside their allocated space. The emotional impact of this aspect of Contact Precautions is described in more detail later in this chapter under the theme of 'You feel a bit of a pariah' however, the empirical reality for patients being managed under Contact Precautions is that they feel powerless and uninformed. They are unable to negotiate with staff about the restrictions they find themselves under. Ronald (P) described this in his interview saying, 'I can't walk next door and say hello. I have been told not to go out'.

A predictable challenge to the principle of respect for autonomy when Contact Precautions are in place, is that hospital patients' already restricted opportunities for choice about mobility and socialisation are further curtailed (Alfandre et al., 2020). Indeed, removal of social interaction and limiting contact with the hospital environment outside the patient's designated room is the primary objective of the impositions required by infection prevention and control policies designed to reduce

the risk of transmission of pathogens from the patient to other people (National Health and Medicine Research Council, 2019).

As pointed out by Alfandre et al. (2020) patients cannot be expected to follow rules that restrict their movement if they have not been informed of the restrictions and the rationale for them. He goes on to say that restricting patients' movement is problematic, but that risk and context-specific restrictions can be ethically justified as long as appropriate conditions are met, and the person understands and agrees to the restrictions. As will now be discussed, this study has exposed constraints to the principle of respect for autonomy as it relates to the provision of information about the application of Contact Precautions.

Several interviews highlight the minimal degree to which patients are fully involved and informed about their MRO colonisation status and the application of Contact Precautions. The provision of accurate and timely information about the organism and the requirements of Contact Precautions have been found to be important to patients (Barratt et al., 2010; Burnett et al., 2010) and the fact that Contact Precautions are not designed to protect the isolated patient, should be openly communicated to them (Zastrow, 2011). This study has found that patients are not provided with a balanced appraisal of the risks and benefits associated with the application of Contact Precautions. None of the patient participants were given an option about whether Contact Precautions would be initiated, and several remained uncertain about the rationale for Contact Precautions being applied, as was also found by Newton et al. (2001). Reflective of the findings of this study, other researchers have found patients to be dissatisfied with the information they had received, either because they had not received any (Eli et al., 2020; Raupach-Rosin et al., 2016) or because they considered it inadequate (Guilley-Lerondeau et al., 2017; Heckel et al., 2017; Hill et al., 2013; Wijnakker et al., 2020; Wyer et al., 2015).

Patient participants as well as health professionals in this study commented on the value of having written resources available. Such resources would enable patients to better understand the restrictions they were placed under, even when not provided with any choice about the application of Contact Precautions. Paradoxically, although health professionals in this study strongly supported patients receiving information, patients colonised with an MRO were often not given information about the organism or the required control measures. Reasons for this failure to communicate effectively are varied (Harris et al., 2020) and it should not be assumed that highly educated health professionals have a good understanding

of MROs and of control measures (Bushuven et al., 2019; Easton et al., 2007; Kolpa et al., 2015).

Other researchers have similarly found suboptimal provision of information about MROs or Contact Precautions to patients, citing the provision of physical care as taking priority over patient education (Cassidy, 2006) and factors such as lack of perceived patient demand, and time pressures, as reasons (Merle et al., 2007). It has also been reported that although staff are trained on the need for patients to be educated about Contact Precautions there is limited conversation about the positive and negative effects of Contact Precautions within that training (Mehrotra et al., 2013). Health professionals may therefore not be aware of the possible negative consequences of Contact Precautions on patients and will therefore not be in a position to provide patients with balanced advice about risks and benefits.

The timing of information provision is also important. Five of the patient participants described how their other significant health concerns were of greater importance to them than MRO colonisation and being isolated in a single room. Medication or recent anaesthetic were also offered by these patients as reasons for the information potentially not being understood. Other researchers concur and have recommended the timing and content of information about MRSA needs to be considered sensitively, particularly for acutely ill patients (Currie et al., 2014).

Poor communication and lack of information about the MRO and the reasons for the PPE and other measures required of Contact Precautions contributed to patient participants in this study feeling powerless. This corroborates other researchers who describe patients feeling powerless, helpless, confused, and frustrated about the inconsistent, untimely, and inaccurate information they received from health professionals (Eli et al., 2020; Mo et al., 2019; Wyer et al., 2015). The potential impact on patients, of this disregard for respect for autonomy has been shown in this study to be significant. Patients being managed under Contact Precautions feel that things are done to them and do not consider themselves to be active partners in their own care.

Whilst some health professionals agreed with patients not having an option about whether Contact Precautions were put in place, for others this was a 'light globe moment' (Katy(N)) because for other aspects of care, patient consent and informed choice is paramount. Amongst patient participants there was a broad acceptance of the need for Contact Precautions to be in place, and little evidence of patients

questioning or asking for justification for the practice, despite some of them feeling very uncomfortable because of the restrictions imposed by the policy.

The findings of this study indicate that impact of Contact Precautions policy restrictions on patients is variable. Some patients such as Leticia(P) reported feeling safe and secure whilst in isolation. Other patients, and some health professionals, saw the restrictions as a mild inconvenience, or a source of humiliation and discomfort. For some such as Sally(P) and Tricia(P), it mattered that they were subject to a policy and practices of which they had not been forewarned and had not consented to. Their experience of Contact Precautions provoked a sense of being unfairly singled out or ostracised, and this is discussed in more detail later in this chapter.

Health professional participants in this study justified not providing information about the possibility of an MRO being identified and control measures being implemented, prior to specimen collection, by stating that there is no point in worrying the patient about something that may not happen. This rationale has been given by health professionals in other reports (Merle et al., 2007). This view might be seen as the health professional smoothing the way for the patient to have a comfortable and supportive experience of hospital admission, reflecting the principle of beneficence, however, Beauchamp and Childress (2013) describe how modern medicine requires and expects patients to receive information in order to make independent choices about their healthcare. This paternalistic decision not to provide comprehensive information, nor to disclose a material risk (that an MRO might be found, and Contact Precautions be instigated, and harm might ensue), shows disrespect for the patient's autonomous rights (Cole et al., 2014; Schermer, 2002). The possible harm that could be caused, that the health professional has chosen to protect the patient from, whilst important, is not of considerable magnitude, and is avoidable, so this constitutes unjustifiable breach of respect for the patient's autonomy over the professional beneficence (or paternalistic action) that has been directed towards the patient (Beauchamp & Childress, 2013).

This study has provided considerable insight into the importance of information provision and effective communication for health professionals as well as patients. As depicted in Table 7 (page 122) this sub-theme of 'They didn't tell me... I didn't know' relates strongly to the health professionals' experiences when clinical communication is not as clear or as timely as might be expected.

The health professional perspective

Just as most patients described instances where they felt uninformed and ‘in the dark’, nine of the health professionals described having trouble in obtaining accurate information relating to the infection prevention and control precautions that were needed for a particular patient. As Sara(A) recounts, ‘With all the bed moves that happen in an acute setting the signs don’t always match up with the patient that’s actually in the room’.

For six of these staff, the visibility or availability of accurate signage at the patient’s bedside had been suboptimal, and two doctors reported that junior doctors might not know where to find the infection prevention and control alerts in the patient’s electronic medical record. As Kit(D) commented, ‘When I speak to them on the phone, they’re not all aware of where to look for the alerts tab on our computer’.

Kit(D) is an experienced doctor who went on to describe her role in teaching juniors how to find this information more easily.

The accuracy of clinical handover between nursing shifts was another identified area for concern, with one nurse stating:

The other day we had a VRE patient who was transferred to our ward, and it was clearly written on their notes, but it wasn’t handed over to us so we couldn’t take precautions and we had this person in a four bed, like, you know, and the nightmare that then creates. Dan(N)

These participants described the lack of timely and accurate information about patients and their MRO status, or inaccuracies in the communication, as having impacted on them professionally or on the care they provided to their patients. Dan’s use of the word ‘nightmare’ reflects the degree of concern and frustration felt by these health professionals. Many went on to describe their ensuing nervousness and doubt that they were following infection prevention and control policies correctly:

I think part of the time as well, um, I’m not always sure how accurate it is, even just this morning, um, as I was about to walk into a room, I see the sign but I see the nurse in there with no precautions at all, and I’m thinking is that just because the previous patient... or is that what I should be doing. I suppose that’s sort of what I get nervous about as well, in terms of what I’m supposed to do. Emily(A).

These examples demonstrate how both patients and health professionals are placed in a position of powerlessness if they are not provided with easily accessible, accurate and timely information about the need for Contact Precautions to be in place.

When the information is available to staff, there is an expectation that it will be passed on to the patient and to their loved ones, particularly as for many patients, the finding of an MRO will require them to be relocated into a single room for Contact Precautions to be implemented. This research has identified a lack of consistency of approach or clear understanding about whose role it should be to have these conversations with patients and their families.

Whose role is it to tell the patient?

The conversations with health professionals revealed an inconsistency in opinion and in practice, around whose role it should be to explain the laboratory finding of the presence of an MRO, the need for Contact Precautions, and what these things mean in terms of the changes that patients might notice. Most nurses responded that they would be confident in having these discussions with patients although two felt strongly that it would be a doctor's role rather than a nursing duty to tell the patient their microbiology results. Toby(N) revealed he had not discussed the lab findings or the implications with his patients, saying, '...to be honest, I've never had that conversation with a patient about that..... I think the doctor should have that conversation'.

Similarly, doctors held inconsistent views about who should have these conversations with patients. One felt this would be a nursing role, one felt it would be their own role as the doctor managing the patient, and two were not sure whose role it should be. Kit(D) reflected:

I can't think of any time that I've ever heard anyone explaining to the patient that they're in a single room, because they're colonised with a multi-resistant organism or even what that means. They – they may well get leaflets and things from the nursing staff and they may have that conversation with their nurse. Um, but not from the doctor's side of it. Kit(D).

Participants in this study provided many reasons for doctors not having this conversation. These included a lack of time and a belief that the nursing staff will explain, because they have more time and easier access to resources such as information sheets. Nurses such as Lindy(N) are often the people who tell the patient

that they need to be moved into a single room and recognise this as part of their role:

Yes, it's definitely part of my job as I'm looking after everything for that patient. The doctors do explain too but I don't think they explain it as well sometimes because the patients do often ask me to explain. Lindy(N).

Allied health participants were occasionally asked for more information about the MRO or the reasons why Contact Precautions were in place. Asha(A) described how she would do her best to explain, and to try to provide reassurance, but also questioned her capacity to provide that reassurance to patients:

...and then you do your best to kind of explain, it's because previously you've been swabbed and it's sometimes a couple of years ago and it's come up on their file as having MRSA, but they're like, "But that's all gone" and I'm like..... "Okay, we'll get the nurse in if we need to"...but at the same time realising that I'm not the person with the most, best knowledge to do the reassuring in some ways. Asha(A).

As described earlier in this chapter, explanations might be couched in terms of the need to comply with the policy framework, rather than the provision of specific information individualised to the patient. This is exemplified by Juliet(N) who stated, '...you would explain to the family that the hospital policy or whatever is that the people wear these - these precautions'.

This study has shown that doctors and allied health staff have less confidence in explaining MROs or the need for Contact Precautions with patients, than the nurses. Allied health professionals would give very basic information to their patients, if asked for it, but would have a low threshold for deferring to nursing staff when the patient was needing a more detailed answer than they could provide.

Some nurses do not believe it is their role to initiate conversations that reveal a patient's MRO colonisation, or the need for Contact Precautions to be put in place. However, when necessary, they will answer questions they are asked by patients and their families. Most of the nurses interviewed expressed a high level of confidence in answering patients' questions and were all aware of the information sheets and other resources available to them to support these conversations. Despite the availability of these resources, some health professionals noted challenges in communicating this information to patients.

The importance of plain language

One doctor recognised that when explaining to patients he may use technical jargon which might compromise the effectiveness of his communication. He reflected, 'Sometimes I've made the mistake of trying to over explain things to people and, um, you know, halfway through the conversations you just realise that basically, they've tuned out'. Simon(D).

This recognition that information needs to be provided in a suitable format and using suitable language is important. One doctor and eight nurses referred to the availability of written factsheets during their interviews, describing them as a useful tool that enabled them to explain the MRO and hospital infection prevention and control policies effectively. According to one nurse:

It's easier to provide patients with the information for them to have a read through and ask questions than it is to try and get a doctor to walk in there and explain it with, all their jargon. You know, the patients don't understand, they find it very overwhelming to get loaded with information like that. The factsheets have a lot of information that's really easy for patients to understand. Andrew(N).

Some health professionals, reflecting on their experiences of informing patients about their MRO colonisation and the need for Contact Precautions to be in place, described the need for a calming tone of voice, in addition to the factsheets, as a means of providing reassurance alongside the factual technical information. This was shown by Katy(N) who said, 'I try and take care in the manner and tone that I do it, and also have those great sheets that we have. They seem to get reassurance out of that'.

As described earlier, many patients reported that they had not had their MRO explained to them. However, the patients that had received information would often refer to being given written information sheets, and these were appreciated. As Amelia(P) said, 'I didn't really know what it was at first... they gave me some information pamphlets, um, yeah, so I read up on it, and it's, yeah, it's quite serious'. These findings illustrate that provision of the complex technical and scientific information inherent in any conversation about MROs, in plain language, whether delivered in a written format, or verbally, using a reassuring tone, is crucial otherwise patients will not have the information they need to make informed choices about their care.

A pre-requisite for empowerment, exemplified through the ability to exercise autonomous choice and control, is the effective, timely, and appropriate, provision of accurate information (Beauchamp & Childress, 2013). The second novel understanding that has been revealed by this study is the impact of Contact Precautions on the principle of respect for autonomy as it relates to health professionals. Whilst it is recognised that Beauchamp and Childress (2013) take a patient-centred approach to the principle of respect for autonomy, this study has demonstrated the importance of recognising health professionals as autonomous individuals (Pellegrino, 1994). These people require accurate, timely and appropriate information on which to make their professional decisions relating to their interactions with patients known to be colonised with an MRO. The availability and calibre of information provided to health professionals will also influence their personal and professional actions, as knowledge is a key driver for intended and actual behaviours (Ajzen, 2019).

Effective communication between healthcare professionals and their patients, and between health professionals, is a central requirement in clinical encounters (Milligan & Jones, 2016). This is recognised within infection prevention and control policy and standards (National Health and Medicine Research Council, 2019; NSW Health, 2019) and several different mechanisms are used to facilitate optimal communication. In practice though, participants in this study have demonstrated that these processes are not always functioning as they ought. Just as patients feel powerless when being managed under Contact Precautions, health professionals in this study also experience powerlessness in relation to Contact Precautions. Health professional participants identify difficulties in finding important information to guide them in patient care. They also indicate the importance of having trust in the accuracy of information when it is available. Absence or inaccuracies in the information relating to their patients' requirements for Contact Precautions leads to them feeling disempowered and unable to make considered and effective decisions about their care of the patient, as has been reported by other authors (Cohen et al., 2011; Seibert et al., 2014).

Both patient and health professional participants recognised that at times, the information may be provided but because of other factors, it may not be understood, assimilated, or remembered, later in the patient's hospital stay.

I have more important concerns

When Amelia(P), a type 1 diabetic known to be colonised with MRSA was asked what she thought the most important thing was about her health, she replied, 'With everything that I have? Um, probably my amputation ... yeah, because, you know, not looking after that can lead to more amputation'.

Four other patients indicated that they had more pressing health concerns than MRO colonisation and the application of Contact Precautions. The timing of the provision of the information to patients was acknowledged by two of the patients as a potential reason for them having no recollection of being informed of the reason for the move to a single room. Bobby(P) reflected, 'I think I was in a position where I'd – nothing really mattered at the time because I'd been out – spaced out, I suppose'.

Whilst health professional participants did not speak about the timing of the provision of this information to patients, transcripts of the interviews with patients reveal, that although an explanation might be provided, this could happen at the time the relocation is in progress rather than beforehand. Bobby(P) remembered, '...suddenly, I was whipped into this room ... straight away told, yeah, I've got this thing and you're gonna be in isolation'.

Six health professional participants reported that in their experience, the need for Contact Precautions to be in place as a result of MRO colonisation, was often not the most important consideration or concern for their patients. Vincent(D) surmised that this was the explanation for patients not asking more questions about the MRO or the need for Contact Precautions to be implemented:

I guess they're occupied with the acute condition that brought them in. So having some swab say they've got MRSA is of very little relevance to them, so they don't usually ask about it. Vincent(D).

There is a third sub-theme to the theme of powerlessness that relates to an embedded cultural complexity of interprofessional hierarchy, and the traditional rank structures in health, particularly those relating to the medical profession. This sub-theme is now presented.

6.2.1.3 *Hierarchy*

The interviews reveal evidence of disempowerment and powerlessness when the varying hierarchical status of each of the professional roles came into play.

Many nurses and allied health professionals reported feelings of powerlessness and referred to a power differential between the professions when describing how some colleagues (particularly doctors) do not implement the personal protective equipment (PPE) and hand hygiene aspects of Contact Precautions as well as they should. Milya's words illustrate these feelings:

Big, big power. So doctors are doctors, nurses are nurses, you know what I mean, we mainly tell them our concerns of the patient, but I don't feel that we can be direct in saying "you should be doing this". Milya(N).

When providing prompts or reminders on the correct practices when noticing Contact Precautions not being effectively followed, participants describe a range of responses from their medical colleagues, from being thanked for the reminder, or being ignored. Junior doctors were more likely to receive the prompt with an appreciative comment than the senior doctors.

Rarely, attempts to improve practice were met with hostility as described by Hayley(N), 'Kind of a, I don't know, like the worst one was probably a – just a blatant shut the door on us'.

One of the allied health participants described being able to have conversations with the nursing staff, but not so easily with the doctors if she noticed breaches in Contact Precautions policy requirements for PPE or when the correct signage is not in place. Judy(A) indicated a concern about an inter-professional relationship and hierarchy when she asked, 'How do you approach the doctor without them, you know, saying well, "why are you telling me?" sort of thing, "I'm a doctor"?' This statement implies that Judy(A), an allied health professional, does not feel she has the status to challenge what she has noticed in her medical colleagues' practice.

The effects of hierarchical structures are not limited to inter-professional tensions. Within the medical profession the influence of the rank structure, and the difficulties for junior staff in navigating the practical aspects of infection prevention and control theory was apparent. Bertram(D) reflected:

You want to do things right as well, and ...the process of learning whose behaviour you should be modelling ...it is not formal teaching... it is all quite

informal and that puts you as a junior in some quite difficult situations. Particularly when things are really busy and the consultant and registrars might be agonising over a drug chart or something they are focused on and you can see you know, the person who is forfeiting hand hygiene and things. Bertram(D).

Bertram(D) was the most junior doctor interviewed. He went on to say, 'My impression has always been that that is, uh, quite strict in theory and then quite often, depending on who [laughter] you are working under, quite lax.... it's observed in varying degrees I suppose'.

Bertram's observations of sub-optimal practices by some of the senior doctors depict how adherence to Contact Precautions policy is sometimes at variance with theoretical principles. He then continued 'You can't really question that. At my level' Bertram(D), and this implies his perceived powerlessness to challenge the practices he has seen in his more senior colleagues. This sense of powerlessness also came through with other junior doctors reporting how the expectations of their senior colleagues to get patients seen and clinical decisions made as quickly as possible led them to having to cut corners. They gave examples such as not being able to spend as much time with patients to explain Contact Precautions to them, or to employ Contact Precautions correctly, and feeling unable to ask their senior for more time to don their PPE effectively or carry out effective hand hygiene.

Winton(D), himself a senior physician, summarised by saying, 'There's an inherent hierarchical barrier. People don't say things to consultants because they feel it's challenging them and challenging them unreasonably'.

For health professionals, the hierarchical structures of healthcare systems, and the impact of these on professional relationships are familiar territory (Martin & Waring, 2012). This study's theme of powerlessness was associated with concerns about disregard for their personal autonomy as a health professional (Pellegrino, 1994), and difficulties in resolution of interprofessional conflicts arising because of different professionals' views and compliance with Contact Precautions policies. These findings concur with other researchers' reports (Bail et al., 2009; Gilbert & Kerridge, 2019). Powerlessness was also felt by health professionals not feeling engaged with policy development and implementation, and a perception that policies are delivered from 'on-high' by management that is disconnected from the realities of the clinical space. These findings corroborate those of others (Cabana et al., 1999; Evans-Lacko et al., 2010; Gilbert & Kerridge, 2019).

However, it must be recognised that many of the concerns raised are likely to also apply to other policies and professional regulatory frameworks (Jones, 2001), codes of conduct (Australian Health Practitioner Regulation Agency, 2021) and contracts of employment. Notably, schedule 3 of the NSW Health Practitioner Regulation requires all registered health professionals to comply with accepted best practice for infection prevention and control (NSW Government, 2016). Therefore, these findings, whilst of interest because they corroborate the conclusions of other researchers, do not add significant new knowledge, and so are not discussed in further detail here.

These findings provide evidence of the powerlessness that is felt by many health professionals when they encounter sub-optimal application of infection prevention and control policies. One participant, Sara(A), stated that the role of managers and other leaders in monitoring policy compliance and supporting staff who make attempts to improve others' practice through reminders or visual prompts, was important. The need to improve workplace cultures around the application of Contact Precautions and the ability of staff to coach colleagues in improved practice was voiced by a senior doctor who acknowledged:

We actually need to change strategies around doctors to get a culture where it's permissible to say to Surgical Sir, "excuse me doctor so and so...you've forgotten to use your hand hygiene. Here it is, now could you please use it" and the response to that would be to the enrolled nurse "thanks for letting me know". Winton(D).

The study has uncovered the potential for Contact Precautions to trigger workplace stress and discord. Some complex intra-professional and inter-professional hierarchical structures have been demonstrated to have been reinforced by participants' recognition of differing professional and individual approaches to Contact Precautions. Whilst the resulting friction has relevance to the principle of non-maleficence, it is also important in this discussion about the personal autonomy of health professionals (Ells et al., 2011; Pellegrino, 1994) because of the role of culture and societally held beliefs on an individual's agency about their actions and behaviours (Ajzen, 1991).

Interprofessional communication, particularly when individual or collective health professional groups are observed to breach policy requirements in their clinical practice, has been found in this study to be an indicator that organisational culture is influential in participants' feelings of powerlessness. The health professional

group that was cited most frequently by participants in this study as demonstrating inconsistency in their compliance with Contact Precautions policy, were doctors. Nurses and allied health professionals described feelings of powerlessness when describing how some colleagues (particularly doctors) do not implement the PPE and hand hygiene aspects of Contact Precautions as well as they should. Explanations for the phenomenon of poor policy compliance by doctors have been proffered (Redelmeier & Shafir, 2015) and an identified important factor governing doctors' infection prevention and control practices is their highly valued clinical autonomy. In one study a doctor is quoted as saying 'you can't tell doctors what to do' (Gilbert & Kerridge, 2019, p. 3). This resonates with participants such as Winton(D), Bertram(D) and Judy(A) who made comments indicating that the workplace culture, comprising organisational factors such as role modelling and clinical leadership, as well as the inherent hierarchical nature of the healthcare system, were influential in the way that Contact Precautions were applied in the study hospitals. Several study participants described feeling unable to properly comply with Contact Precautions requirements because of pressure being placed on them overtly or subliminally, by their senior colleagues, or by virtue of their perceived relative lower standing in the established professional hierarchical structure.

Participants in this study described feeling impotent and frustrated that some senior doctors, as key influencers in the organisation, do not espouse a culture of compliance with infection prevention and control policy. These clinicians, in exercising their personal autonomy as a health professional, by refusing to be bound by infection prevention and control policy, are imposing their authoritative position over their juniors. In doing so, they threaten, or disrespect the autonomy of those junior team members. Junior doctors revealed feeling powerless when they reported how the expectations of their senior colleagues to get patients seen, and clinical decisions made as quickly as possible, led them to having to cut corners and not spend as much time with patients to explain Contact Precautions to them. This echoes Irish student nurses who cited their lowly position as 'only a student' as the reason for feeling powerless and unable to intervene when they noticed breaches in infection prevention and control practice by doctors and other colleagues (Cassidy, 2006, p. 1252).

Clinicians look to each other as role models, therefore if senior colleagues demonstrate disrespect towards infection prevention and control policies and

practice, junior doctors will follow their example (Gilbert & Kerridge, 2019; Sharma et al., 2017). However, role modelling alone is not enough to drive empowered optimal practice, and role modelling in infection prevention and control practice is not only important for doctors (Cassidy, 2006). Whatever the profession, strong leadership, including positive role modelling from clinical colleagues, whether or not they are in a formally appointed leadership position, are crucial (Aultman & Borges, 2011; Dhar et al., 2014; Gilbert & Kerridge, 2019; Gould et al., 2016). Uncommitted leadership coupled with organisational resistance has been found to inhibit good infection prevention and control practice at ward level (Henderson et al., 2020).

Interestingly the role of committed leadership in supporting staff in feeling able to challenge poor practice or to prompt their colleagues if necessary was mentioned by only one of the participants in this study. Other participants expressed frustration about a lack of recognition of suboptimal practice, or lack of direct action to address suboptimal practice, from organisational leaders. This mirrors another recent study where doctors were concerned about the apparent immunity from censure that their non-compliant colleagues enjoy (Gilbert & Kerridge, 2019).

Health professional study participants described their experiences of attempting to prompt their colleagues or provide reminders about the need for Contact Precautions. All those that reflected on these experiences could recall times where the response had been unfavourable, and an uncomfortable experience. For some, this meant that in future they would not challenge policy breaches when they were noticed. This reflects other researchers who have described how healthcare hierarchies can impair individual health professionals' abilities to speak out or to discuss their concerns with colleagues when they notice policy breaches and patient safety risks (Cassidy, 2006; Gilbert & Kerridge, 2019; Henderson et al., 2020; Morrow et al., 2016; Schwappach, 2018; Szymczak, 2016). Historical relationship dynamics between colleagues, underlying gender-driven expectations, and the workplace culture have all been related to health professional participants' feelings of powerlessness in this context (Morrow et al., 2016).

This research has identified that nurses and allied health professionals in the study hospitals are not confident in addressing infection prevention and control policy and practice disparity by speaking up when they see suboptimal practice in their medical colleagues. All these factors relate to the principle of respect for autonomy for these health professionals, whose capacity to exercise their autonomy is, at least as far as they see it, compromised by hierarchical structures and perceived authority.

Inter-professional communication, particularly when individual or collective health professional groups are observed to breach policy requirement in their infection prevention and control practice, has been found in this study to be challenging, and a precipitator of participants' feelings of powerlessness.

Powerlessness, demonstrated in both participant groups, through their described level of control and ability for autonomous choice, their experience of being fully informed, or the inherent impact of the traditional hierarchical framework of the healthcare workplace, are accompanied throughout the interviews by a sense of initial frustration, and in some cases anger. In many instances participants describe these feelings being replaced by an acceptance that this is just the way things are.

As discussed at the beginning of this section of the chapter, there was acceptance of the Contact Precautions policy from patients and from health professionals. This acceptance is founded on a sense that experts spend time researching the evidence and writing policies. Because of this staff do not question them out of deference to that expertise, or because employment contracts require policies to be followed, or a belief that Contact Precautions are absolutely necessary to protect against MRO transmission to hospital patients, staff, and family members. As one allied health professional remarked, 'I think the policies are in place to protect everybody.... that's why they're there. People obviously spend a lot of time putting these together for a reason, not for fun'. Sara(A).

The findings show that despite a broad acceptance of the need for the policies and a trust in their content, they are not always followed. Health professional participants who described situations where they felt unable to enact or influence change in their situation or in their colleagues' practices also described their emotional responses with words such as 'frustrated' or 'sad'. This is highlighted by Connie's(N) response:

I have spoken to them. I have spoken to a couple of them and saying, "See how he is MRSA. Do you want to wear gloves?" It's sad because I have – we had to actually like you know, spoon feed them. Like, "Here's your gloves, here's the apron, here's our MRSA". There is a big sign, MRSA. And they don't seem to bother. Connie(N).

Connie(N) also described feeling sad that patients are not given a choice about whether they were accommodated in a single room once colonisation with an MRO had been found.

Lindy(N) described feeling angry when a patient has been in a shared room and then it is found that they should be in Contact Precautions and Asha(A) described her frustration on learning that Contact Precautions should have been used but the signage and PPE had not been put in place. Frustration was an emotion felt by many nurses and allied health participants. Hayley(N) also expresses her frustration when describing how even after having been reminded about the policy requirements in relation to a specific patient, doctors continue with their poor practices during rounds with the other patients on the ward:

I do find some people who just want to get stuff done quickly tend to miss, and doctors tend to be the worst for it, and they take folders in, and they take computers in that can't be generally cleaned very well. So even after we've asked them not to, so I find that to be a bit frustrating because then they walk around the rest of the ward, and they don't put gloves on. Hayley(N).

These emotions frequently give way to words and behaviours that indicate a resignation, acceptance, or acquiescence to the situation and to poor clinical practice, as Connie(N) conveys, 'They just don't follow it or just – just don't think about it. I don't know, it's, um, [laughter]. It's kind of a doctor thing maybe, I don't know'.

This study has demonstrated how the very visible measures of Contact Precautions compliance or non-compliance (wearing PPE when examining patients, or avoiding patient contact so as not to have to wear PPE), have the potential to divide teams, impair professional relationships, and precipitate significant interprofessional frustration, anger, disrespect, or derision. These impacts are likely driven by the varying ethical perspectives and related attitudes of the individual health professionals and their observations of the impacts of Contact Precautions on their patients. From a Kantian perspective, rules, laws, professional codes of conduct and contracts of employment should be followed as a reasonable obligation. An effective clinician will be one who follows the rules and distress will be felt when otherwise respected clinicians are noted by others, to have breached those policies, or when individuals are prevented by others from following those rules. From a virtue ethics perspective however, clinicians may consider their obligation to be a 'good' clinician who demonstrates fairness, honesty, kindness, and empathy, to over-ride their obligations to follow organisational policies they identify as conflicting with those values. Consequentialists will consider the impacts of those policies on themselves and their patients as paramount (Beauchamp & Childress, 2013). These

differing perspectives and attitudes will lead to differing emotional responses, and related challenging or accepting behaviours in individual observers of the practice of Contact Precautions (Ajzen, 1991).

Contact Precautions for the management of patients with an MRO can act as trigger for inter-professional discord, leading to increased workplace stressors and sub-optimal patient care (Baldwin & Daugherty, 2008; Godsell et al., 2013). Such conflict can be difficult and resource intensive to address, with many studies finding that health professionals are not adequately skilled to facilitate successful resolution (Sexton & Orchard, 2016). For these reasons, in addition to its connection to the principle of respect for autonomy, the theme of powerlessness relates to the bioethical principle of non-maleficence 'one ought not to inflict evil or harm' (Beauchamp & Childress, 2013, p. 152).

Participants who described situations where they felt unable to enact or influence change in their situation or in health professionals' clinical practice described their emotional responses as frustrated, angry, or sad. These emotions frequently give way to words that indicate a resignation, acceptance, or acquiescence to the situation. Ronald(P) recalled, 'I got used to being alone', and other patients said things such as 'what can I do about it? It's just the way things are' and nurses and allied health professionals wonder if 'perhaps it's just the way they [doctors] are...'.

Throughout the transcripts, there is evidence that both patients and staff feel, 'this is what I expect when I go into hospital or go to work; to be told what to do and how to do it. It's easier that way as I don't have to make decisions. I've got enough to think about, and I don't want to be difficult or cause a problem'.

Hospitals are an example of organisations that inherently influence control over individuals, and the hospital community, by the very nature of their business. The people that come under that influence generally choose to accept it as a legitimate source of direction, and this is what has been found in this study. Health professionals accept the restrictions to their personal and clinical autonomy that are imposed by organisational policies. Paradoxically, they also accept non-compliance with those policies, at times.

Patients accept the restrictions and emotional discomfort created when Contact Precautions are in place. For people who are admitted to hospital, the role of 'patient' carries with it many restrictions, either internal to the patient, because of their medical condition or health needs, or external, due to organisational requirements.

This was described as long ago as 1979 when Taylor (1979, p. 156) stated that 'the hospital creates a depersonalizing environment that forces the patient to relinquish control over his or her daily existence'.

Patients in this study described a range of emotional responses triggered by their experience of being managed under Contact Precautions. Some were very satisfied and described feeling comfortable, peaceful, and safe. Others described and displayed negative feelings of stigma and discrimination that will be discussed in detail in the next section of this chapter. Similar responses were identified in another qualitative study which found that patients being managed under Contact Precautions experienced emotions such as fear, anger, frustration, and guilt. In that study it was found that over time patients came to accept Contact Precautions as necessary (Barratt et al., 2010). Similarly, this study has found that even though patients sometimes do not receive timely or comprehensive explanations of Contact Precautions and experience some challenging emotions in response to their situation, they accept the imposed restrictions. This has been described as tolerance 'when patients settled for something because they believed that is the way it is in the hospital, even though they were dissatisfied' (Snyder & Fletcher, 2020, p. 413).

The study findings suggest that, as predicted by Taylor (1979), patients who react to Contact Precautions with anger and frustration, will over time, become compliant 'good' patients. Although this terminology is no longer considered appropriate, this study has found that with greater understanding, or possibly over time, patients come to accept and endorse the restrictions that are imposed because they want to do the right thing, even if it is inconvenient or uncomfortable. Amelia(P) and Tricia(P) indicated their desire to be a 'good' patient.

Health professionals also made comments that resonated with the concept of the 'good' patient (Taylor, 1979). Toby(N) described how if patients understand 'why' they are in Contact Precautions, 'they don't normally complain' and Simon(D) reflected that patients do not like to make a fuss, and they do not want to be difficult. These comments indicate that Toby(N) and Simon(D) had observed similar reactions to Contact Precautions in their patients. Other studies have reported that even when patients were angry and disappointed because they attributed their MRO acquisition to poor hospital care, they were hesitant to ask questions, or appear to challenge decisions, due to a fear of harming their relationship with their health professionals (Burnett et al., 2010; Mo et al., 2019).

This progression from powerlessness to acceptance, was also found amongst health professionals in this study. Policies provide a safe framework for evidence-based clinical practice, but have the potential to create professional dissatisfaction and stress if staff feel obliged to follow policies they perceive as stifling client empowerment, as well as when workers resist policy compliance, thereby coming into conflict with the organisation and their colleagues (Eli et al., 2020; Tanner, 1998). Abiding by policies, or at least not openly and actively challenging them may seem the easiest path for health professionals who do not want to be difficult or cause a problem (Szymczak, 2016).

Health professional participants in this study describe their frustrations, concern, and feelings of powerlessness when they observe doctors' suboptimal infection prevention and control practice and encounter disrespectful behaviours or verbal responses when trying to provide reminders or visual prompts. The effect of these responses was often that the individual would not challenge suboptimal practice the next time they witnessed it, despite recognising potential patient safety concerns. This is a common response. As others have noted, the choice to speak up rather than remain silent when witnessing breaches in infection prevention and control involves a process of balancing the professional and social risk against the risk of infection (Schwappach, 2018; Szymczak, 2016).

These conclusions resonate with the reflections of health professionals in this study and suggest an acceptance of suboptimal practice because of feeling unable to influence the other party to comply with the policy. These findings indicate that in a similar way to the progression in patients, from powerlessness to acceptance of the uncomfortable restrictions of Contact Precautions, health professionals experience a transition from powerlessness to acceptance of concerning non-compliance in their colleagues.

For patients, limitations to autonomous choice might arise because of their physical or psychological condition, and coercion (either unintended or deliberate) might result from the health professional's authoritative position (Beauchamp & Childress, 2013; Cole et al., 2014). In the context of healthcare associated infection and this thesis, individual autonomy may justifiably be restricted because the decisions and actions taken by individuals require consideration and balancing that acknowledges the colonised patient as a victim as well as a vector (Francis et al., 2005), and the position of patients as well as health professionals within the broader community that is the hospital (Ells et al., 2011; MacDonald, 2002). The challenge posed by

this thesis is to consider whether restrictions to individual autonomy are ethically justifiable, and to approach that question from a relational autonomy perspective.

Health professionals working in hospitals make an autonomous choice to join their profession and to accept employment in authoritative organisations with complex governance structures. However, conflict can arise when an individual health professional does not endorse or comply with cultural norms or aspects of organisational authority, such as policy frameworks. The result may be that they perceive their professional autonomy as being disrespected when organisational requirements are perceived as taking precedence over their professional training and experience (Beauchamp & Childress, 2013; Gilbert & Kerridge, 2019; Pellegrino, 1994).

It is understandable therefore that the theme of powerlessness was prominent in the experiences of both groups of participants, because the inherent restrictions imposed by healthcare place individuals in an uncomfortable and unempowered position (Snyder & Fletcher, 2020; Taylor, 1979). Both patients and health professionals in this study expressed feelings of powerlessness and inability to affect change, related to their experiences of Contact Precautions. Analysis of findings identified a number of different but connected codes that describe participants' perceptions and experiences of having their liberty (meaning freedom to act and independence from controlling influences) and their capacity to exercise control and intentional action, or agency, (Beauchamp & Childress, 2013), diminished by the application of Contact Precautions and the policy that prescribes them.

Some of these consequences are predictable, and well-described. For patients there is an inherent restriction of autonomy, over and above the normal restrictive and depersonalising experience of being a hospital patient (Snyder & Fletcher, 2020), when Contact Precautions are in place. The objective of these precautions is to prevent the transmission of pathogens from colonised patients to other people or to the environment by limiting patients' freedom of movement and social contacts. MRO colonised patients managed under Contact Precautions have been found to be significantly more likely, than patients not in Contact Precautions, to report a lack of respect for their needs and preferences (Mehrotra et al., 2013).

In summary, this study has found that both patients and health professionals have trust in Contact Precautions and in the experts who have spent time creating the policy framework. They identified problems associated with the application of

Contact Precautions but amongst both groups there was a broad acceptance of the need for Contact Precautions to be in place, and little evidence of patients questioning or asking for justification for the practice, despite some of them feeling very uncomfortable because of the policy.

Some health professionals feel a lack of control about policy development, although many appreciate the fact that policies are there to inform practice and find them empowering in that context. Some health professionals feel that policies could potentially undermine their clinical decision making and felt unable to challenge policies despite anticipating clinically significant errors.

Paradoxically, whilst there is a trust in infection prevention and control policies that prescribe Contact Precautions, participants described several situations and experiences that illustrate a frequent lack of compliance with infection prevention and control policies. The health professional participants in this study acknowledged this and described their resultant feelings of anger, frustration, or sadness. They also indicated their powerlessness and inability to make a difference and improve compliance, and this led to an uncomfortable acceptance of the situation in many.

The way these policies are implemented by some staff has been shown to diminish patients' control over whether clinical specimens are collected. Patients do not have control when the laboratory findings identify that they are to be managed under Contact Precautions, and when in that position their movements around the hospital are significantly restricted.

The transcripts reveal frequent use of nouns describing the strong emotions that are felt by people who are experiencing Contact Precautions either as health professionals or as patients. Components of this theme of powerlessness, namely policy, culture, and communication, have been shown in this study, to lead to stigmatising and discriminatory behaviours and practices being demonstrated by health professionals towards patients. These actions, done in the name of Contact Precautions, lead to patients feeling physically and emotionally isolated; that they are outcasts, dirty, and unimportant

The first doctor to be interviewed used the emotive word 'pariah' when describing how he perceived the way these patients are treated when in hospital. Sally(P) used the same word to describe how she felt when she noticed that hospital staff were avoiding coming into her room, saying, 'The trolley ladies wouldn't come in with the

newspapers because it was a dirty room....so, you do feel like, well, uh, a bit of a pariah almost’.

The word derives from Southern India where it refers to a member of a low caste, and in modern day terms is used to describe a person who is a social outcast (Collins, 1990). Its use by participants in this study was striking as the word is not commonly used in Australia. Other words with similar connotations, such as ‘leper’, ‘plague’, ‘toxic’, and ‘radio-active’ were used by members of both participant groups, and one patient stated his gratitude that his medical team did not make him feel ‘like an alien’. These examples indicate that patient participants experienced feeling socially inferior because of their experiences, and demonstrate the potential for Contact Precautions to elicit dignitary harm (Mitchell et al., 2020). Several other study reports have used similar words when describing how patients being managed under Contact Precautions might feel or be perceived by health professionals (Andersson et al., 2016; Lindberg et al., 2014; Newton et al., 2001; Skyman et al., 2016).

The following section of this chapter considers the study findings alongside the bioethical principle of justice. When examining the study findings from this perspective, the impact of Contact Precautions on individuals will discuss whether MRO colonisation can provoke inequalities in access to healthcare, and whether patients colonised with an MRO have been subjected to unfair discrimination.

6.2.2 Justice: You feel a bit of a pariah

The word ‘pariah’, not commonly used in contemporary Australia, was used by two participants when describing how patients being managed under Contact Precautions are treated, or how they feel. The first was Simon(D) who said, ‘It’s certainly true that they’re treated as pariahs’.

The theme of ‘You feel like a pariah’, holds two sub-themes; ‘They don’t want to come in’, and ‘They make me feel dirty’. These sub-themes indicate that participants recognise that patients being managed under Contact Precautions are not treated the same as others, and a perception that they therefore are not valued as equals either.

Concurring with many other researchers, half of the health professionals in this study had noticed their peers being reluctant to enter a room where Contact Precautions were in place or admitted their own concerns about going in and examining their patients (Andersson et al., 2016; Cassidy, 2006; Eli et al., 2020;

Morgan et al., 2009; Morgan et al., 2013; Saint et al., 2003). Almost half of the patient participants noticed that staff were reluctant to enter their room, as was also reported by others (Newton et al., 2001; Wijnakker et al., 2020). Other areas where this study corroborates other researchers' findings is the phenomenon of clinical staff communicating with patients while standing at the doorway (Barratt et al., 2010; Wilson, 2009) and patients noticing they are being treated very differently from other patients, when staff wear PPE including a yellow long-sleeved gown and gloves. Patients in this study and others have attributed this recognition as eliciting a belief that they must be contaminated, demonstrated by their use of words such as 'leper' and 'downgraded' (Barratt et al., 2010, p. 55) or 'dirty' (Wilson, 2009, p. 21). The exaggerated over-use of PPE has been found to be frightening and threatening to patients, and it also enhances their fears of being dangerous (Lindberg et al., 2014; Skyman et al., 2016).

The use of PPE provides a visual message to patients that they are untouchable and there are other visual signs that reinforce that message. Examples are floor markings or Contact Precautions signage at the entrance to the patient's room which for some participants here, was their first indication that Contact Precautions had been put in place, as has been found by others (Eli et al., 2020; Heckel et al., 2017; Ploug et al., 2015).

Visual messages were reinforced for some of the patients and health professionals in this study, by the language that was used, and overheard by patients, implying the patient is dirty. This use of linguistic demarcation such as 'the dirty side of the ward' or nurses loudly and openly expressing their fears about caring for colonised patients, has been noted elsewhere (Andersson et al., 2016; Eli et al., 2020).

Further reinforcement of the identity of the patient as a 'pariah', was provided to patient participants in this study, when they noticed that they were being kept away from other people. Sally's(P) experience when she was waiting for an X-ray and was 'parked' in a section of the corridor where bags of rubbish were stored, is one such example. Similar lack of person-centeredness associated with the care experiences by people colonised with an MRO have been reported by other authors (Rump et al., 2017; Skyman et al., 2016), and there are many instances of patients care or appointments being left to last in the day because of their MRO colonisation (Lindberg et al., 2014; Lupión-Mendoza et al., 2015; Seibert et al., 2014; Skyman et al., 2016).

Twelve health professionals spoke about their own, or their peers', reluctance to enter the rooms of patients being managed under Contact Precautions and described ways in which they worked around their care provision to these patients. Vincent(D) spent some time reflecting on this during his interview:

Most teams tend to get out of the room very quickly. I've noticed that here in Australia, most of the times the JMO will never step into that room and the Medical Registrar will just stick with the computer at the door. If ever they step into the room they're really careful not to be near the patient, and it's usually the consultant who goes near the patient and talks to them, but then they're careful too. So, yes, the patient is treated very differently. Vincent(D).

A demonstrable hesitancy from staff entering the room of patients being managed under Contact Precautions was noticed by patients.

6.2.2.1 They don't want to come in

Whilst five of the patient participants had no perception of their health professionals being hesitant to enter their room, four patients described instances where they had noticed staff reluctance. Tricia indicated that, 'Most - most nurses are, they're fine. But a couple of the doctors... they hang around in the doorway. It just feels like they're keeping their distance'. One patient reported that the medical and nursing staff had been happy to come into his room, but the food services staff were not. He noted, 'I've had the catering side of it. The food side of it, "oh we can't come in there"'. Milo(P).

One patient described his gratitude that his doctors were comfortable going into his room and standing close by his bed:

Professor J's assistant, and another doctor and another younger doctor, all came in, and they all stood right beside me, in the position of that chair... which made me feel good because I didn't feel like an alien. Bobby(P).

Bobby's use of the word 'alien' resonates with the use of the word 'pariah' by Sally(P) and Simon(D). Other words with similar connotations were used by members of both participant groups, examples being 'toxic', 'radio-active', 'plague', and 'leper'.

Eight health professional participants had observed their peers' unwillingness to enter the single room of a patient being managed under Contact Precautions, and four revealed that they themselves had decided not to go into a room, choosing to converse with the patient from the doorway instead. Teresa(N) commented,

‘Sometimes you might just stand – stand at the door and ask them a question instead of probably going in’.

On hearing from the interviewer that previous interviews were revealing a tendency amongst health professionals to sometimes not go into the room, but to stand and have the conversation with the patient from the outside, one doctor said that there may also be a reluctance amongst her colleagues to undertake a physical examination of these patients, saying, ‘Yeah, sometimes, that happens. And – and it also maybe a reluctance to examine them as much’. Kit(D).

Three patients described noticing how staff were unwilling to touch them. One commented, ‘They try not to touch me. You see them escort some of the people up [to the gym] and they sort of hold their hand and not me’. Ronald(P).

Amongst patients, this recognition that staff were not happy to enter their room, and that they were not having the same type of physical contact with staff as other patients were receiving led to some considerable distress. These feelings are captured by Sally(P) who said, ‘...it's almost, you feel like, you know, I'm a space alien, they're going to run a Geiger counter over me shortly, you know’.

These feelings were not only elicited by actions such as the staff staying outside the room. Certain language that was reported to have been heard on the ward in relation to patients in Contact Precautions, reinforced those patients’ feelings of being ‘untouchable’.

6.2.2.2 They make me feel dirty

One of the patients and two of the health professional participants had heard staff refer to the single room, and by implication the patient within the room, as ‘dirty’:

I kind of think there's still a school of thought that around certain staff members and a certain culture that it's dirty. And I've heard it actually bellowed out in the hallway - - - they – they say that exact word. They say, “Room 3 is dirty”. Katy(N).

This nurse was concerned that there could be a culture amongst her colleagues that considered these patients to be dirty. However, seven of the ten health professionals who were specifically asked whether they had heard the word used in relation to patients being managed under Contact Precautions, said they had not.

The requirement for health professionals to wear a gown and gloves when entering these patients’ rooms was recognised by Will(N) to be an obvious message to the

patient inside, that there was something different about them. He suggests, 'For some patients it's quite alarming. And that's because they see the gowns and gloves, they think that there's something hideously wrong with them'. Will(N).

One health professional related how she had at times been concerned that she might make the patient feel dirty when trying to answer their questions about her wearing the gown and gloves as a requirement of Contact Precautions:

It's just very hard to get around. I try and think on the time they throw it at me, without sort of feeling – and making them feel like they're dirty or something. I'm just worried about how I'm going to answer them. Judy(A).

Judy's concerns were not unfounded. Lana(N) and Teresa(N) both described having had their patients tell them they felt dirty, with Lana(N) saying, 'Sometimes they think they're like diseased, I guess. Yeah. You get some that think they're dirty. Yeah. I've heard people say'.

Both Sally(P) and Tricia(P) described feeling tainted or unclean, and for these two patients the enduring emotional response to those feelings was revealed during the interview. Tricia(P) broke down in tears while she was describing the way that she felt about being managed in the single room under Contact Precautions and noticing that she was being treated differently from other patients:

Yeah, they'll come in but it just, I notice like they're in the other rooms probably more, and ... they're nice and I don't want them to feel like they have to come in here if they didn't want to [crying]...It's upsetting when like, as soon as they have to put the gown on and the gloves, and it's just Like I'm not a dirty, um, person, or... I'm very hygienic, and... I have showers every day, this is like they think that I don't look after myself. Tricia(P).

From an Aristotelian viewpoint, equals must be treated equally (unless there are morally relevant differences), and justice is usually understood in terms of treating others fairly or treating like cases alike (Beauchamp & Childress, 2013). The application of the principle of justice should occur non-arbitrarily without discrimination. Just treatment of individuals means that each person or group of people should feel that their rights, interests, and concerns are treated as equally important as those of others. Other authors have recognised unequal treatment of isolated and non-isolated patients as requiring ethical consideration (Dickmann et al., 2017).

There must be fair opportunity, and no unfair discrimination, in a healthcare system that respects, values, and operates according to the principle of justice (Beauchamp & Childress, 2013). These requirements raise two important factors relating to the concept of luck egalitarianism that are relevant to this thesis (Holm, 2020).

The first of these relates to the validity of the information upon which the decision to apply Contact Precautions is made. Not all patients admitted to hospital, or to an ICU, are screened for the presence of an MRO (Pogorzelska et al., 2012; Shenoy et al., 2012). A patient's colonisation will have been recognised through a laboratory test of a specimen collected for a variety of reasons. Sometimes this happens by chance; being in the wrong place at the wrong time. For example, a patient might find themselves being screened for MRO colonisation because they are on a hospital ward when an outbreak is identified, and all patients are screened for an MRO as a result. They do not need treatment for their colonisation and are not harmed by it, but their medical information including their MRO colonisation status will be shared with people outside their immediate clinical team. Patients who do not have relevant microbiological tests done during their hospital admission will not be identified as colonised with an MRO. However, many of these patients might actually be colonised with one or more MROs (Karki et al., 2012; Skjøl-Årtil et al., 2019). In addition, up to 20% of patients flagged in their medical record as MRO colonised previously, and therefore subjected to Contact Precautions during their current admission, will no longer carry the pathogen (Goldsack et al., 2014).

The second relevant and related factor is that basing actions or policies on properties an individual has no control over is discriminatory (Beauchamp & Childress, 2013). Whilst these properties are often ones of genetics, race, gender, or sexuality, this section of the thesis argues that state of being colonised with an MRO is such a property; one that the individual has no control over, as has been supported by Holm (2020).

This viewpoint has been challenged by Voo and Lederman (2020, p. S64) who state that 'it is likely the case that at least some individuals are colonised because of the decisions they make'. They cite health providers or patient carers who provide care to those they know are colonised. In making this assertion these authors fail to recognise the fact that employment and family obligations effectively remove free choice and make those decisions inevitable. It is also the case that colonisation may occur, not through contact with another colonised or infected person or fomite, but because of antimicrobial administration as necessary and beneficent treatment for

conditions such as chronic respiratory or urinary tract infections (Karki et al., 2012; Skjøt-Arkil et al., 2019).

For these reasons it is maintained throughout this thesis that people colonised with an MRO have no control or influence over that state. It is acknowledged that public health ethics allow for restrictions to be imposed on colonised or infected individuals, but the restrictions must be in proportion to the potential harm that could occur otherwise (Lee, 2012; Smith et al., 2004). It has been shown that infections caused by MROs are not necessarily more harmful than infections caused by antibiotic sensitive strains of the same pathogen (Cheah et al., 2013; De Rosa et al., 2015), and valid concerns about harms caused by Contact Precautions are commonly voiced (Harris et al., 2019).

It is also important to consider that if Contact Precautions were indeed proven to be effective at reducing MRO transmission, they would likely also prevent the transmission of other significant pathogens in hospitals. In this case, how would it be ethically justifiable to only apply these more effective infection prevention and control measures to MRO colonised patients, but not to others? All patients deserve to be safeguarded from healthcare-associated infections (Australian Commission on Safety and Quality in Healthcare, 2020; Day & Stream, 2018; National Health and Medicine Research Council, 2019). MRO colonisation is therefore not a morally relevant difference that justifies colonised patients being treated in a materially different way from non-colonised patients.

An injustice is said to occur when a benefit to which a person is entitled is denied without good reason, or where a burden is imposed unduly (Adams & Miles, 2013). The findings presented in the previous chapter indicate that patients managed in Contact Precautions are not afforded the same level of health provision as non-isolated patients. These patients have less contact with their health professionals, and their expected healthcare journey might be interrupted significantly, leading to them receiving inequitable care.

When considering the principle of justice and its relationship to the question of whether Contact Precautions are ethically justifiable in contemporary hospital care, the findings of this study suggest that for individual patients, injustices occur. The findings also demonstrate that as a result of their experiences, and visual and auditory reinforcement, patients in this study feel stigmatised, discriminated against, and punished. Fätkenheuer et al. (2015) reflect that isolation is the prototypical punishment in all societies, and isolation rooms have been described as a prison

(Djurman & Gardell, 2018) so it is not surprising that some patients have felt this way.

Stigma is defined as occurring with the convergence of five interrelated components (Link & Phelan, 2001) whose applicability to the impacts of Contact Precautions on participants of this study is shown in Table 9.

Stigma component (Link & Phelan, 2001)	Identified in study findings?	
Human differences distinguished and labelled	Yes	Alerts in patient notes Signage at entrance to room Visual reminders – PPE use by staff
Labelled persons linked to negative stereotypes	Yes	Auditory reminders – use of terms such as 'dirty room'
Separation of us from them	Yes	Physical and temporal separation – single rooms, last appointment on the operating list
Status loss and discrimination leading to unequal outcomes	Yes	Health professionals spending less time with these patients, and being less likely to physically examine them
Relative power between stigmatised and stigmatiser	Yes	Hospital patients are inherently under the control and influences of the hospital infrastructure and their health professionals

Table 9. Stigmatisation demonstrated through study findings

Since the possibility that Contact Precautions could elicit feelings of stigma in affected patients was first considered (Knowles, 1993), there has been a sizeable amount of research undertaken in this field. Whilst validated assessment tools have been developed and used in the context of infection prevention and control research, the use of such quantitative methods are not an absolute requirement for stigma to be confirmed. An individual understanding and perception that stigma-indicative components are in place, is enough (Link & Phelan, 2001).

The published literature relating to stigma and Contact Precautions is equivocal. When validated assessment tools are used, some researchers have confirmed stigma in the majority of respondents (Rump et al., 2017) while others have excluded stigma as a prominent experience associated with Contact Precautions (Day et al., 2013; Wijnakker et al., 2020). However, studies that have used self-report rather than a validated assessment tool indicate that patients experience stigmatisation as a result of Contact Precautions or being colonised with an MRO, and patients also exert self-stigmatisation by actions such as restricting their contact

with friends and family (Barratt et al., 2010; Mo et al., 2019; Mutsonziwa & Green, 2011; Raupach-Rosin et al., 2016). It is likely that the inherent power imbalance between hospital patients and staff promotes this condition (Barratt et al., 2011; Taylor, 1979). Moreover, it is recognised that the outcomes of stigmatisation may involve perpetuation of stigmatising behaviours that lead to inequities in health provision (Jesus et al., 2019; Mehrotra et al., 2013; Rump et al., 2017).

The principle of justice not only considers aspects such as discrimination and infringements of rights from the individual perspective, it also considers the equitable provision of care and the equitable division of health resources to support that care provision (Beauchamp & Childress, 2013). The principle of justice requires equal access to healthcare, and consequently, equality of health status in individuals, and groups. The principle can be considered from the perspective of individuals and can also be used to evaluate the moral suitability of wider health policy. In this latter context, there is a need for attention to be paid to prioritisation of the allocation of resources to individuals and communities, including the financial costs of health provision (Beauchamp & Childress, 2013).

Health allocation decisions must be made from within allocated and targeted budgets (Beauchamp & Childress, 2013) and public policy makers' decisions should recognise and attend to the interests of those affected by them (Olver et al., 2019). Contact Precautions in the management of people colonised with an MRO have been cited as an example of a practice that continues despite little evidence for its effectiveness, and a growing knowledge of patient harm and financial costs (Prasad & Ioannidis, 2014).

Although the financial costs of Contact Precautions were not explored in this study, participants' references to the resource implications of the policy, such as the costs of consumables, make this a relevant consideration within this thesis. The financial costs of implementing Contact Precautions have been calculated as between 0.23 and 0.37 times higher than when Standard Precautions are in place (Andreassen et al., 2017; Tran et al., 2017). While considering whether Contact Precautions are ethically justifiable in contemporary hospital care it is important to consider whether the practice is an example of low-value care. Assessment of this possibility requires consideration of many factors including clinical effectiveness and patient safety (Hasson et al., 2019), with the objective of discontinuing low value practices so that resources can be freed to the provision of high value evidence-based practice (Prasad & Ioannidis, 2014). This assessment will be returned to in the section of this

chapter that considers beneficence, where discussions about cost-benefit analysis become most pertinent within the question of whether Contact Precautions are ethically justifiable in contemporary hospital care.

As has been discussed, the feelings of stigma and the sometimes-discriminatory practices that patients in Contact Precautions experience, and concerns that this is a low value practice place this theme into the context of the principle of justice. In addition, the psychological harm that can arise, as described by participants such as Sally(P) demonstrates that this theme also maps to the principle of non-maleficence; that negative obligation to universally refrain from causing harm or risk of harm to others (Beauchamp & Childress, 2013). The study findings reveal a complex matrix of concerns relating to harm being caused to health professionals, as well as patients, when Contact Precautions are in place.

6.2.3 Non-maleficence: Doing Contact Precautions is not easy

The practical application of Contact Precautions in the hospital environment is revealed in this study as a challenging enterprise. The first sub-theme to be discussed under the theme of 'Doing Contact Precautions is not easy' is the confusion that arises from the variation in infection prevention and control policy between different countries, hospitals, or patient groups. This was briefly introduced earlier in this chapter, under the theme of 'Powerlessness - moving to acceptance' and is further expounded here.

The second sub-theme contributing to this theme is that of wasted time and wasted resources which was a topic covered by members of both participant groups.

Whilst many people, if asked, would respond that to have a private single room when in hospital would be their ideal, this study has shown that being accommodated in a single room as a requirement of Contact Precautions is not necessarily beneficial to the patient. Single rooms are good, but not for everybody all the time. This is the third sub-theme contributing to the finding that doing Contact Precautions is not easy.

Another finding relating to both participant groups were the feelings of psychological discomfort, stress, and anxiety, that were elicited by Contact Precautions. Many patients demonstrated feelings of anxiety, stress, and discomfort, associated either with being identified as colonised with an MRO, or with their experiences of the Contact Precautions that are then put in place. Staff shared that they were aware of their patient's concerns, and that they may also have their own triggers for feeling anxious or stressed when using Contact Precautions. In addition to psychological

discomfort, health professionals frequently described being physically uncomfortable when undertaking patient care whilst complying with the requirements of Contact Precautions. These findings contribute to the fourth sub-theme, 'Contact Precautions are physically and emotionally uncomfortable to do'.

As briefly covered earlier in this chapter, both groups described their observation that some health professionals do Contact Precautions better than others. This forms the fifth sub-theme to be presented.

Finally, insights gained from the questions that were asked of health professionals to explore Contact Precautions in the framework of Ajzen's Theory of Planned Behaviour are tendered. Factors such as the individual health professional's prior experience of the impacts of Contact Precautions on themselves, their colleagues, and their patients, that would inevitably have shaped their attitudes and beliefs about Contact Precautions, are important. How those attitudes and beliefs, and how the cultural climate of the workplace affects behaviours such as professional relationships, communication style, and adherence to PPE requirements, are also important in the context of this research. This recognition of the significance of relational autonomy to the research question (Ells et al., 2011) for health professionals and patients, is the value of incorporating Ajzen's (1991) Theory of Planned Behaviour into the theoretical scaffold for the study. These insights are presented as the sixth sub-theme entitled 'Enablers and barriers'.

6.2.3.1 Confusing variation in policy requirements

The first sub-theme identified under the theme of 'Doing Contact Precautions is not easy' is the confusion that arises amongst health professionals when they recognise variation between the infection prevention and control policy requirements for the management of patients colonised with an MRO. Variations in policy requirements were noted by Vincent(D) who had worked in India and the USA and Connie(N) whose early nursing career was in the Philippines. She attributed the differences to the different levels of health service financial and infrastructure resource:

When I first came here that was very new to me.... We don't do swabs a lot, because every test back home you have to pay for it. Private patients always have their single rooms. And, in a public hospital [there will be] 60 people in just one big, shared room.... with no precaution if someone has MRSA or not. And back home PPEs are usually very expensive as well, so we do a

lot of hand washing. That's about it. We only do PPEs, just a mask, when a patient has tuberculosis. That's it... Connie(N).

On being asked how the differences seemed to her she replied:

Well, it – it affected me in a way. Wow, so that's like, it's completely different. Like you know it's a different kind of approach...well-being, it's just – it's really important here and, we have got policies and guidelines that, actually guide us with practice. Over there, um, I mean we have really got good work ethics as well, and I work with really good nurses. But – but we just don't have those resources. Much different, really different... we actually treat everyone the same and, we just – just didn't realise about VRE and MRSA. Connie(N).

After attending medical school in India, Vincent(D) had worked as a doctor in New Zealand and the USA before coming to Australia in 2013. His experience with infectious diseases, especially in India and in the USA, had significantly impacted on him as has been discussed earlier in this chapter. He recalled that hospital policies for the management of people colonised with an MRO differ in Australia compared to the USA. Differences between Australian hospital infection prevention and control policies had also been noticed by Sasha(D) who was confused to find that practices in the paediatric hospital ICU seemed less stringent than for adult patients:

I was really confused as a trainee going “why is no-one concerned about Contact Precautions here? Why is it acceptable that the ICU nurse who gets too hot in her gown can't be bothered wearing it and is in the room all day with the child, to say “I get too hot with that on, I'm not going to wear it?” I was, like, “ah, this would not be accepted in an adult unit”. Sasha(D).

Other health professional participants that noticed variation in the policy requirements between different hospitals were Hayley(N), and Juliet(N) who questioned why different places manage patients colonised with an MRO differently:

I guess at the start it was just - it was just strange and different and - and you think, “why have they got this different policy?” You'd think it would be national for how you handle people with these infections. Juliet(N).

There was also a recognition that even within the same hospital, staff from certain wards or clinical teams may apply the policy requirements more stringently than

others. This was indicated by Bertram(D) saying, 'The main thing was... kind of never knowing when you are moving into a new ward or a new space, who sees things more strictly than others'. Katy(N) an experienced nurse reflected, 'I think they get confused. I think, sometimes, they do honestly get confused with what they should do'.

This study demonstrates that variations in policy between different health organisations, and variations in the way that different health professionals implement Contact Precautions, can create frustration and confusion in patients and staff. Health professionals in this study cite confusion because of variations in the way that MROs are managed in the different places they have worked. This experience reflects the findings of other researchers reporting wide variations in approaches that are taken towards the management of endemic MROs in hospitals across the world (Dickmann et al., 2017; Isenman et al., 2016; Russell et al., 2016; Shenoy et al., 2012; Vuichard Gysin et al., 2018). Whilst some hospitals do not employ Contact Precautions for endemic MRSA and VRE (Dhar et al., 2014; Morgan et al., 2015), others do (Kohlenberg et al., 2011; Morgan & Kirkland, 2012). Authors of these latter studies, and others, have reported wide variation in the component requirements of Contact Precautions, with some policies requiring gloves and gown to be worn for some MROs but not others, and some facilities requiring masks to be worn (Dhar et al., 2014). Substantial variation in policies describing the discontinuation of Contact Precautions in individual patients have also been noted (Shenoy et al., 2012; Sprague et al., 2016). A survey of MRSA management practices in 186 German ICUs found that three key measures; screening, isolation, and decolonisation, were implemented in 17 different combinations (Kohlenberg et al., 2011).

An identified lack of uniformity in perioperative management of patients colonised with MRSA has been associated with a lack of awareness of MRSA guidelines and their implementation (Aslam et al., 2004) and a more unified approach has been suggested as something that would help frontline workers (Sprague et al., 2016). This is an important finding for the local study setting, as well as more broadly, as confusion will likely strongly influence individual health professionals' compliance with Contact Precautions. This is therefore relevant to the previous discussion about the personal and professional autonomy of health professionals, and observations about variable policy compliance triggering inter-professional conflict.

The second sub-theme within this theme is that of wasted time and wasted resources.

6.2.3.2 Wasted time and wasted resources

As previously described, patients being managed under Contact Precautions are accommodated in a single room, and health professionals are required to wear a range of PPE when they enter the room. The sub-theme relating to 'waste' has been incorporated into the broader theme of 'doing Contact Precautions is not easy', because both patients and health professionals mentioned the waste of resources such as PPE, or the time that they considered was wasted because of Contact Precautions. Milo(P) remembered, 'Everybody puts gloves on, it's sort of a waste of gloves and everything else.... There's so much wastage'.

One of the allied health professionals reflected, 'Like, we'll walk in, gown up, and then they don't want to do therapy and it's like "oh, okay", off it goes, in the bin. Those sorts of things. Where is all that waste going for starters?' Judy(A). This participant spent a significant part of her interview discussing her concerns about the use and disposal of PPE. Her distress at the environmental impact of Contact Precautions was apparent. These are just two examples of people who were concerned about the environmental impacts of the manufacture and disposal of waste.

Both patients and health professionals in the study reported in this thesis spoke about their concerns about wasted time and wasted resources such as gloves, that they had noticed in relation to Contact Precautions. Several other studies confirm these perceptions as valid (Barker et al., 2017; Franca et al., 2013; Seibert et al., 2014). For some participants in this study, concerns revolved around a desire to preserve money, and it has been recognised elsewhere that the financial impact of Contact Precautions are significant (Edmond et al., 2015; Roth et al., 2017; Schrank et al., 2019; Tran et al., 2017).

Other participants in this study indicated their concerns that damage caused to the environment was not justified by their understanding of the benefits gained by using the gloves and aprons. The literature does not cover this aspect of Contact Precautions discourse, and a recently published Cochrane review of barriers and facilitators for health professional adherence to respiratory precautions did not identify any concerns about the environmental impact of plastics and PPE (Houghton et al., 2020). This is surprising considering the current global focus on

sustainability, pollution, and climate change. It is anticipated that due to the COVID-19 pandemic, the environmental impact of PPE will become more prominent in contemporary discussions (Zhang et al., 2021). This makes the inclusion of this consideration in the assessment of harm associated with Contact Precautions necessary. In this study the perceived wasted time or physical resources, and environmental concerns, were sub-themes that contributed to a broad consensus that doing infection prevention and control properly is not easy because of the conflict that this waste presented to participants' held values and attitudes (Ajzen, 1991) .

Other concerns that related to waste, were those participants who reflected that Contact Precautions lead to time being wasted. The extra time that donning the necessary PPE takes was cited as a problem, and as a barrier to following Contact Precautions correctly:

...going through the process of putting things on and it becoming so cumbersome on quick rounds you know, when you might be seeing patients for less than 30 seconds, some of them. Or you put the effort in but then not even go in the room because you can't get things done up in time and it is too slow. Bertram(D).

This was a particular issue for junior doctors whose senior colleagues did not allow for the time taken to correctly don and doff the PPE when undertaking ward rounds. Nursing and allied health staff also described time as a barrier to following the policy requirements. However, they were more able to re-organise their work programme, such as the order in which they did patients' observations, to accommodate the policy requirements into their workstreams:

I guess it takes more time and you've got to be a bit better at grouping your interventions with your patient; if you're, you know, doing a wound then you bring all your stuff in and you might do the obs. as well while you're in there because you're just that conscious of that extra bit of time. It probably doesn't take any extra time at all but in your head - it seems like a lot going into each room all the time... Making a plan and just thinking ahead before you go in a room exactly what you need and what the patient might ask you for and is there enough pads in there if they're going to need their pad changed while you're in there and things like that. I guess it makes it hard if someone then buzzes next door or something. You can't just pop your head out and pop

in the next room and you have to take off everything, wash your hands.
Juliet(N).

For many participants, concerns about wasted time or wasted resources, and the environmental impact of the use of increased amount of PPE, will create an internal conflict between their behavioural beliefs (Ajzen, 2019) relating to the environment, and requirements to comply with infection prevention and control policy either as an employee, or as a 'good' hospital patient (Taylor, 1979). For these people, this conflict makes Contact Precautions hard to do.

The third sub-theme impacting on health professionals' capacity to use Contact Precautions correctly and consistently is the policy requirement for people colonised with an MRO to be accommodated in a single room. As the interviews progressed the possible risks and benefits associated with single room accommodation became clear. Both patients and health professionals recognised that single rooms might be good, but not for all patients always.

6.2.3.3 Single rooms are good ... but not for everybody all the time

The need for patients to be managed under Contact Precautions due to their colonisation with an MRO is a well-established feature of hospital infection prevention and control policies. The term 'isolation' is used when the single room is allocated to a person with a communicable disease or as colonised with an MRO requiring Contact Precautions to be used.

The positives

This study has shown that the use of a single room can make Contact Precautions easier for health professionals to do. The physical barrier that the walls and the door provide, can act as a useful trigger to remind them to focus on their hand hygiene and to use the appropriate PPE when going into the room to provide care to the patient. Winton(D) reflected, '... that single room and that label is a trigger to me'.

Health professionals appreciate the extra space that is often available for them to move around the patient when providing care in a single room, '... because they've got a single room that's a little bit bigger, we have a little bit more space'. Asha(A). These benefits have been noted by other researchers (Cole & Lai, 2009).

Many stated that the signage was easier to find and was more likely to be accurate than when Contact Precautions were in place with cohorted patients. Asha(A) spoke about this at some length:

If they're in a single room it's normally pretty straightforward so you've got the sign on the door you know what to do with all the equipment there. On occasions where it ends up someone's in a double room and they might be on the far side or things like that when the wards are pretty under the pump and everything's occupied, or you've got multiples, it seems that there are times that you go, "Oh, oh, what do you mean there was a sign there?" or, "you've got the sign there but where's the gown, where's the glove?". Asha(A).

Some challenges were identified. Health professionals in this study related the importance of being well-organised and in gathering all necessary equipment in the room before starting their patient care, and some reported difficulties in getting help from other staff if extra equipment or assistance became necessary. This finding has been reported elsewhere (Eli et al., 2020).

Six health professionals reflected patients like single room accommodation and most patient participants were initially very happy to find themselves in a single room. Milo(P) said he preferred them and described them as, 'Quieter, peaceful. You get left alone a bit more'. Other patients reported that they found it easier to sleep at night and many valued the peace and quiet that the single room afforded. They also appreciated having more space around them, as well as the privacy of having their own bathroom. Jenny(P) spoke about the advantages of being in a single room on behalf of her husband Bobby(P):

I think the other thing he more than likely appreciates is the fact that he's not sharing a room, so he's not listening to somebody else's TV going at all hours which is what happens. Jenny(P).

Several patients stated their preference to be accommodated in a single room than in a multi-bedded hospital ward. Patients such as Leticia(P) and Amelia(P) valued the peace and quiet and the ability to sleep more easily in a single room than in a shared room. The benefits of greater privacy, intimacy and quietness, solitude, freedom from routine and more freedom from visitors have been outlined by patients in other studies (Barratt et al., 2010; Lupión-Mendoza et al., 2015; Newton et al., 2001). Single rooms can offer a safe haven to some patients (Djurman & Gardell, 2018) and nurses report that patients often actively seek single room accommodation (Mutsonziwa et al., 2021).

The advantage of not being disturbed by other patients' television sets was not specifically mentioned by other patients, but the ability of patients in single rooms to have control over their own television was valued by four of the patient participants. When asked what the availability of the television did for her, one responded, '... it makes me feel more normal. Because I'd be doing that at home'. Valmai(P).

For other patients though, being accommodated in a single room was not a good experience, particularly for those patients who had had protracted or frequent hospital admissions. Health professionals also shared insights and examples indicating that single room accommodation as a requirement of Contact Precautions can be detrimental to patients.

The negatives

The privacy afforded by single room accommodation is not always seen as a benefit. Several patients described feeling lonely. They had also noticed other people, including their health professionals being reticent about entering their room unless for a specific purpose such as administering medication. Patients recalled that staff don't go into these rooms just to have a conversation with the patient, and there is little passing traffic or other opportunistic conversation. Patients felt that their doctors and nursing staff did not go into their room as much as they would have liked. For Sally(P), the presence of a television in her room was not helpful as she couldn't afford the television rental fees:

I was just lying there ... waiting for somebody to come in and speak to me... Nobody to talk to. And, the other thing is, at that stage, I couldn't afford to pay to put the television on. I mean \$10 a day, come on... Sally(P).

Just as patients described feeling isolated, health professionals describe several insights into the negative impact of single room accommodation as a requirement of Contact Precautions.

Whilst there was an agreement amongst health professionals that the single room allowed patients to be disturbed less, particularly at night, and that this was a good thing as it enabled them to sleep better, they held concerns that the lack of social contact during the day might be detrimental. One nurse reflected that most patients like to be in a single room. He was asked if he thought it was necessarily the best for their care, to which he responded:

No, I don't believe so. It can be quite isolating too. You know, as humans, we like to interact and to be then taken away from that interaction, psychologically it can be an impact, I mean a negative impact. Mark(N).

Many health professionals had noticed how patients' feelings of isolation had sometimes extended from loneliness to depression. Some wondered if patients felt embarrassed to be singled out. Others had noticed that patients in single rooms were not able to benefit from the motivating encouragement that others received either passively or actively, by seeing how their peers' recovery compared to their own, or through speaking to them about their progress. Katy(N) an experienced rehabilitation nurse reflected:

...it's just that mateship and comradeship and looking out for one another, and just a little clip here and there, and a witty remark is what they need to just keep them going, you know, through the day. Often people don't have family support that they need, so that's like their little group, their little, you know, family. And they encourage one another, and they're, sort of, almost, sort of, setting goals for each other and rewarding each other and celebrating the good things that happen. And that's what they do as a group. Katy(N).

Other authors have reported that the experience of being accommodated in a single room is not always a positive one (Taylor et al., 2018), and it has been found elsewhere that patients may not divulge being colonised with an MRO in the hope that they will avoid Contact Precautions (Wyer et al., 2015). Patients in other reports have used expressions such as 'closed up', 'shut away', and 'stuck' to describe their single room accommodation (Barratt et al., 2010, p. 57), and in other studies isolated patients described feeling 'sad', 'powerless', 'fearful', 'stigmatised', 'dirty', 'mentally degraded', and 'lonely' (Mo et al., 2019; Mutsonziwa & Green, 2011; Newton et al., 2001). This resonates with the observations of health professional participants such as Vincent(D) who said, 'they're quite stuck inside' and the descriptions of feeling lonely and isolated that were given by patient participants such as Sally(P) and Ronald(P).

During the interviews, some participants made observations about the location or the structural or ambient characteristics of the rooms. This prompted a discussion about what factors might impact on how comfortable a single room might be.

Some rooms are better than others

Some patient participants had been admitted to hospital many times. They were able to describe the attributes of the better rooms against those that had been less comfortable. When asked to describe his hospital room Ronald(P) said:

I mean they're not all as good as this... this has a patio but normally there's a window there... and if you look out, you're envious of what's out there. But here I have a doorway that I can unlock. Ronald(P).

Five patients and two health professional participants discussed the value of having a window with a good outlook and access to natural light. Rooms with a window onto a view or a garden were preferable to those whose window looked out onto a bare roof or wall. On one hospital ward single rooms have high level windows with bars across them because they are designated to accommodate inmates from the local jail if they require hospitalisation. These rooms were noted by two patients who had experienced several different rooms, to be their least favourite. If the window looked out into the ward corridor this was helpful too, as it helped patients to feel connected to the activity and the other people in the ward. The presence of a window, either to the outside, or to the corridor was a factor that made some rooms better than others. According to Sally(P), 'Yeah, you do have some kind of connection, then, with the outside world. But just people walking past will do, you know'. Sally(P).

Most patients mentioned that they appreciated being able to see and hear other people during the day and rooms that are located close to the staff bases were preferred by most patients to those set at a distance away from staff activity. This was not universal though. Amelia(P) said that she was not bothered about being able to see what is going on outside her room but was happy to be near the nurses' station because of her medical needs.

Bobby(P) and Milo(P) both related that being close to the nurses' station meant that the conversations of nursing staff, and the busyness associated with the handover times between nursing shifts interrupted the peace and quiet that they enjoyed as result of being in the single room. This disturbance was attributed to being near to the nurses' station, and in one case, the proximity of his room to the birthing unit:

... you could hear everything of a night. I think it was room 13 or 15 or something, it's right next door to the maternity ward ...there must have been ten born one Saturday night. Milo(P).

Confirming previous reports citing the beneficial impacts of external views of nature, sunshine, and the means for patients and staff to easily communicate (Bartley et al., 2010) this study has confirmed the environmental attributes of hospital single rooms can impact, both positively and negatively, on patients and staff.

Some participants made suggestions for improvement. One patient participant had experienced waiting long periods of time before nurses respond to her call bell:

And I desperately needed to go to the toilet. I was calling and calling and calling. And it was only that, in the room next to me, there was some guy that they'd had a guard on his door and one of the security guards heard me and went and got a nurse. Sally(P).

She suggested that an intercom should be provided to enable staff and the patients who were in single rooms, and unable to get the attention of staff easily as a result, to speak to each other:

Can I, sort of, give you a little idea that I've had?... If there was some way that you could communicate verbally from your isolation room to those outside you know... like an intercom or something... and if it went both ways, even if somebody just said, good morning, Sally, we'll be in, in a while with whatever, you know. Sally(P).

She felt that this would help staff to know how much of an interaction would be required before they entered the room. She mentioned this as she felt that her calls for help were sometimes not responded to promptly because of the need for staff to don their PPE when entering the room to find out what she needed.

The fourth strand of this theme relates to the finding that Contact Precautions are physically and emotionally uncomfortable for staff. The findings that support this sub-theme are now discussed, with the significant emotional impact of Contact Precautions following participants' descriptions of the physical discomforts associated with the application of Contact Precautions.

6.2.3.4 Contact Precautions are physically and emotionally uncomfortable

Several health professionals described the problems they had experienced when wearing Contact Precautions PPE and there were many aspects of caring for a patient in Contact Precautions that were cited by health professionals as leading to physical or emotional discomfort. These physical feelings and emotional responses

to Contact Precautions are presented in the form of tables which are presented in Appendices E, F, and G. They concisely demonstrate the range and extent of these reactions.

The physical impact of Contact Precautions

The most apparent physical difficulties associated with Contact Precautions relate directly to feelings of awkwardness in carrying out clinical work while attired in the necessary PPE. Sara(A) was one of four health professionals who described these physical impacts:

The long sleeve yellow one's quite hot. Is probably the biggest thing in summer. Um, and there's no, sort of, air movement around. You can sometimes feel the sweat dripping down the inside while you're doing your work. Sara(A).

As shown in Appendix E, health professional participants used words such as 'hot', 'sweaty', or 'stuffy' to describe the physical impacts of implementing Contact Precautions. Lindy(N) recounted:

It's not inconvenient as such but we do sweat, and it is sometimes uncomfortable, but I know it's the right thing to do so I don't let it show that I want to get it off and freshen up sort of thing. Lindy(N).

For health professionals in this study, the physical effort involved in donning and doffing (applying and removing) PPE as well as feelings of claustrophobia, overheating, clumsiness, and restricted movement, corroborates the experiences of health professionals in other studies (Eli et al., 2020; Godsell et al., 2013; Seibert et al., 2014) and patients notice this distress (Lindberg et al., 2014).

Most, like Lindy(N), would not breach the policy requirements, however, the physical discomfort associated with frequent donning and doffing of PPE was the rationale provided by the two health professionals who described ways that they had adapted the policy requirements by choosing not to wear gloves or gowns in certain situations:

When someone has a Contact Precaution room it's – it gets tedious to keep taking it off, putting it back on...I'm fine with – with gowning up and gloving up for invasive procedures and all, and observations and all, but not for a constant walk in and out. Toby(N).

In addition to the physical discomfort of wearing PPE, health professionals in this study describe a wide range of emotional responses to Contact Precautions, similar to those reported by others (Andersson et al., 2016; Bushuven et al., 2019). Some health professionals recognise the possibility that Contact Precautions might interfere with optimal patient care because of the barrier that the PPE places between them and their patient. This was felt by both doctors and nursing staff and related not only to the physical barrier afforded by the PPE, but also to aspects such as the emotional response elicited by Contact Precautions in both patients and health professionals.

These emotional responses are illustrated in the form of tables. The first of these, Appendix E, shows the emotions that were described by health professionals whilst implementing Contact Precautions. Appendix F provides the patients' perspective on the emotional impact of being managed under Contact Precautions due to MRO colonisation, and Appendix G presents the health professionals' reports of the emotional responses they have witnessed in their patients.

The emotional impact of Contact Precautions

The implementation of Contact Precautions in the care of patients colonised with an MRO was identified by two health professional participants as presenting a barrier to them being able to effectively communicate with their patients. Katy(N) voiced her concerns about the impact the PPE might have on her patients' ability to trust her as a nurse:

If I'm gowned and gloved, like I'm looking like a hazmat person, it's very hard to break down those barriers like, literally, to get them to talk to me and trust me, do you know what I mean? That's how I feel about it. Katy(N).

Whereas Vincent's(D) concerns were centred on the importance of facial recognition in developing the essential doctor-patient relationship:

If you have the mask on, they're not even seeing your face properly. So that creates a barrier between developing that relationship, because you only have a little time with the patient and then you brought this barrier into it. Um, so you might see them three days later out of isolation, and they have no idea who you are, because you know. They haven't - they haven't really seen you well. Vincent(D).

Listening to the recordings of the interviews enabled the tone of voice that is used, and the way that these comments are made to be considered as part of the analytical process. Vincent's(D) voice is slow and considered as he reveals his concern that the PPE creates a barrier to his therapeutic relationship with his patients. Katy(N) states that it is 'so sad' that patients do not feel the touch of an ungloved hand on their skin. These factors indicate the emotional discomfort felt by these health professionals who are concerned that they may not be able to develop the best therapeutic relationship with their patients when Contact Precautions are in place.

Health professionals also experience emotional discomfort when they do not feel confident in their practical application of Contact Precautions, or when they consider themselves to be in danger through their contact with the patient who is colonised with an MRO. Another area of concern and conflicting allegiances for health professionals that leads to emotional discomfort stems from their empathy and recognition of the negative impact that Contact Precautions may possibly have on patients, from a safety perspective as well as psychologically. This concern was expressed by Bertram(D) saying, 'The patient is looking out and wanting to, you know. It is just a human thing. Wanting that interaction and you have got glass or a barrier that is there and um, – I wouldn't like it'.

The combined impact of these physical and emotional discomforts associated with Contact Precautions, and health professionals' recognition of the potential and actual harm that Contact Precautions may cause for their patients, creates a conflict and an ethical tension for these staff. They feel obliged to follow policy requirements and believe that the policy will effectively reduce transmission of MROs, however they recognise the harms to themselves, their colleagues, and their patients, and the environment that might be caused by their application of that policy.

The finding that health professionals continue to enforce Contact Precautions policy on patients despite recognising a potential for harm indicates a need for infection prevention and control education to include discussions around ethical aspects, and the need to balance benefits and harms in a considered way. Medical ethics is included in the core curriculum for health professionals (Braunack-Mayer et al., 2001; Torda & Mangos, 2020), but this study has shown a possible theory-practice gap in the application of these taught ethical principles to the clinical practice of infection prevention and control.

Despite a stated belief in the value and purpose of Contact Precautions, many of the health professional participants described witnessing their colleagues, or reported themselves, breaching policy requirements. These findings are consistent with many other studies (Arriero et al., 2019; Dhar et al., 2014; Katanami et al., 2018) that report compliance with Contact Precautions policy to be low. Observational studies tend to find lower compliance than self-reports (Jessee & Mion, 2013), and patients and family members notice discrepancies in health professional compliance, which reduces their confidence in the care they are receiving (Djurman & Gardell, 2018; Eli et al., 2020; Heckel et al., 2017). The reasons for non-compliance have been cited as due to complacency or inertia of previous practice (Cabana et al., 1999; Katanami et al., 2018), lack of awareness or lack of agreement with the policy (Cabana et al., 1999), and external barriers such as lack of equipment, cost of equipment, staffing resource, or time requirements (Cabana et al., 1999; Clock et al., 2010; Henderson et al., 2020; Lawton & Parker, 1999; Seibert et al., 2014).

The behavioural reasons for these low compliance rates are not well understood. In one of these cited studies, doctors were concerned that policy compliance would depersonalise the patient doctor relationship. A potential inability to reconcile patient preferences with practice guidelines, and doctors' concerns that patients might perceive the requirements as offensive or embarrassing, were given as barriers to adherence (Cabana et al., 1999).

These reports, and the findings of this study provide a link between the bioethical principle of respect for autonomy and that of non-maleficence, and an insight into some of the conflicts and ethical dilemmas felt by health professionals in their management of patients colonised with an MRO. Ethical conflict is recognised as leading to moral distress in nurses (Rainer et al., 2018), and as will be discussed in Chapter 7, once situations that generate moral distress are recognised, it is important that steps are taken to address the causes of that distress (Beauchamp & Childress, 2013).

The findings of this study indicate that the application of Contact Precautions in the management of patients who are colonised with an MRO has the potential to cause them harm, and this is recognised by health professional participants. The study findings also indicate that the practice of applying Contact Precautions has the potential to create emotional and physical discomfort and can also damage relationships between health professionals, and their relationship with their patients. Health professionals recognise the requirements for them to not knowingly cause

harm or risk of harm, the principle of non-maleficence. There is then an inherent conflict between the beneficent application of Contact Precautions and the principle of non-maleficence which requires health professionals to refrain from acting in a way that causes actual or potential harm (Beauchamp & Childress, 2013).

The interviews with patient participants reveal many negative consequences of Contact Precautions, as presented elsewhere in this chapter, under the themes entitled 'You feel a bit of a pariah' and 'Others need protection... but I need looking after too'. However, not all the patient participants described feeling negatively impacted or compromised by Contact Precautions. The first patient to be interviewed said, 'I, sort of, I felt at peace. I found it - I found it peaceful there'. Leticia(P).

Leticia(P) was interviewed in the double room she shared with another lady in the residential aged care facility where she had lived for some time. She said that she hadn't minded being in a single room in the hospital and described it as feeling 'not much different from here'. Valmai(P), Paul and Julie(P) and Jenny and Bobby(P) were other patients who described their experience in a positive light, using words such as 'comfortable', 'happy', 'peaceful', and 'quiet':

I said "oh, that's nice - it's a private one". I can't stand anybody next door to me chatting away. I thought that was good. And I'm happy. I mean I would ask for a single room, in any case, you know? Valmai(P).

All other patients described at least one aspect of being managed under Contact Precautions in a way that indicated a negative emotional response. Words such as 'helpless', 'isolated', and 'embarrassed' were used to describe their feelings. The table shown in Appendix F presents the range of emotions described by patients.

Whilst only five of the nine patient participants described their experience using words that indicated a negative emotion, almost all the health professional participants recalled having witnessed patients experiencing negative feelings or emotions that the health professional considered were attributable to the Contact Precautions or the patient being colonised with an MRO. Andrew(N) explained, 'A lot of patients panic the first time they find out that, you know, "oh, what's wrong with me, why do I have a bug?"'. The emotional responses, reported by health professionals to have been witnessed in patients being managed under Contact Precautions due to colonisation with an MRO, are presented in Appendix G.

In summary, the negative impacts on patients are sometimes very clear to health professionals. However, none of the health professionals in this study described making an active decision to breach the policy requirements as a result. One reflected on this, saying:

I can't say that I have ever had a situation where I've been truly conflicted about a patient needing to be on contact precautions or isolated or it wasn't significant enough detriment to them that we should over-ride the policy.
Simon(D).

Juliet(N) noted that sometimes doctors would take a patient's notes into the room despite the policy requiring them to remain outside, but it is not clear from the discussion whether this was in response to these doctors having concerns about patient safety, or whether it was merely an oversight on the doctors' part.

The interprofessional conflicts and cultural attributes described earlier in this chapter under the sub-theme of 'hierarchy' lead to health professionals experiencing stress and anxiety. This is demonstrated by their use of words such as 'frustrated' or 'angry' when they see their colleagues breaking the rules or feel unable to follow the policy or to facilitate change, due to perceived or actual pressure from peers or colleagues, or a lack of time or other resources. In the next section of this chapter, the fifth sub-theme under the theme of 'Doing Contact Precautions is not easy' presents the examples given by participants who noticed that some health professionals do Contact Precautions better than others.

6.2.3.5 Some do it better than others

Throughout the interviews many of the health professionals described their observations that at times their colleagues may not implement Contact Precautions as consistently or as effectively as they should. Doctors were cited as less likely than other staff to follow the policy by six of the nurses and two of the allied health participants. Two of the doctors also presented this as a concern. Gelda(D) spoke about her experience of senior medical colleagues not going into the single room to examine patients who are in Contact Precautions, '...they presume that you've gone in and examined them, and you've told them all the relevant things. Or they might go in without PPE'.

Several contributory elements to this sub-theme are identified, including a lack of effective role modelling from senior colleagues or lack of time. One of the nurses stated:

Sometimes you, ah, you've got time constraints obviously, and if you're rushed and more often than not we are run off our feet, short staffed, and you know and so sometimes it slows you down, you take a couple of short cuts, and I'll admit I've taken a couple, and not had gloves. Dan(N).

Here, Dan(N) describes how he had modified his application of Contact Precautions because of being short of time, and that he would not always follow the requirements of Contact Precautions by wearing gloves.

Patient participants observed the different practices they had noticed in their encounters with various health professionals during their hospital admissions:

The younger nurses and the younger doctors, I felt they're more caring. More interested. I think it's because of the fact that I'm in an isolated room because of that bug, and the older nurses who've had more experience know about it and want to keep away from me a bit further, whereas the new system, the new regime, the new generation, they're not worried about – quite so much about it. Bobby(P).

Bobby(P) related the age of the staff to their concern about spending time with him in his room, considering the younger staff were less concerned about his MRO than the older staff. Hayley(N) observed that the younger doctors were the ones most likely to be in a rush following their senior colleagues and as a result breach the policy by taking the computer on wheels into the room:

But most of the time it's the younger ones who are just in a rush trying to follow their reg and they just wheel it in, and then the moment you say something they are quite nice about it. They're like, "Oh, I'm sorry", and they'll wheel it out and stand at the door typing. Hayley(N).

Sara(A) also considered the junior medical staff were those most likely to breach the policy requirements.

As the interviews progressed it became apparent that one of the emerging themes related to the difficulties that were encountered by health professionals in their implementation of Contact Precautions. These difficulties were emerging as barriers to the effective implementation of Contact Precautions. Interpretive description methodology requires further exploration of the themes as more interviews are done, to add more depth to the findings as they materialise. To facilitate this the health professional participants were asked to reflect on the enablers and the barriers to

implementing Contact Precautions effectively and consistently. The purpose of this line of discussion was to identify which aspects of Contact Precautions were particularly challenging to implement (thereby potentially causing negative impacts such as stress and disharmony), and what factors or circumstances make Contact Precautions easy to do. The findings in relation to these reflections from health professionals supported the third objective of the study which was to make recommendations for an ethically sound framework for the management of hospital patients identified as colonised with an MRO.

6.2.3.6 *Enablers and barriers*

Fifteen health professional participants described barriers they had encountered in effectively and consistently applying Contact Precautions, and fourteen reflected on factors that facilitated them in following the policy requirements. The findings from this phase of the study are presented in Table 10 (below) which shows the enabling sub-themes to be availability of equipment; signage and communication; single room; education, and confidence. The sub-themes identified as barriers to the effective and consistent application of Contact Precautions are incomplete or absent information; time; equipment shortages; staffing levels; extra cleaning requirements; worry about how to do Contact Precautions; and concern about wastage. The table shows how many health professionals mentioned each sub-theme.

	Sub-theme	Specific example	Numbers of participants
Enablers	Availability of equipment	You've got gloves in every room, gowns in every room, you've got, you know, alcohol rub on every bed. There's no reason why it can't be done right. Andrew(N) Sometimes it's about clever design. Sometimes it's just about maintenance and running of a unit and how – how – how it's run. Restocking. Winton(D)	9
	Signage and communication	The consistency with things like signage. Asha(A) On the eMR – some triangle, yellow thing. Connie(N) At handover, making sure everyone knows. Connie(N)	8
	Single room	I think in ICU that was easier because the patients for the most part are just in single rooms. Bertram(D) That single room is a trigger to me. Winton(D)	3

	Sub-theme	Specific example	Numbers of participants
Barriers	Education	We're lucky we have [infection control Link Nurse]. Hayley(N) Easy reference tools make a huge difference. Will(N) Regular education from the infection control team. Will(N)	2
	Confidence	I don't see it as being a challenge in any way. Dan(N)	1
	Incomplete or absent information	They think well, I don't know what the patient's got, I don't know why they're isolated. Andrew (N) I don't know where to find [information] exactly. Bertram(D) It wasn't handed over to us so we couldn't take precautions. Dan(N) I'm not always sure how accurate [information] is. Emily(N) They don't see the sign on the door. Hayley(N)	6
	Time	It would just be time. Time and inconvenience. Gelda(D) It's frustrating when you're under the pump time ways. Sara(D)	5
	Equipment shortages	Sometimes I do a lap of the ward to find the equipment. Simon(D)	3
	Staffing	Does the government give us more money for staffing?	2
	Extra cleaning requirements	So you've got your PPE on then you have to take it off, go find the Chlor-Clean, put it all back on to then go and wipe down the equipment. Sara(D)	2
	Worry about how to do Contact Precautions	I think they're very confused. Kit(D) The worry am I wearing everything correctly. Emily(A)	2
	Concern about waste	I've got a big thing on wastage. Judy(A)	1

Table 10. Enablers and barriers to the implementation of Contact Precautions

The principle of non-maleficence places an obligation to abstain from causing harm to others either by directly inflicting harm or by imposing a risk of harm (Beauchamp & Childress, 2013). Adherence to the principle of non-maleficence requires the intentional avoidance of actions that are recognised as potentially causing harm to others. The harm incurred does not necessarily need to be physical harm or injury. Actions that cause discomfort, offence, humiliation, or annoyance, or those that fail to respect a person's dignity are also given as examples of harm (Beauchamp & Childress, 2013; Mitchell et al., 2020).

It is recognised that in healthcare, many actions performed on patients cause harm. Common examples are surgical procedures (that require skin to be cut and pain to occur) to remove diseased tissue, or the administration of an injection to provide medication or immunity to communicable disease. In these cases, the harmful actions are justified because the infringements to the principle of non-maleficence are outweighed by other ethical principles and rules (Beauchamp & Childress, 2013). One method of assessing whether infringement to the principle of non-maleficence is justified is to apply the doctrine of double effect (Beauchamp & Childress, 2013; Hostiuc et al., 2018). This requires the fulfillment of four conditions, as described below.

- The action must be morally good, or at least morally neutral.
- The bad effect should not be intended, but merely foreseen as a possibility.
- The good effect must not be produced by means of the bad effect.
- There must be proportionality between the two effects that justifies the good effect.

The findings of this study support the existing literature (Harris et al., 2019), that suggests the application of Contact Precautions for the management of patients colonised with an MRO meets the first two of these requirements because there is a held belief in the value of Contact Precautions (Godsell et al., 2013). Additionally, the unintended potential harm associated with Contact Precautions is recognised and mitigation strategies included within policy frameworks (National Health and Medicine Research Council, 2019). The findings confirm that in this setting any reduction in MRO acquisition by patients may be a result of them having less contact with their health professionals, as reported by others (Kullar et al., 2016). This creates a conflict with the need for the third condition to be met.

Proportionality is also a concern that has been reinforced by the findings of this study. For some patient participants in this study, the harmful effects of Contact Precautions were striking. Contemporary infection prevention and control literature contains increasing evidence that patient harms associated with Contact Precautions significantly outweigh the harms caused by MRO colonisation or infection. Also, sound evidence that Contact Precautions achieve their aim of reducing MRO infections in patients, and antibiotic resistance more broadly, is lacking (Renaudin et al., 2017; Young et al., 2019).

The harms referred to in the above assessment are largely centred on the patient experience. This study has found several additional factors relevant to the principle

of non-maleficence that add support to the argument that the doctrine of double effect fails to support and justify the application of Contact Precautions.

The application of Contact Precautions in the management of patients colonised with an MRO can lead to physical discomfort and emotional harm in patients and health professionals, can lead to delays and interruptions to optimal care provision, and can also harm professional relationships.

On a broad conceptual level, this recognition by health professionals may create difficulty for them in following the requirements of the policy because of the conflict between the principles of respect for autonomy (their patients' and their own), and non-maleficence, that the application of Contact Precautions in the management of patients colonised with an MRO exposes.

6.2.4 Beneficence: Others need protection... but I need care too

As presented in Chapter 4, the semi-structured interviews included phase-specific questions and topic prompts that related to the theoretical scaffold. Within the bioethical construct, the health professional participants were asked 'Who do you think Contact Precautions are designed to protect?' and the patients were asked to share their understanding about the reason they were in isolation. Health professionals were asked to consider any advantages or disadvantages for patients being managed under Contact Precautions. Patients were asked to describe any changes they had made in response to being isolated while in hospital. Patients were also asked if they had noticed differences in the way that other people treated them before and after their experience of Contact Precautions.

The principle of beneficence obligates people to protect and defend the rights of others, to take positive steps to help others and to promote well-being (Beauchamp & Childress, 2013). This obligation to maximise benefit and minimise harm is relevant to considerations about individual patient care, as well as the wider society and to health service provision more generally (Adams & Miles, 2013). The findings presented in this chapter are centred largely on individuals. However, as was mentioned when considering the bioethical principle of justice, the appropriate prioritisation of healthcare resources, through evaluation of the potential risks and monetary cost of Contact Precautions compared to potential benefits, forms a necessary discussion that links to the principle of beneficence. This assessment of the study findings, and the recent contemporary evidence base, will be used to demonstrate the power that the principle of beneficence has in answering the

research question of whether Contact Precautions are ethically justifiable in contemporary hospital care.

The theme of 'Others need protection... but I need looking after too', describes the sometimes-conflicting balance that participants feel between the need to protect the wider community and the requirement for the individual's needs to be met. There are two sub-themes to this theme: 'The protection of others' and 'Contact Precautions compromise care'. These sub-themes map to the principle of beneficence when participants describe their desire to ensure other people around them are safe by doing all they can to comply with the restrictions and requirements of Contact Precautions. However, when care of the patient is noted to be suboptimal, and this is attributed to the application of Contact Precautions, there is a breach in the principle of beneficence, which if recognised but unchecked may potentially progress to infringement of the principle of non-maleficence.

6.2.4.1 Protection of others

This study found that both health professionals and patients believe that Contact Precautions are necessary and valuable in protecting people from the dangers associated with MROs, and this concurs with other reports (Jessee & Mion, 2013; Morgan & Kirkland, 2012; Morgan et al., 2015). The focus of this protection was for some participants, individuals, and for other participants groups of people such as a family group or the other patients in the hospital. Lindy (N) described her understanding of the need for Contact Precautions as, 'My understanding is that they are really important to prevent those bugs from spreading across the hospital'.

For a few of the participants, the role of Contact Precautions was seen on a broader scale, in terms of protecting the wider community from the MRO or from antibiotic resistance more globally. An example of this was Kit(D) who said, 'You want to try and limit how many of these multi-resistant organisms we have floating around in the community as well, so that's – it's a massive problem'. The health professionals' view of the role of Contact Precautions in protecting others is presented first, and then the patient perspective is described.

The health professional perspective

Amongst health professional participants there was an overarching belief in the value of Contact Precautions as a necessary set of extra protective measures that needed to be applied to patients who had been identified as colonised with an MRO to prevent further spread of the organism. Gelda(D) expressed that:

My understanding of the purpose of contact precautions is to prevent spread between patients, um, because there's very little we can do about people who have already acquired it, but it's to prevent it travelling to neighbours as we work through the hospital and between patients. Gelda(D).

Only one of the health professional participants was not certain about the purpose of Contact Precautions because she had noticed patients being managed under them whilst in a shared room rather than in single rooms. This practice is known as cohorting, which is often necessary when there are more MRO colonised patients than available single rooms in the hospital. Judy(A) described being confused by patients with MRO colonisation being accommodated in multi-bedded rooms:

I'm a little bit confused about that because these patients are also in rooms with other people. So they might be put into the single – especially the VRE, but the MRSA, they can still be in, um, other wards. Judy(A).

All other health professional participants explained their understanding of the purpose of Contact Precautions as being a protective mechanism.

Seventeen of the twenty-four health professionals (ten nurses, four doctors and three allied health) stated that the purpose of Contact Precautions was to protect healthcare staff and twelve of these felt that the precautions were useful and valuable in protecting themselves specifically. Mark(N) commented, 'If I use the appropriate attire well, I am protecting myself'.

Four health professional participants felt that the application of Contact Precautions protected the individual patient from developing further infection from their MRO colonisation. Three of these were amongst the eighteen health professionals (eight nurses, seven doctors and three allied health) who considered Contact Precautions necessary to protect other patients in the hospital from the MRO:

...your set of precautions you, you do to every patient regardless of whether they're infectious or not, so it's, you know, your simple hand hygiene, like kind of stuff, just preventing bugs from spreading from one patient to another, um, though I understand Contact Precautions as taking that once step further in that, there are bugs that can transfer between patients more so than what we would usually worry about, so again, it's, yeah, gowns, gloves, that kind of stuff, ah, just trying to further prevent that spread of bugs. Andrew(N).

Some of the possible adverse events that have been shown to be associated with patients becoming colonised with an MRO, such as longer lengths of stay, and psychological harm, were understood by health professionals. Andrew(N) gave the purpose of Contact Precautions as being to, 'prevent patients staying in hospital longer, prevent worsening health and all that kind of stuff'.

When asked how he felt as a nurse, when he was wearing the gown and the gloves Andrew(N) responded:

Um, feels like I'm protecting myself first but I mean as soon as you put them on you know that you're going in there for a reason and you know that there's a risk that patient could make another patient sicker and can make yourself sick as well.

This response reflects the connection that many participants had made between the role of Contact Precautions in protecting staff from colonisation and by extension that this would in turn protect patients in the hospital.

As presented earlier in this chapter, one health professional was very certain that patients found to be colonised with an MRO should not be offered a choice about the application of Contact Precautions. His justification being the need to protect workers from hazards, 'Ah, no they shouldn't have a choice. No, I do believe that we do have the right to protect workers'. Dan(N).

There is a sense that this obligation for protection should extend beyond the individual healthcare professional. Simon(D) revealed his opinion that Contact Precautions have a role to play in protecting staff members' families from infectious organisms including MROs:

As the father of a three-month-old, I'm very conscious that when I get home from work, you know, I could have things on my work clothes that I've potentially been exposed to, so potentially it goes beyond health care workers and – and to their families as well. Simon(D).

These concerns for their own families were shared by four other health professional participants, with Emily(A) and Connie(N) both reflecting on being concerned when they were pregnant, 'I think when I was pregnant, I was more worried about it all'. Emily(A).

These concerns extended beyond participants' human families for some. Andrew(N) and two other health professionals discussed their concerns about pets possibly

becoming ill through picking up an MRO from them because of their working with patients in Contact Precautions, 'I've got a puppy at home, yeah, I don't want her getting crook'. Andrew(N).

Health professionals' concerns about the safety of themselves, their family members, and their pets, being at risk because of their contact with a patient in Contact Precautions are similar to other researchers' reports (Andersson et al., 2016; Løyland et al., 2016; Lupión-Mendoza et al., 2015; Seibert et al., 2014). Strategies such as wearing PPE over and above the policy requirements have been described in other studies, by staff wanting to protect themselves (Cassidy, 2006; Jackson & Griffiths, 2014).

Although nine of the health professional participants described concerns and worries about the risk of themselves or their family members becoming ill following their occupational exposure to MROs, and to patients being managed under Contact Precautions, none of them reported any instances of infections caused by any MRO occurring within their households. Kit(D) described this in some detail:

I've been admitted to hospital a few times. And I've been screened for – usually, it's just MRSA, I think maybe VRE as well. But, um, and I've always just sort of assumed that I probably would be colonised, because of my – my work. I haven't been. So I've been really proud of myself that I probably maintained good hand hygiene and good contact precautions. But yeah, it crosses my mind. My husband recently had, um, an abscess that he needed draining and it crossed my mind. I thought "ooh, I wonder if he's got a resistant bug?", because he is in contact with me and I'm in the hospital so much. Kit(D).

Not all health professional participants shared these worries. Toby(N) and Will(N) were participants who denied holding any concerns for their own or their family's safety in relation to their contact with people being managed in Contact Precautions because of being colonised with an MRO.

The need for protection of the wider population rather than individual people was mentioned by two doctors who both considered the application of Contact Precautions important in the prevention of antimicrobial resistance. One of these doctors was Sasha(D) who stated the protective role of Contact Precautions as, '...reducing spread of multi-resistant organisms particularly in an era of increasing antibiotic resistance and difficulties treating those infections'.

The patient perspective

Patients who shared their understanding of the purpose of Contact Precautions and the reason for their application were focussed on the protection of particular groups of people, such as infants or staff members. However, Jenny and Bobby(P) considered their purpose to be quite general, demonstrated by Bobby(P) saying, 'I just took it as ... As a precaution...precaution, isolated and we've got to keep you out of the way – so that it doesn't spread through the hospital'.

Four patients interpreted Contact Precautions as being necessary to protect staff from infection. When Leticia(P) was asked why she thought the staff were wearing an apron and gloves when coming onto her single room she responded, 'Probably in case they catch something. I don't know'.

Amelia(P) and Sally(P) were patients whose comments revealed that they felt that staff, including volunteer staff, thought the purpose of Contact Precautions was to protect themselves:

I just think that - sort of - other people's reactions to it, is to sort of, do a panic, you know. "Oh, I've got to protect myself" ... and I can understand that, but they need educating too as to what extent my illness will affect them. Sally(P).

Tricia(P) was not sure whether Contact Precautions were in place to protect her, or to protect other people, and thought that perhaps they were there to protect both her and other people. However, she did understand that their application to provide protection from the MRO that she carries was a necessary part of her hospital admission. Tricia(P) was one of the three patients who felt a responsibility to actively comply so that other people were protected from any harm that she might cause. She expressed this by saying:

I wouldn't want to hurt anyone else or, you know, anyone else like catch it or something from me. That would be the last thing I'd want. So I understand the precautions. Tricia(P).

Children and babies were seen by patient participants as being particularly vulnerable. Four of the health professional participants recalled having conversations with patients who were seeking advice and reassurance about the risk to children who might be exposed to them once their MRO colonisation was known. Katy(N) recounted one of these discussions:

...one of them had an actual grandchild coming in, and they said, like, “Can I cause them any harm by, you know, I – I – should they not come?” That was what they – they were kind of trying to avoid the visit altogether, yet they were looking forward to it, but they didn’t want to put the child in any harm. So, it was basically, you know, “are you sure this is okay for them to come?” And, I said “absolutely”, so they were reassured by that which was good. Katy(N).

Two of the patient participants spoke about having concerns about exposing children to danger. The first was Sally(P) who had become distressed when remembering how she had wondered whether she would ever hug her grandchild again, and the other was Tricia(P), who had been surprised to find herself accommodated in a room close to the maternity unit:

I hear the little babies in maternity, I hear the first cry, it just makes me.... they’re so innocent and pure and ...For me like, I wouldn’t want them to put me in here, so close to them, you know? I don’t know whether they’ve thought that through, like it’s only like a corridor away... Tricia(P).

Patient participants in this study expressed their understanding and belief that Contact Precautions were necessary to protect other patients as well as the healthcare staff from the pathogen that they were carrying. They also described their distress at not feeling able to hug their grandchildren, for fear of infecting them. Despite receiving inadequate communication and sub-optimal care from staff, and experiencing emotional distress, they felt a great responsibility not to infect others or to contaminate their environment. These observations, and commitment to protecting others have been reported by other research groups (Barratt et al., 2010, p. 56; Newton et al., 2001; Skyman et al., 2016; Wyer et al., 2015).

Whilst there was an overall belief and acceptance of the value of Contact Precautions in achieving this objective of protection, there was also recognition amongst both patients and health professionals, that Contact Precautions might also compromise effective patient care.

This acknowledgement was shown to drive conflicting feelings within both participant groups as they grappled with the balance between protection of the individual and the community from MROs and knowing that the restrictions imposed on people might be harmful to them. These conflicting feelings have the potential for triggering moral distress in health professionals trying to balance benefits and

harms to their patient, the wider group, and themselves (Rainer et al., 2018). Patients recognising negative impacts of Contact Precautions might question whether they can trust their health professionals to make the best decisions for them individually, if the safety of other patients is apparently superior to their receipt of optimal care.

6.2.4.2 *But I need looking after too*

The evidence supporting the second part of this theme was found in the transcripts of the health professionals as well as patient participants. Eight health professionals indicated having concerns for their own safety, and their belief in the need for Contact Precautions in safeguarding their health and their livelihood. This is reflected by Milya(N), when she says, 'I need to protect my own health as well, do you know what I mean?'

As was described by Vincent(D) and Katy(N), and presented earlier in this chapter, the application of the requirements of Contact Precautions such as the gown and the gloves, creates a barrier between the patient and their health professional. The results of this study show that this barrier is not solely a physical one. Vincent(D) explained how Contact Precautions might be perceived by members of the medical team as something they need to be warned about for their own safety, and even their career prospects.

After attending medical school in India, Vincent(D) had worked as a doctor in New Zealand and the USA before coming to Australia in 2013. During the interview it was apparent that his experience with infectious diseases in India and in the USA, had significantly impacted on him:

So, most of the med students going through would pick up chickenpox and other things, and so it was a bit of a horrid place to work in... I knew a consultant who died after getting chickenpox and she got varicella pneumonia from a patient. So, ah, we've seen that happen, and so we know that it's not just, um, you know, something in the background, that it can happen.

In the US I have seen much more MRSA infections in patients. Like tremendous numbers. And I had a lot of my patients dying from infections I couldn't treat.

Now when I went abroad, you know, that sort of stuck with me. So, whenever someone is contact precaution, immediately that sets up some sort of a warning that they could have something that could be spreading to you or your team. Vincent(D).

He was a doctor who had experienced New Zealand's policy of screening health professionals for MRSA prior to their employment. He was concerned about the impact on his professional career should he be found to be colonised with an MRO, and strongly believed that Contact Precautions were an effective means of protecting health professionals as well as patients from colonisation. He accepted the potential for their application to create more than a physical barrier between him and his patients. He went on to add:

I think it's a barrier, but, again, if it's good in preventing, um, MRSA from being transmitted to hospital staff or to the patient next door, ah, I'm definitely for it. I guess it's an acceptable compromise. I mean we're all humans and we're biased and so I think - I think the bias comes in the moment you see the signs. So, the impact on the patient is acceptable for the greater good if it's based on good evidence, then yes, I think so. If it's for the good of the general population, the community, and the hospital I think it's acceptable.

I think the fact that I was checked for MRSA before I took that job in New Zealand made me think... and it sparked something in me... "okay, I could have it because I've been in contact with multiple MRSA patients in the US...I could be transmitting MRSA to other people, including my family", which made me a bit upset at the time, because I didn't want to be a person spreading MRSA. Which I didn't have thankfully- um, but that makes you more cautious when you approach these patients, because you're thinking you don't want to pick up anything from them which could adversely affect you... or your children... certainly further down the line. Vincent(D).

Several other barriers to the maintenance of an effective therapeutic relationship, and delivery of optimal care, were identified as being precipitated by Contact Precautions.

Contact Precautions compromise care

One of the key processes to facilitate optimal health care is effective verbal and written communication at all levels and throughout all stages of the patient's journey through the system. As discussed earlier under the theme of powerlessness, both

patients and health professionals described not receiving adequate information about Contact Precautions. Instances of compromise relating to written communication between health professionals that were noted by participants are discussed later in this chapter under the theme of 'Doing Contact Precautions is not easy'. However, there is also relevance here when interruptions to effective communication to patients has been recognised as having a direct impact on the patient's perception of the care that they are receiving. This study has shown that effective verbal and non-verbal communication between doctors and their patients might be compromised when Contact Precautions are in place. The potential for this to adversely affect the necessary therapeutic relationship was recognised:

It is more body language. You know, craning the neck and, um, waiting to, um, you know. Putting their finger to their ear like, "I can't hear you". And then you know, there is obviously something in the way of communication kind of thing that is physical barriers to the patient I suppose. I attribute that I suppose to like the consultant or the registrar reluctance to move into that space. Yep. And not specifically MRSA, it will be VRE – you know you are not – not convinced that that's fulfilling the exact kind of doctor/patient relationship as it should be fulfilled. Bertram(D).

Hayley(N) recalled how she had noticed that one of her patients had felt as though he were being punished. She recounted, 'He understood that it was because of MRSA, but he said it still felt like it was a bit of a punishment because he was away from everyone, and he didn't have anyone to talk to'. Hayley(N).

Katy(N) spoke of how the body language of staff has led to patients apologising for being a nuisance:

I think the – the other thing is too, that, you know, um, staff, they kind of – some staff actually, um, resent having to gown up and glove to go in there. They'll stand at the door and shouting at the person or raising their – well, not shouting as such, but raising their voice and standing there, sort of, hands on the hips. All that body language that makes them look like they're being a pain or they're – they're being, um, you know, a – a bit of a – a nuisance.

Which I think is so disheartening for them. It's – it makes them feel like they can't, you know, call staff, or speak to staff. Or they'll say, which is so sad,

they'll say, "I'm so sorry to stop you or to worry you, I know you've got to do that to come in". Katy(N).

Patients described recognising that they were being treated differently from other patients, and that this had the effect of feeling singled out and isolated. One explained how she felt hurt by the actions of her health professionals standing at the doorway rather than coming into her room, and that this had damaged her confidence in being able to trust them:

I know they're only probably protecting themselves and others, but, sometimes it comes across rude. You can kind of soften it. Not have like three doctors standing at the door and one in here, it's like, that's just real - that's hurtful. You need that trust. You need the trust, like, you know? Tricia(P).

The physical barriers created by PPE and the single room, and the more difficult to describe, barriers created by the perceptions and impressions that are felt as a response to the application of Contact Precautions, were recognised by health professionals. Fifteen of the twenty-four health professional participants described situations where they had identified the application of Contact Precautions as having compromised the quality of care directly provided to the patient. A variety of contributory factors were identified by these health professionals, and these are shown in Table 11.

How care is compromised	Specific example
Verbal and non-verbal communication	Hearing or vision impaired people unable to hear or see their clinical team if they stand at the doorway
	Inability to ensure contemporaneous documentation
	Standing at the door to speak rather than going in
	Fragmented medical team communication during ward round
Tactile	Patients denied the feel of the health professional's un-gloved hand
Delay or interruption to care provision	Health professionals spending less time with patients
	Reluctance to examine patients
	Reluctance to remove dressings
	Scheduling at the end of operating lists
	Scheduling physio at the end of day – tired patients are less likely to benefit
	Observations are done less often

Table 11. Examples of compromised patient care

Whilst five of the patients denied having noticed that their care provision was any different than before their MRO colonisation was identified, four reported that they had noticed significant changes in the way that their care was provided, whilst being managed under Contact Precautions.

Milo(P) had noticed his food being left outside his room rather than being brought to his bedside as would have happened previously. Ronald(P) is visually impaired. He described how he had difficulty in seeing the people trying to converse with him as they stood at the door to his room, and that he was not always sure who he was talking to:

I can't read a newspaper; I can't read a book. I mean I don't know half the doctors I am talking to. When I changed doctors... you wonder what is going on. Like, uh, the regular doctor I have checking me, is - no longer here. This is a different doctor; I don't know who he is. No one told me who he is. I mean he was never introduced. And he stood about six feet away while he would talk to me. Ronald(P).

Both Milo(P) and Ronald(P) recounted these experiences in quite a matter-of-fact way during their interviews. However, for the other two patients who had noticed differences and deficiencies in the way their healthcare was provided, this was very distressing.

Sally(P) described her experience when waiting for an X-ray in the medical imaging department at one hospital:

I go for X-rays ... I couldn't be in the waiting area with other people. And where they used to take the patients then in that hospital there was like, um, an area probably eight feet wide, down the side of the reception desk but it was walled off on three sides. And, uh, they'd park me in there ... but it was also the area where they'd put the bags of rubbish. You know, and then somebody would come from a door in the bottom of the area and get the bags of rubbish. One time I had to use the bathroom there and I got told off for using the toilet. Sally(P).

Tricia(P) started to cry during her interview as she described her commitment to protecting other people but feeling that she also needed care:

It would break my heart if I got someone else sick or something, I don't know, I wouldn't, I wouldn't want that, but it does make me feel a bit like..... I

wonder if some of the nurses don't want to look after me because they're scared of catching something, you know, when they get, some into a shift and they think, "oh, well, we've got to look after her" and they don't want to, and I try and be as nice as I can, because I really like the staff here [crying]..... I just don't want anyone else to get hurt, but then I need looking after. Tricia(P).

These examples demonstrate the various ways in which the application of Contact Precautions in the management of patients colonised with an MRO, can compromise patient care, and that this can have a profound impact on patients.

The finding that Contact Precautions had compromised standards of care in this study setting is supported in the qualitative (Barratt et al., 2010) and the quantitative evidence base (Livorsi et al., 2015; Mehrotra et al., 2013; Purssell et al., 2020), often resulting in decreased patient satisfaction (Guilley-Lerondeau et al., 2017; Morgan et al., 2009; Stelfox et al., 2003). The importance of touch in healing, empathy and support was recognised by participants in this study as being compromised by Contact Precautions, and this also has been reported by others (Seibert et al., 2014; Sweeney, 2016).

The study findings presented in this chapter illustrate several ways in which patients' healthcare journeys might be interrupted because of being managed under Contact Precautions. The impact of these on equity of healthcare provision, and stigmatisation and discrimination were also discussed in the previous section of this chapter which considered how the study findings relate to the principle of justice. Here though, those findings illustrate that in this study setting the obligation to protect and defend patients' healthcare rights (Australian Commission on Safety and Quality in Healthcare, 2020), and to remove conditions that might interfere with optimal care, have not been met for patients colonised with an MRO.

Participants described their perception that health professionals spend less time with these patients, and that there is a reluctance to examine patients, or to remove dressings. This study has found that the presence of the MRO may take precedence over other more holistic patient-centred factors when decisions are made about the scheduling of activities such as physiotherapy or elective surgery. The result of this is often that patients in Contact Precautions are scheduled at the end of the day which may not be the optimal timing, and not their preference. These findings are reflective of several other researchers who found that isolated patients receive fewer visits from their health professionals, who spend significantly less time with them

than with non-isolated patients (Dashiell-Earp et al., 2014; Evans et al., 2003; Morgan et al., 2013; Stelfox et al., 2003). Delays in ward admission from the emergency department and cancellations of procedures, or rejections of referrals for rehabilitation have also been described (McLemore et al., 2011; Raupach-Rosin et al., 2016; Rump et al., 2017).

This theme, 'Others need protection... but I need looking after too' also relates to staff. In addition to the concerns about possible harm due to patients becoming colonised, the findings reveal the stress health professionals experience when they notice the impact Contact Precautions are having on their patients' care delivery or wellbeing. Two health professionals described feeling anxious or concerned due to their recognition of the potential for medication errors, or the difficulties they had encountered in maintaining contemporaneous documentation.

One of the allied health professionals recognised with disquiet that she was reticent to spend as much time with patients in Contact Precautions because of the worry she felt about applying the precautions correctly. Nursing staff also reported having difficulty in seeking help for activities such as complex dressings, or having extra equipment provided while Contact Precautions are in place. Hayley(N) described her experience of seeking help from her colleagues when nursing a patient being managed under Contact Precautions:

...you would call out to them, but they wouldn't be willing to come in as quickly. Whereas like any other dressing, you wouldn't leave it anyway if it was open and you would call out to people, and they would come really quickly and put it on your trolley. Whereas then when they knew they'd have to like gown and glove I found that was a bit trickier. Hayley(N).

These responses demonstrate health professionals feel concerned about standards of professional care being compromised by Contact Precautions and indicate their wellbeing might be affected by the resultant conflicts with their professional and personal values. These emotional impacts are described more fully later in the chapter.

Within this theme, some paradoxes are revealed. Participants from both groups described their understanding of the need for Contact Precautions as being a necessity in preventing the transmission of MROs between people. However, some patients' trust in Contact Precautions was conflicted if they noticed that they were treated differently from other patients. Health professionals discussed their

concerns about becoming colonised themselves, and the need for them to be protected in order that their own family, particularly children, would not be at risk, but recognised conflicts with their personal and professional values when they noticed patient care being compromised by these trusted precautions.

Sally(P) started to cry when she recalled how she felt when a nurse told her the magazines she had been reading could not be placed in the communal sitting room for other people to enjoy, because of her MRSA colonisation. Her words revealing her feelings and concerns about the safety of her family, 'Tainted. Will I ever kiss my grandchildren again? You know, dare I?' Sally(P).

Sally(P) was one person who had concerns that people who had contact with her may be at risk of harm. These concerns form the basis of the third of the four main themes identified in this study; the demonstrated belief in the role of Contact Precautions in protecting people from danger that was held by most of the participants, alongside a call for the needs of the individual patient or staff member to be provided without compromise.

The many examples of ineffective communication, that were found to be associated with Contact Precautions, were discussed in detail earlier in this chapter in the context of the principle of respect for autonomy. Many of those identified barriers to communication also impact on the quality of care-provision. The importance of communication in effective therapeutic relationships is recognised, and health professionals in other studies have described being conscious of the negative effects of Contact Precautions on patients, reporting that having recognised the risks they actively seek ways to develop patient rapport (Godsell et al., 2013). There is evidence in this study of health professionals doing this. Examples are the nurse who brought books into the ward for Sally(P) to read, and the cleaner who spent long periods of time chatting with Ronald(P). Unfortunately, these examples are memorable to these patients because these small acts of kindness were exceptional events that differed from their usual experience of being in hospital. For both these patients, and others in this study, the overall experience of Contact Precautions was unpleasant and traumatic.

Within the principle of beneficence, there is a counter-obligation known as the obligation of reciprocity which suggests that people who are in receipt of benefits (such as the benefits of public health care) ought to promote its interests (Beauchamp & Childress, 2013; Lee, 2012). In the context of this thesis, this can be interpreted as implying that patients who are in receipt of public health care have a

duty to accept the restrictions of Contact Precautions. As a consequence of the care they are receiving, they incur an obligation to help or benefit the other patients on the ward, and the staff who are caring for them. Whilst this was not a prominent finding amongst health professionals, this was implied by one of the doctors.

The comments made by Tricia(P) when she recounted how the nurses are nice, and she did not want any harm to come to them even though she was in extreme distress, suggests her enactment of reciprocity as an obligation of beneficence. Although this obligation was not explored in detail in this study, participants' subliminal recognition of this obligation, which is integral to all parts of social life, will likely have influence on their attitudes and behaviours in relation to Contact Precautions (Ajzen, 1991). The obligation of reciprocity likely explains the commitment to Contact Precautions from both participant groups despite recognition of the harm potentially caused, and might also partially account for the compliant 'good' patient behaviours (Taylor, 1979) that were found in patients subjected to Contact Precautions.

The principle of beneficence involves people making positive actions and behaviours that remove or minimise potential harm and that actively help others. In certain situations, such as the emergence of a novel pathogen where risks cannot be quantified, but it is agreed that control measures are necessary, a precautionary approach to implementation of beneficence by introducing control measures is the only option (Beauchamp & Childress, 2013). As previously described the application of the precautionary principle, as a necessary act under the principle of beneficence, was the rationale for establishing Contact Precautions in the 1980's as a policy requirement to counter the threat of antibiotic resistance (Harris et al., 2019). At a time when MROs were emerging as a significant threat to healthcare safety, Contact Precautions would have seemed a logical response. Their objective was to achieve the public health imperative to prevent harm to individuals at risk of MRO infection (meaning other hospital patients, and healthcare staff) and to lower health risks within the population (in this context, to reduce rates of antibiotic resistance globally).

There has been significant debate in public health ethics, relating to the question of whether, and to what extent the precautionary principle should be followed (Callahan & Jennings, 2002). This debate is particularly pertinent to MRO management in hospitals now that more is understood about MRO pathogenesis, transmission, epidemiology, and treatment options (Aboelela et al., 2006; Cohen et al., 2015; Djibre et al., 2017; Karampatakis et al., 2018; Landelle et al., 2013; van Dijk et al., 2020) as well as an increasing understanding of the financial costs (Roth

et al., 2017; Schrank et al., 2019; Tran et al., 2017) and the potential for negative impacts on patients that arise when Contact Precautions are applied (Abad et al., 2010; Day et al., 2012; Harris et al., 2019; Gandra et al., 2014; Karki et al., 2013; Morgan et al., 2009; Purssell et al., 2020).

Justification of the precautionary approach requires rigorous interpretation of the principles of beneficence and non-maleficence (Beauchamp & Childress, 2013). Whilst it usually requires the initiators of the action taken to show that the benefits outweigh the dangers, it often happens that when concerns are raised that the risks might outweigh any benefits, the proponents of that view are those that are required to provide their evidence and a strong argument (Callahan & Jennings, 2002).

In essence that is the purpose of this thesis: to provide a reflective examination and careful consideration of scientific, social, psychological, and cultural ethically relevant perspectives relating to Contact Precautions, as informed by this interpretive descriptive study.

6.3 Balancing the bioethical principles

The objective of public health communicable disease control is to improve population health and protect communities from infection. In the context of population health, it is widely recognised, understood, and expected, that in certain situations such as communicable disease outbreak, health authorities and governments will require autonomy-limiting actions to be taken to control disease transmission. These actions are pivotal components of a successful public health response (Webb, 2015). However, they are not easily transferable to the practice of hospital infection prevention and control where promotion of healthcare rights, and an individualised approach to healthcare delivery is expected by patients and clinicians alike (Australian Commission on Safety and Quality in Healthcare, 2020; Bryan et al., 2007; Millar, 2009).

Hospital infection prevention and control practice requires a focus on the optimal care of individuals in a context of protecting community members (other patients and staff) from preventable harm (Bryan et al., 2007; Millar, 2009). Any measures that are taken to prevent possible harm (from a transmissible infection for example) must be proportional to the risk of harm (Lee et al., 2012; Resnik, 2004). It is also important that a holistic approach is applied to the risk assessment as it is recognised that adoption of a precautionary approach may lead to examination of a

narrow set of risks while ignoring other risks and potential benefits (Beauchamp & Childress, 2013).

Challenges to the personal autonomy of patients and health professionals, and the resultant psychological harm must be balanced alongside the fairness of subjecting patients to restrictions that are increasingly questioned as an effective and appropriate means to prevent MRO transmission in hospitals. The study has confirmed that several patients subjected to Contact Precautions as a means to manage their MRO colonisation, recognise their status as victim as well as vector (Francis et al., 2005). This study has also shown that patients and health professionals recognise harms that are broader than those imposed on individual people. Environmental, cultural, and financial harms were cited by several participants as important.

The following figure illustrates the benefits and costs of Contact Precautions as experienced by participants in this study, and as described in the empirical evidence base. In summary, the benefits afforded by the allocation of a single room to patients is outweighed by the several physical, psychological, organisational, and environmental harms associated with Contact Precautions.

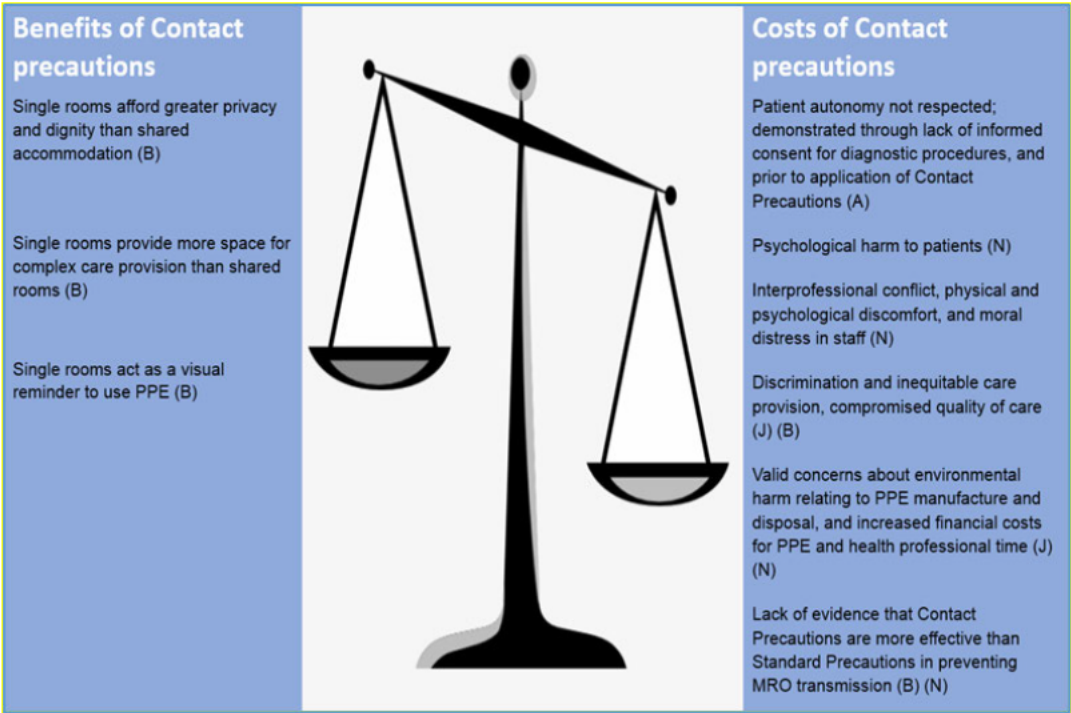


Figure 6. Benefits and costs of Contact Precautions according to participants' responses and empirical evidence base
B=beneficence, A=respect for autonomy, N= non-maleficence, J= justice

As an approach to making decisions under ignorance, the policy of Contact Precautions was a valid approach to the management of patients colonised with an MRO in the 1970s (Bryan et al., 2007; Garner & Simmons, 1983; Resnik, 2004). However ethical healthcare requires ongoing reflective examination of customary practices so that new insights can be incorporated into consideration of emergent scientific, social, psychological, and cultural perspectives when seeking ongoing justification of the precautionary measures (Beauchamp & Childress, 2013).

Consideration of the research question, 'Are Contact Precautions ethically justifiable in contemporary hospital care?', requires an assessment of how the practice measures up against current moral theories, and codes. This study has taken a pluralistic approach to this assessment, recognising that in the healthcare setting, the outcome of such assessments will change over time, and in response to inductive appraisal of prior practice and outcomes (Beauchamp & Childress, 2013).

6.4 Chapter summary

The aim of the research reported here was to answer the overarching question which asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' by exploring the impact of Contact Precautions on patients and hospital staff and to describe and interpret participants' experiences in the context of a bioethical framework. As presented in Chapters 3 and 4, resolution of the research question was supported by the inclusion of secondary questions tailored to each phase of the study.

This chapter has presented the findings of this interpretive description study through analysis of the insights provided by 9 patients and 24 health professional participants in semi-structured interviews. Four main themes were identified, each with sub-themes that relate the findings to the perspectives of both groups of participants, and to bioethical principles. These findings have been discussed in the context of the contemporary evidence base to reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions. The chapter has met the second research objective which was to discuss these findings within a bioethical framework with a view to exploring the ethical implications. Through these discussions and a process of balancing and intuitive reflective equilibrium challenges in managing conflicts and tensions

between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions, have been identified.

This study has found numerous examples where the application of Contact Precautions in the management of patients colonised with an MRO creates conflict in maintaining the bioethical principles of respect for autonomy, justice, beneficence, and non-maleficence. The beneficial impacts of single room accommodation have been shown to be significantly outweighed by the negative impacts precipitated by Contact Precautions. Accordingly, this study has found that Contact Precautions are associated with infringements of all four principles of biomedical ethics, as shown in Figure 6 and summarised below.

Respect for patients' autonomy is compromised when they are not provided with appropriate or timely information relating to the collection and testing of laboratory specimens, the possible implications of findings including the sharing of their medical information for surveillance purposes, and the imposition of Contact Precautions on those found to be colonised with an MRO. Health professionals experience a lack of respect for their personal and professional autonomy (Pellegrino, 1994) when faced with confusing variation in policies and information sources, and when colleagues overtly or subliminally impose upon their held attitudes and cultural beliefs relating to Contact Precautions.

The principle of justice is compromised when restrictions are placed upon patients unfortunate enough to be found to be colonised with an MRO. Not all patients are screened for MRO colonisation, and individuals found to be colonised are treated differently from others and experience suboptimal care and discrimination despite not having influence over that status. The costs of Contact Precautions are noteworthy, and include the manufacture, purchase, and disposal costs for PPE. This expenditure likely diverts healthcare funding away from other activities.

The concept of harm, in the context of the principle of non-maleficence, is not limited to physical injury or severe psychological damage (Beauchamp & Childress, 2013; Mitchell et al., 2020). This study has found several examples of harm being caused to health professionals and well as to patients, through the application of Contact Precautions. The implementation of these measures can be physically and psychologically uncomfortable for health professionals, and patients who feel that their autonomy is not being respected and do not understand the reasons for restrictions being imposed on them, feel powerless and describe feelings of distress and discomfort as a result.

The scale of these harms on patients has been trivialised by others (Santos et al., 2008; Voo & Lederman, 2020), but has been found to be significant in this study.

A consideration in the assessment of harm incurred through the application of Contact Precautions, that has been introduced by participants in this study, although not elsewhere, relates to the environmental impact of the manufacture and disposal of the PPE used for Contact Precautions. Internal conflict arising from concerns about the financial and environmental costs of PPE consumables, has been found in both patients and health professionals.

The relevance of non-maleficence to the research question was demonstrated in some less predictable ways. For some patients, the privacy and seclusion offered by being accommodated in a single room was appreciated, and their experience was a positive one. The physical attributes of the room were an important factor, however. For others, their single room prompted feelings of loneliness and reinforced their 'differentness'.

Contact Precautions are found to be difficult to do, not because they are particularly complicated to enact, but because of the physical discomfort, ethical dilemmas, and moral distress that they can trigger in health professionals.

The principle of beneficence establishes an obligation to promote wellbeing by maximising benefit and minimising harm that applies as much to broad health policy and service provision as it does to the care of individual patients (Adams & Miles, 2013; Beauchamp & Childress, 2013). Single room accommodation was deemed supportive of improved wellbeing for some patients, but not all. Both health professionals and patients described a commitment to safeguarding others from the risk of becoming infected with an MRO through contact with a colonised patient and believe Contact Precautions to be an effective way of achieving this aim. Accordingly, patients tolerated notable discriminatory and stigmatising behaviours and actions leading to interruptions to their expected healthcare journey, possibly through their desire to be a 'good' patient, and their societal values relating to beneficent obligations of reciprocity.

Importantly, justification for the application of Contact Precautions in the management of hospital patients requires a balanced consideration of these findings and an appraisal of the value of these measures in contemporary hospital infection prevention and control policy and practice. Through this process, in the final chapter, conclusions are drawn that inform and deliver the third study objective

which is to make recommendations for ethically sound improvements in the care of people colonised with an MRO.

This chapter has described how the study has facilitated clarity around the impact of Contact Precautions on a group of patients and health professionals, from a perspective of the principles of biomedical ethics. The findings reveal infringements relating to all four of these principles, impacting to a lesser or greater extent to both groups of participants. It has also found that obligations to remove conditions that might interfere with optimal care, and to protect and defend patients' healthcare rights (Australian Commission on Safety and Quality in Healthcare, 2020), have not been met for patients managed in Contact Precautions.

Infringements and violations are acceptable if they can be justified through transparent and rigorous expert interpretation of social, psychological and cultural factors, with particular focus on the principles of beneficence and non-maleficence (Beauchamp & Childress, 2013). This research has provided a strong basis on which to assess whether the identified infringements can indeed be justified, with considerations of individual and distributive justice also taking a prominent position in this evaluation. This assessment will be presented as the study conclusion in the final chapter, alongside recommendations for infection prevention and control policy and practice, and recommendations for further research in this important area.

Chapter 7: Conclusion

7.1 Introduction

The aim of the research reported here was to answer the overarching question which asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?' by exploring the impact of Contact Precautions on patients and hospital staff and to describe and interpret participants' experiences in the context of a bioethical framework.

The study findings presented and discussed in Chapter 6 provide significant insight into the ethical standing of Contact Precautions, illuminated by the ethically relevant social, cultural, and psychological experiences of patients and health professionals who have been exposed to them.

In this final chapter, the thesis is concluded by answering the research aim and question. In drawing a conclusion and answering the research question, the empirical evidence relating to the efficacy of Contact Precautions in preventing transmission of MROs in hospitals, and in reducing the global problem of antimicrobial resistance, has been considered alongside the study findings. This final chapter considers the limitations of the work and proposes some recommendations for infection prevention and control practice, policy, and research.

7.2 Ethical implications and the research question

The aim of this study was to explore the impact of Contact Precautions on patients and hospital staff and to interpret participants' described experiences in the context of a bioethical framework that is familiar and relevant to healthcare contexts; the four principles of bioethics (Beauchamp & Childress, 2013). Specifically, the study aimed to build an understanding of the impact of Contact Precautions as they are practised in a group of three public hospitals in eastern NSW, and to make recommendations for the development of ethically superior processes for the management of people found to be colonised with MROs in hospitals.

Interpretive description was the chosen methodology, because it was developed and designed to provide insights into questions relating to the translation of healthcare theory to improved clinical practice (Thorne, 2016). These attributes are shared in many respects with the positive aspects of empirical bioethical research (Strong et al., 2010), making it an ideal approach for this study.

The Theory of Planned Behaviour (Ajzen, 1991) was included within the theoretical scaffold because of its power in revealing attitudinal and cultural enablers and barriers to an individual's decision to act in a particular way. This was particularly useful in revealing findings relating to the principle of respect for autonomy (in a relational sense (Ells et al., 2011)), amongst health professional participants.

The research question asked, 'Are Contact Precautions ethically justifiable in contemporary hospital care?'. Four subsidiary questions were used to build the answer to this question. The first of these was:

Q1. What do the experiences of health professionals and patients reveal about what is ethically relevant in the care of patients who are colonised with an MRO being managed under Contact Precautions?

Interpretive descriptive analysis of the study findings identified four broad themes which were formulated through description, analysis, and interpretation of participants' interview transcripts (Liamputtong & Serry, 2013; Thorne, 2016).

The answers to question 1 are provided by these themes. The experiences of the participants in this study demonstrate feelings of powerlessness amongst patients and health professionals exposed to Contact Precautions. Feelings of stigma and unfairness were apparent, particularly amongst patients who noticed they were being treated differently from other patients on the ward. There was a strong sense amongst both groups of participants, that Contact Precautions were a necessary safeguard against MRO acquisition, alongside a recognition of their potentially harmful effects. Many practical and resource-related challenges were identified as barriers to the effective application of Contact Precautions within infection prevention and control policy.

Discussions within Chapter 6 mapped those themes to the bioethical principles of respect for autonomy, including that of health professionals; justice; beneficence and non-maleficence. A process of reflective equilibrium balanced the benefits afforded by the allocation of a single room to patients against the several physical, psychological, organisational, and environmental harms associated with Contact Precautions. This has enabled the participant's descriptions of their experiences of Contact Precautions to be interpreted into an understanding of the ethical tensions that Contact Precautions present. This mapping and balancing of the costs and benefits of Contact Precautions as experienced by the participants in this research has provided insights into the second and third subsidiary questions.

Q2. How do the ethically relevant features of patients' and health professionals' experience of Contact Precautions map to bioethical principles (Beauchamp & Childress, 2013)?

And

Q3. What are the challenges in managing conflicts and tensions between bioethical principles when hospital patients colonised with an MRO are managed under Contact Precautions?

Several bioethical conflicts and tensions have been revealed by this study. The purpose of this chapter is to summarise the identified ethical challenges associated with Contact Precautions and make recommendations for improved policy and practice. In doing so this chapter answers the fourth subsidiary research question;

Q4. If there are challenges, what changes could be made to appropriately resolve these conflicts and ensure that these patients' hospital admission is managed in an ethically defensible way?

Balancing those conflicts and tensions through a reflective approach, as described in the next section of this chapter, has provided the answer to the overall research question. The final section of the chapter presents recommendations for change in policy and practice.

The objective of justification in ethics is to present sufficient evidence and rationale for the argument that is being made. Justification can be provided through examination of situations using a variety of models that approach the question from differing perspectives (Beauchamp & Childress, 2013; De Vries & Van Leeuwen, 2010; Kolmes, 2016). However, prioritising and selecting the right set of facts to measure against the right set of rules, is problematic in healthcare (Beauchamp & Childress, 2013) as is now explained.

From a public health ethics perspective, restrictive measures that impact on individual rights must meet standards relating to public necessity, demonstrated effectiveness and scientific rationale, reciprocity, justice, and fairness (Desclaux et al., 2017). Obligations of beneficence extend beyond the care of individuals to the entire enterprise of healthcare delivery and should aim to maximise benefit whilst minimising harm (Adams & Miles, 2013). Restrictions should be in proportion to the risk (Desclaux et al., 2017), and be limited to the minimum necessary for successful effect. From a utilitarian perspective, risk management measures should produce

the maximal balance of positive value over disvalue (Beauchamp & Childress, 2013) and from libertarian theories of justice, individual liberty rights must be protected where possible (Beauchamp & Childress, 2013). Proponents of the Aristotelian approach argue that equals must be treated equally, which raises questions about how equality is measured and designated (McKeown & Learner, 2009), whilst followers of Rawlsian theory state that people should not be denied social benefits (such as healthcare) on the basis of disadvantageous properties (such as MRO colonisation) over which they have no control (Beauchamp & Childress, 2013).

In addition to showing how ethical justification for Contact Precautions is challenged because of the many conflicts with moral and ethical theories that they impose, this study has found that neither the precautionary principle, nor the doctrine of double effect, can support the implementation of Contact Precautions for patients colonised with an MRO. The use of the theoretical scaffold of the principles of biomedical ethics has enabled consideration of the research question to be approached inductively rather than deductively. This bottom-up model is recognised as a pragmatic approach in examining ethical challenges in the healthcare setting (Beauchamp & Childress, 2013).

The principle of beneficence was the driving force behind the introduction of Contact Precautions for preventing MRO transmission in hospitals. Expert advisors to the Centres for Diseases Control (CDC) in the 1980s believed that these restrictions were necessary and proportional to the potential significant risk that MROs posed to individuals in hospital (Garner & Simmons, 1983). The assumption was that Contact Precautions would prevent individuals from becoming colonised with an MRO, and that this would protect them from developing a significant and untreatable infection. Another expectation was that Contact Precautions would be effective in slowing the advances of antibiotic resistance, recognised as a significant global threat. At the time they were introduced, the increased costs and various harms that are now known to occur were foreseen, but over-isolation was stated to be preferable to under-isolation, and control was considered both medically and ethically necessary (Garner & Simmons, 1983; Wenzel et al., 1991). Over time, research has enabled an improved understanding of MRO evolutionary pathways and transmission dynamics and brought improved diagnostic and therapeutic options. The efficacy of Contact Precautions in reducing MRO transmission in hospitals remains unproven (Edmond et al., 2015; Fätkenheuer et al., 2015; Haessler et al., 2020; Khader, Thomas, Stevens, et al., 2021; Kleyman et al., 2021; Martin, Rubin, et al., 2018; Renaudin et al., 2017; Schrank et al., 2019; Young et al.,

2019), and harms such as those revealed by this study have been recognised by others (Eli et al., 2020; Harris et al., 2019; Mehrotra et al., 2013; Purssell et al., 2020).

The need to balance the best interests of individual patients against promotion of the public good remains a mainstay of ethical infection prevention and control principles (Harris et al., 2019; Herwaldt, 1996). In addition to this driver there is an obligation for healthcare organisations to safeguard the physical and psychological wellbeing of their employees (Bushuven et al., 2019; Morrow et al., 2016; Sexton & Orchard, 2016). This study has demonstrated how Contact Precautions for the management of patients found to be colonised with an MRO can trigger physical and psychological discomfort in both patients and health professionals. Despite this there is a trust that the precautions are a necessary and helpful in reducing the risk of harms caused by infection. Some participants were concerned about harms not related to infection, such as environmental impact of PPE, and the financial impact of the policy on the wider healthcare system. These are all factors that contribute to balancing our obligations to individual patients and health professionals against our responsibility to safeguard the interests of the broader community and the healthcare system as a whole.

Justification of any ethical question involves consideration of the positioning of the situation against the four principles. This is necessarily a dynamic environment because, as understandings grow and empirical findings emerge, the prioritisation and positioning of each principle will change. As a result, considered moral norms, will over time become nothing more than 'provisionally secure points in a cultural matrix of guidelines' (Beauchamp & Childress, 2013, p. 398).

Crucially, application of Belmont principles to policy could begin with a reflection of what our patients might say of the policy (Adams & Miles, 2013). This study indicates, in agreement with many others, that for most patients, Contact Precautions are uncomfortable and sometimes traumatic. Further, this work has added to the existing literature base by demonstrating the negative impact that Contact Precautions can have on health professionals, and by introducing the insights of both groups of participants into resource-related aspects such as environmental concerns relating to PPE, and the financial burden imposed by Contact Precautions.

In this study setting, patients and health professionals accept these impacts because they believe Contact Precautions are effective in reducing MRO transmission and therefore have value. However, balancing the identified risks and

resource impacts against proven and consistent benefits as reported in the accumulated evidence base, indicates that this is not the case (Hossain et al., 2020; Purssell et al., 2020; Tran et al., 2017). Within healthcare, and the field of infection prevention and control, prospective quantitative and replicable evidence is considered more highly than other types of data (Evans, 2003; Jones & Podolsky, 2015). However, as demonstrated by the evidence wars (Prasad & Ioannidis, 2014) that continue to contradict and confound those who have previously questioned whether Contact Precautions should be continued (Cohen et al., 2015), statistically provable evidence alone cannot provide the answer. These evidence wars have been noted in ethical discourse unrelated to the field of infection prevention and control, with some commentators assertively challenging specialists in infection prevention and control policy and practice to address the prevailing inertia of practice (Prasad & Ioannidis, 2014).

The question of whether Contact Precautions are ethically justifiable in contemporary hospital care deserves consideration through a process described as reflective equilibrium (Beauchamp & Childress, 2013). This is where empirical data is considered alongside theories, principles, and moral judgements to enable meaningful dialogue between theory and practice (De Vries & Van Leeuwen, 2010). This study has made the significant shift from an empirical consideration of single factors such as the efficacy of Contact Precautions, their impact on adverse patient outcomes, or the degree to which stigma is experienced, to one that holistically seeks ethical justification for the practice.

The most significant and valuable property of this study is its contribution in applying the principle of beneficence to the assessment of the costs, risks and benefits associated with Contact Precautions (Beauchamp & Childress, 2013). This study's use of interpretive description to explore participants' experiences from a pluralistic bioethical perspective, has confirmed Contact Precautions as an example of low-value practice because associated costs outweigh identified benefits. This possibility has been considered, but not comprehensively explored, by other recent authors (Morgan et al., 2017; Prasad & Ioannidis, 2014; Young et al., 2019).

Having arrived at this assessment, the conclusion of this thesis is that the continued application of Contact Precautions in the management of patients colonised with MRO cannot be ethically justified.

Explanation of this conclusion was depicted in Figure 6 which showed that the benefits of Contact Precautions in the management of patients colonised with an

MRO are considerably outweighed by the various financial and other resource costs and risks to health professional and patient well-being.

As discussed in Chapter 2 (Harris et al., 2019), and Chapter 6, concerns about increasing rates of antibiotic resistance triggered policymakers to take a precautionary approach to the management of people identified as colonised with an MRO. At the time this was an acceptable response. However, as more information about mechanisms of antimicrobial resistance and the risks associated with MRO colonisation and infection, and a greater understanding of the harms of the kind that are described in these study findings, emerged, there is a responsibility to review that decision. There is also a responsibility for experts in the field of infection prevention and control to revise strategic and operational policies and practice in response to these new understandings.

7.3 Recommendations for future policy and practice

Over time it is expected that ethical decision-making will be influenced and altered by new understandings and experiences (Beauchamp & Childress, 2013). A core objective of interpretive description as a research methodology (Thorne, 2016), and empirical bioethical research as an approach to informing ethical discourse (Strong et al., 2010), is that research findings are incorporated into policy and practice changes that improve the experience of healthcare for patients and staff alike. Infection prevention and control policy has been recognised as fraught with ethical dilemmas such as those discussed in this thesis. For many years infection prevention and control experts and other relevant commentators have expressed their views that significant policy and practice changes are required, on ethical grounds (Herwaldt, 1996; Millar, 2009; Rump et al., 2018). By shifting the focus from single parametric measures or individual perspectives and applying bioethical principles to the reported experiences of people who are closest to Contact Precautions, this study has provided evidence to inform defensible policy change.

This research has demonstrated some specific ways in which bioethical principles are infringed by the application of Contact Precautions for hospital patients colonised with an MRO. Some may argue that these conflicts arise not because of Contact Precautions per se, but because of the way Contact Precautions are carried out (Djurman & Gardell, 2018). This is not disputed. However, the study has also shown that Contact Precautions exert several emotional, physical, and practical

stressors on health professionals and these stressors make Contact Precautions difficult to do consistently well.

Ideally, Contact Precautions would be performed in a truly person-centred and holistic manner. Health professionals would take time to explain procedures and obtain informed consent prior to the collection of microbiological specimens. They would avoid treating patients colonised with an MRO unfairly. This study has provided insights demonstrating the many and varied human factors that create difficulties in achieving this ideal. Even if this optimal scenario were to happen, and patient and health professional harms were avoided, the evidence base suggests that the environmental, financial, and workforce costs of Contact Precautions would still outweigh the benefits afforded by them (Hasson et al., 2019; Newton et al., 2001; Roth et al., 2017; Schrank et al., 2019; Zhang et al., 2021).

Contact Precautions have not been shown to prevent MRO transmission (Fätkenheuer et al., 2015; Khader, Thomas, Huskins, et al., 2021), and discontinuation of Contact Precautions has been shown to have no significant impact on MRO transmission or infection rates (Bearman et al., 2018; Marra et al., 2018; Renaudin et al., 2017; Schrank et al., 2019).

The next section of this chapter presents seven recommendations for policy and practice change.

1. Disinvestment in Contact Precautions
2. Strengthened Standard Precautions
3. Hospital buildings designed and equipped for wellbeing
4. Strengthened ethical awareness for health professionals
5. Consistency in approaches and processes for informed consent
6. Collaboration in policy development
7. Strengthened leadership

Standard Precautions require optimal infection prevention and control practices to be applied for all patients at all times in all settings (Moralejo et al., 2018). Contact Precautions have been stipulated as the means to prevent hospital patients from developing infections caused by an MRO for almost half a century (American Hospital Association, 1979; Garner & Simmons, 1983). Therefore, a strong commitment will be necessary if they are to replace Contact Precautions for patients colonised with an MRO.

This transition away from Contact Precautions will require organisational investment in strengthened leadership and role modelling, and education programmes that increase ethical awareness relating to hospital infection prevention and control. Importantly, patients should have the opportunity to provide informed consent prior to all diagnostic procedures and laboratory testing.

The design of healthcare facilities where infection prevention and control isolation practices are necessary, should allow for improved communication between patients and health professionals, and should also provide physical spaces that are conducive to optimal patient wellbeing.

Increased health professional collaboration in policy development and implementation is needed.

In addition to these recommendations for policy and practice, four recommendations for further research are suggested.

1. Compliance rates to be reported in research investigating the effectiveness of infection prevention and control policy and practice
2. Investigation into cultural norms, attitudes, and beliefs, towards infection prevention and control policy and practice
3. Exploration of health professionals' understanding and beliefs about the need for informed consent for diagnostic procedures
4. Approaches for improving health professionals' engagement with policy development, implementation, and evaluation.

These recommendations are made to lay the foundation for ethically justifiable infection prevention and control policies and practice, in the management of hospital patients who are colonised with an MRO.

1. Disinvestment in Contact Precautions

Contact Precautions in MRO management should be recognised and exposed as an example of low-value practice that should be rescinded in favour of Standard Precautions, at the earliest opportunity.

This study has found that Contact Precautions are associated with harms that can impact on patients, health professionals, and organisational culture and resourcing, and that those harms outweigh the few identified benefits. The literature review has revealed that those harms, and the financial costs of implementing Contact Precautions, are likely disproportional to potential risks associated with MRO colonisation, or to any potential benefits in MRO reduction. Furthermore, the relevant literature indicates that revocation of Contact Precautions increases bed availability and saves significant healthcare costs without increasing acquisition of MROs or infection rates and may improve other patient outcomes in settings such as ICU or palliative care (Bardossy et al., 2017; Datta & Juthani-Mehta, 2017; Edmond et al., 2015; Hamill et al., 2017; Schrank et al., 2019).

The finding that a healthcare practice is harmful or of little value to all patients, or to sub-groups of patients, qualifies it for consideration for de-implementation (Hasson et al., 2019; Prasad & Ioannidis, 2014). An alternative to rescinding Contact Precautions for the management of patients colonised with an MRO would be to require PPE including gowns and gloves to be worn by all health professionals during all contact with all patients. This approach has been described as universal Contact Precautions (Furuya et al., 2018; Ho et al., 2017).

This approach might reduce infringements of the principles of justice and non-maleficence seen in this study, because patients would likely not feel singled out and staff might be less confused about PPE requirements because all patients are treated the same. However, respect for health professional autonomy and the principle of beneficence might still be negatively impacted if health professionals considered universal Contact Precautions unnecessary, especially if they perceive them as compromising patient experience or care delivery and believe them to be environmentally unsustainable.

Under the principle of beneficence, a cost versus benefit assessment of these risks might justify universal Contact Precautions if they were shown to have efficacy in reducing MRO acquisition and infection rates in hospitals. However, this is not the case. Where universal Contact Precautions have been introduced there has been

no significant reduction in MRO acquisition (Harris et al., 2013; Ho et al., 2017). Rates of adverse events have been unaffected when universal Contact Precautions are in place, and it is shown that health professionals have reduced contact with their patients (Furuya et al., 2018; Harris et al., 2013). Clearly the introduction of universal Contact Precautions would significantly increase the procurement and disposal costs of PPE consumables.

This study has demonstrated how individuals from both participant groups voiced concerns about wasted time and the environmental impact of PPE usage that was perceived as wasteful. Concerns about the pressure MRO management policies impose on time, financial resources, and the overall hospital economy, have been reported elsewhere (Bushuven et al., 2019). Public health resources should be used responsibly so that they are not wasted on treatments or processes that, relative to cost cannot be shown to be beneficial (Olver et al., 2019).

With the removal of Contact Precautions, considerable financial cost savings would be achieved through the significant reduction in the procurement and disposal costs of the PPE used for Contact Precautions. These financial resources would then be available for investment in higher value care provision thereby potentially improving health outcomes and equity in care provision at population and individual levels, important healthcare considerations within the principle of justice. Therefore, in addition to the findings of this study that relate to the principle of justice at an individual level, the study findings also have relevance to distributive justice as it relates to healthcare strategy, policy, and care provision.

Meeting expected requirements for the principle of non-maleficence would be supported by rescinding Contact Precautions in the management of patients colonised with an MRO. For health professionals this would be driven by a reduction in the levels of emotional distress, physical discomfort, and interprofessional conflict that this study identified in relation to Contact Precautions. For patients, a removal of Contact Precautions would be expected to lead to a reduction in their feelings of differentness and stigma, and they would be more likely to receive equitable levels of care from their health providers who no longer have the need to don the PPE that presents a barrier to entering patients' rooms. The principle of beneficence would be supported because without the label of being colonised with an MRO, patients' healthcare would be more likely to be organised around their individual clinical needs in a person-centred manner, rather than the pathogen-focussed approach that patient participants in this study experienced. Patients who are unlucky enough

to be identified as colonised with an MRO will not be discriminated against or treated differently from other patients by virtue of their MRO colonisation, an attribute that they have no control over. This supports improvements in the ethical principle of justice, a key driver for the recommendation to rescind Contact Precautions in the management of patients colonised with an MRO.

It is important to recall that it was the precautionary approach to the management of MRO colonised patients that prompted the original implementation of Contact Precautions (Harris et al., 2019). The key objective was to stall the ongoing development of antimicrobial resistance amid well-founded fears of a return to the 'pre-antibiotic era' where bacterial infections were unable to be effectively treated (Newsom, 2004b). This imperative remains, and Chapter 2 describes the large body of peer reviewed literature that has been presented as evidence to empirically support or to challenge the value of Contact Precautions in stemming the tide of antimicrobial resistance. Antibiotic resistance is recognised as an extremely significant threat to population health and to healthcare resourcing, and this fact is not challenged in this thesis. Indeed, the need to find ethically justifiable, effective, sustainable, and efficient methods of reducing MRO acquisitions and related morbidity and mortality, was the key motivator for this study.

The imperative for slowing the pace of antimicrobial resistance means that disinvestment in Contact Precautions in the management of patients found to be colonised with an MRO must be undertaken whilst simultaneously and rigorously strengthening and reinforcing the application of Standard Precautions. This means ensuring that those core principles of antimicrobial stewardship, aseptic technique, hand hygiene, environmental hygiene and equipment reprocessing, are consistently maintained and upheld during the care of all patients, regardless of whether or not they are known to be colonised with an MRO. This approach is supported by the evidence provided in several recently published studies (Kluytmans-van den Bergh et al., 2019; Kossow et al., 2018; Lemmen & Lewalter, 2018).

It is recognised that choosing to rescind long-standing policies is challenging and difficult to achieve (Hasson et al., 2019). Despite the expected benefits to patients, health professionals and organisations, the replacement of Contact Precautions in the management of patients colonised with an MRO, with Standard Precautions, will require significant effort. One reason for this is that the study findings have revealed a strong belief amongst health professionals that Contact Precautions are

necessary to prevent illness in patients as well as themselves, and their family members or pets.

Health professionals trust Contact Precautions, so removing them from the policy framework may trigger increased levels of psychological harm and workplace conflict if not very carefully managed. Strong and collaborative governance processes will be necessary for successful removal of the long-standing low-value practice of Contact Precautions within MRO management policies (Hasson et al., 2019).

The second recommendation made in this thesis is therefore an essential requirement for facilitating rescission of Contact Precautions in the management of patients who are colonised with an MRO.

2. Strengthened Standard Precautions

Infection prevention and control education should focus on strengthening trust in Standard Precautions whilst improving health professionals' confidence and skills in risk assessing the need for transmission-based precautions to be added.

Standard Precautions provide the framework for a consistent approach to hospital infection prevention and control upon which further measures can be applied, as necessary (Moralejo et al., 2018; National Health and Medicine Research Council, 2019). There is no sound evidence for their inferiority to Contact Precautions in preventing the transmission of MROs in hospitals (Bardossy et al., 2017; Marra et al., 2018; Young et al., 2019). However, health professionals in this study indicated their belief that Contact Precautions are the necessary minimum requirement for the prevention of transmission of MROs within hospital settings. Health professional participants also describe feeling confused about the variation in infection prevention and control policy and practice relating to MRO prevention measures. This has a negative impact on their ability to communicate information about MROs and Contact Precautions effectively with their patients.

In other studies, nurses' level of knowledge has been found to affect the care they provide, with ignorance eliciting strong emotional responses ranging from respect for the infection, to feelings of being threatened, and even terror (Andersson et al., 2016; Bushuven et al., 2019; Nofal et al., 2017). Knowledge and understanding creates confidence and security in their role as care givers, whilst ignorance leads

to fear and insecurity, and performance anxiety (Andersson et al., 2016; Harris et al., 2020).

Whilst it has been found elsewhere that nurses do not feel they require more education on Contact Precautions (Jessee & Mion, 2013), other researchers have reported a lack of knowledge about MRSA and Contact Precautions, inconsistent practices, and an expressed need for increased health professional education on Contact Precautions and information about MROs (Easton et al., 2007; Raupach-Rosin et al., 2016; Rump et al., 2017). A consistency of approach to infection prevention and control education is also needed. German researchers found variations in the time allocated to infection prevention and control education, and in the methods that are used to provide that education, in different health professions' education programmes. This was identified as a barrier in enabling those clinicians to properly advise their patients and was also a trigger for interprofessional conflict (Bushuven et al., 2019).

This study has demonstrated a need for transparency and demystification of technical aspects of microbiology and simplified infection prevention and control messaging to health professionals, so that they understand the principles and can apply them to their clinical practice confidently and effectively. This will facilitate a necessary transition from the prevailing pathogen-centred model to a person-centred approach to infection prevention and control in hospitals. This is the foundation for the recommendation for taking a horizontal approach (Bearman & Stevens, 2012; Lederman, 2020; Wenzel & Edmond, 2010) to infection prevention and control by strengthening Standard Precautions within hospital settings.

Infection prevention and control education should be provided equitably to all health professionals so that the different professional groups receive consistent and compatible information. Ideally, this education should be presented using formats that enable constructive and critical reflection and discussion so that the different perspectives of the various professions can be more clearly understood and acted upon by relevant key stakeholders within the organisation. The imperative for continued focus on the global problem of antibiotic resistance means this education should incorporate opportunities for health professionals to increase their confidence in discussing topics such as MROs, and the importance of infection prevention and control, with their patients and their peers.

Education programmes that successfully facilitate health professionals in their consistent application of Standard Precautions to all patients, coupled with skills in

recognising and assessing the need for additional transmission-based precautions (such as Droplet or Airborne Precautions) to be applied for certain patients according to their symptomatology, would greatly simplify hospital practice and improve the experience of health professionals and their patients.

Through strengthened Standard Precautions all patients will be afforded optimal protection from MRO acquisition in hospital, thereby supporting improved observance of the ethical principles of justice and beneficence.

3. Hospital buildings designed and equipped for wellbeing

Single rooms used for patients requiring isolation (for example, Droplet or Airborne Precautions) should be thoughtfully designed so that disadvantages to patients and health professionals are minimised.

This study has found, as have others (Bartley et al., 2010; Taylor et al., 2018), that the design and location of patient accommodation used for isolated patients has the potential to influence these patients' experience. Hospital planners and architects should consider situating single rooms used for isolation towards the main body of hospital wards rather than at a distance from activity hubs such as the nurses' station. If they are located close to noisy departments, acoustic controls are recommended.

Rooms should be equipped with a means of facilitating responsive and timely communication so that staff can request assistance without the need to leave the room, and so patients can be enabled in timely and effective communication with their health professionals. Audio-visual communication tools such as iPads, or the ability to incorporate communication applications into the TV screens already in each room would be beneficial.

Single rooms should have external windows with views of nature or other interest as these factors are known to improve patient wellbeing (Bartley et al., 2010). Windows onto corridors are also recommended so long as privacy screens are installed. As isolated patients are not able to leave their room, their opportunity for entertainment is limited. Hospital executives should consider providing television entertainment and high-quality internet connectivity free of charge to patients who are unable to visit communal social spaces such as TV lounges within the hospital.

These improvements will support isolated patients' wellbeing and reduce the risks of harm caused by feelings of stigmatisation, thus strengthening the principles of beneficence and non-maleficence.

4. Strengthened ethical awareness for health professionals

Infection prevention and control education should incorporate content that enables health professionals to be aware of potential ethical conflicts in infection prevention and control practice. It should also provide them with skills to enable those conflicts to be mitigated.

The subject of medical ethics, including the topics of consent and professionalism, is integrated in to the curriculum of Australian medical schools, although the content and delivery methods are variable (Braunack-Mayer et al., 2001; Torda & Mangos, 2020).

For health professionals in this study, compliance with Contact Precautions policy took precedence over respect for patients' autonomy, or the principle of non-maleficence, even when this commitment created internal conflict in relation to their valued professional autonomy (Pellegrino, 1994) and personal wellbeing. These findings indicate the need for health professionals to increase their understanding of how bioethical principles apply to the prevention of transmission of potential pathogens in hospitals. Maintaining individual healthcare rights, patient-centredness, and the avoidance of professional and interpersonal conflict prompted by infection prevention and control measures, are all important areas for discussion and this study provides a basis for understanding those risks, harms, benefits, and costs more fully than was previously possible.

Infection prevention and control precautions used to manage transmission risks associated with respiratory pathogens like tuberculosis or SARS-CoV-2 are considered to be effective (Ather et al., 2021). In addition, pathogens that are transmitted through respiratory mechanisms can be highly infectious and lead to significant harm in people who become infected (Houghton et al., 2020). Therefore, when a risk versus benefit assessment is carried out under the principle of beneficence, they are of higher value than Contact Precautions. Conversations relating to the ethical impact of Contact Precautions will likely trigger rigorous debate around the necessary balancing of risks and harms (or costs) and benefits. In relation to infection prevention and control policies, this is important because patients and health professionals who are legitimately subjected to proven transmission-based precautions such as Droplet or Airborne Precautions, are likely to feel similar harmful effects as those identified in this study unless the lessons of this study are understood, accepted, and mitigated.

This study has indicated that health professionals working with patients under these transmission-based precautions must take measures to avoid taking actions or making omissions that prompt feelings of stigma or cause other harms in their patients and their colleagues. It is important that if patients are subjected to isolation measures, they must be fully informed of the reasons. The control measures must be imposed for as short a time as possible, and all health professionals should know and appreciate the associated risks and take measures to mitigate against those risks in their interactions relating to isolated patients.

Infection prevention and control policies generally recognise the potential for ethical conflicts to occur and include mitigation strategies that include the need for provision of appropriate communication to patients and their families (National Health and Medicine Research Council, 2019). This study has shown that in this study setting, the provision of the available printed resources is inconsistent, and verbal explanations are similarly erratic. It is recognised that effective communication and education have been noted as being crucial sustained and successful therapeutic relationships (Milligan & Jones, 2016). Therefore, education to health professionals should explain the importance of information being provided in an appropriate format and at an opportune time, so that they more effectively respect their patients' ability to make autonomous choices and enable them to be more equal partners in their own care.

Importantly, the influence of visual and auditory reminders to MRO colonised patients about their 'differentness' should be impressed upon health professionals along with messaging that these patients deserve equitable and optimal care. The role of all health professionals in advocating for patients and ensuring the presence of a pathogen does not unjustifiably interrupt healthcare provision needs reinforcement because the study has shown that health professionals do not provide the same level of care to patients in Contact Precautions as to other patients. It is likely that care provision would be similarly affected by the application of other transmission-based precautions that are of higher value than Contact Precautions in protecting staff and other patients from pathogens. Therefore, even after removal of Contact Precautions for the management of patients colonised with an MRO, staff members' obligations to uphold the principles of justice and non-maleficence should be incorporated into education programmes relating to patients being managed under other transmission-based precautions.

5. Consistency in approaches and processes for informed consent

Health professionals must always seek informed consent prior to collecting clinical specimens for laboratory investigation.

An important finding revealed by this study was that informed consent is not sought from patients prior to the collection of clinical specimens for laboratory examination, and this represents an infringement of the principle of respect for autonomy. Infection prevention and control teams should ensure that this requirement, along with practical examples of how this would be achieved, is incorporated into infection prevention and control policy frameworks, and education programmes for clinical staff. They should also collaborate with pathology service providers to develop supportive resources for both health professionals and patients to enable the effective communication that is necessary in obtaining informed consent. Strategies for the effective discussion including appropriate translation of technical information to the person who is expected to make an informed decision to consent, is problematic. Knowing what information to provide, as well as the best method of providing it requires the health professional to be well-versed in the multiple social, personal, institutional, and practical considerations that impact on the patient's experience of autonomy and consent (Milligan & Jones, 2016).

Ensuring that patients receive accurate, timely and appropriate information so that they understand the reason for diagnostic tests to be done, and the possible implications of the test results (including the sharing of information, and the potential application of control measures), is necessary to support the principle of respect for autonomy. Patients should be able to opt out of surveillance programmes for MROs. This statement is supported by the fact that at the current time there is no legal imperative for MROs to be reported as they are not listed as notifiable conditions under public health legislation (NSW Government, 2010). Therefore, it is clear that at public health policy level, MRO prevalence is not considered a significant public health concern in NSW. Whilst this is the case, individuals ought not be obligated to participate in public health measures such as active surveillance because the public good is not considered significantly at risk. In practice, it is likely that most hospital patients will be comfortable with having clinical specimens collected, because they recognise the potential for the findings to be useful in the management of their clinical condition, or they are committed to supporting the facility in quality control measures, or outbreak management, in a communitarian sense (Currie et al., 2014; Santos et al., 2008). Patients also trust their doctors to make suitably appropriate

decisions about their care (Dorr Goold, 2001). For similar reasons, hospital patients will likely not be concerned about the information obtained from examination of their microbiological specimens being anonymously shared for surveillance purposes (Currie et al., 2014).

These factors indicate that refusal of specimen collection, or information sharing for surveillance purposes, will be minimal and therefore will not materially impact on the validity of surveillance systems. This position is reinforced by the fact that current processes that lead to the acquisition of MRO surveillance data are inconsistent, and not all hospital patients are screened for MRO colonisation (Kohlenberg et al., 2011; Pogorzelska et al., 2012). The current system is already imperfect.

Patients must be provided with appropriate and timely information in order to provide their informed consent. Should a patient decide not to allow information about their MRO colonisation status to be shared for surveillance purposes, this decision must be supported and respected. This may create operational difficulties for contemporary laboratory reporting systems that frequently rely on automated reporting and notification processes.

Should a patient decline the collection of a clinical specimen, the managing team must re-evaluate the need for the test and approach the patient once again should the test be considered clinically crucial. Skilled communication from health professionals will be needed to ensure the patient is declining the investigation for reasons they fully understand.

In providing patients the opportunity to provide informed consent, the principles of respect for autonomy and beneficence will be supported as this is an expectation of ethically responsible healthcare (Australian Commission on Safety and Quality in Healthcare, 2020; Selgelid, 2016). Emotional distress amongst patients will also likely be averted, thereby reducing infringements to the principle of non-maleficence.

6. Collaboration in policy development

Infection prevention and control policy developers and governance systems should work together with practicing health professionals and patients to develop policies that are valued as clinically relevant and evidentially sound, and that are readily accessible.

There are many enablers and barriers to successful policy implementation. These include the various attitudes and behaviours of those responsible for delivering the policy; those whose cooperation is required for its success (Alderson et al., 2018;

Lawton & Parker, 1999). In the context of infection prevention and control policy, this study has demonstrated the importance of policy writers understanding the theoretical balance between managing organisational risk and supporting the clinical judgement of autonomous professionals (Bail et al., 2009). Clinical teams need to see the guideline or policy as relevant to their setting, and they need to trust and understand the theoretical foundation, and the evidence on which the requirements are founded (Evans-Lacko et al., 2010). If these elements are not in place, health professionals may feel a lack of respect for their position and perceive their autonomy to be compromised by organisational requirements. They may also feel powerless to influence change. One way to counter this would be for the involvement of clinical and managerial staff as well as the content experts, in the development and implementation of policies (Evans-Lacko et al., 2010).

Failure to consult with health professionals about the need for a policy and having too many or overly complex documents that are not easily accessible, present organisational as well as patient safety risks (Carthey et al., 2011; Houghton et al., 2020). Although the study findings reported here are unlikely to relate specifically to infection prevention and control policy, this study has shown the importance of collaboration and effective and critical interaction and engagement through all stages of policy development, implementation, and evaluation. Policies and guidelines also need to be made accessible to health professionals through on-line portals or other preferred sources. This would facilitate reference to current local policies and guidelines rather than the policies and guidelines from another organisation the clinician has previously worked in. This will reduce the confusion that this study has identified as creating the inconsistent practices that trigger workplace conflict and emotional distress, and possible adverse events for patients.

7. Strengthened leadership

Health professionals require overt and consistent support from their managers and leaders so that sub-optimal practice is effectively challenged.

This study has affirmed the need for managers and senior leaders to increase efforts to address the authority gradients that are so prevalent in healthcare, and which prevent staff from the lower rungs of the hierarchical ladder, speaking out when they observe patient safety risks (Schwappach, 2018). In addition, the importance of supervisors openly recognising good practice has been acknowledged (Jessee & Mion, 2013). This latter hope did not feature prominently in this study, however the frustration felt by health professionals observing a lack of consistent managerial

expectation of policy compliance was a significant study finding. This frustration was exacerbated when participants reflected on the few remedial actions being taken by senior role models and managers. The transition of this frustration to a position of acceptance and failure to speak up about patient safety concerns was a concerning discovery.

The need for policing of infection prevention and control policy compliance to be stricter, and an organisational culture in which staff feel supported in their infection prevention and control efforts and in encouraging their peers to do the same, have been noted elsewhere (Seibert et al., 2014; Sharma et al., 2017).

In addition to recommendations for improved practice, four recommendations for further research are made, as the results of this study have identified a need for a greater understanding of the beliefs, expectations, and drivers for compliance with infection prevention and control policy frameworks by health professionals. There is also a need for further research to be undertaken to explore organisational culture and cultural norms that relate to the concept of informed consent for diagnostic procedures. This research would be expected to inform optimal strategies and frameworks for the implementation and evaluation of the recommendations described above.

7.4 Recommendations for future research

The first of the four recommendations for research, is a call to research teams making claims relating to healthcare infection prevention and control programmes, to actively work to improve the quality of the evidence base.

One way to achieve this would be to ensure rates for components such as policy compliance are accurately communicated in study reports. The second and third recommendations for further research relate to the need for an improved understanding of the attitudes and beliefs held by health professionals in relation to infection prevention and control policy and practice, and informed consent as it relates to diagnostic procedures and laboratory testing. This study touched on the topic of clinician engagement in policy development and implementation, with participants relating their perception that policies are delivered from management rather than developed collaboratively. The final recommendation for research is to develop an understanding of the barriers encountered by policy writers and by health professionals in achieving collaboration and co-creation of infection prevention and control policies and strategies.

1. Compliance rates

Compliance rates for infection prevention and control precautions should be rigorously measured and communicated in published reports that make empiric claims about their efficacy.

Numerous reviews of the evidence base for infection prevention and control conclude that the quality of studies is frequently suboptimal (Cohen et al., 2015; Landelle et al., 2013). This criticism is likely derived from pervading conventions about the hierarchy of evidence in healthcare, where randomised case control studies are considered gold standard (Jones & Podolsky, 2015). Whilst this may be the case in other areas of healthcare, this type of empirical study design cannot provide answers to the many real-life questions that infection prevention and control teams are presented with. There are however, areas where quantitative findings are useful. An example would be the many studies that investigate whether Contact Precautions are effective in preventing the transmission of MROs. As this study has identified, compliance with Contact Precautions is problematic in busy clinical practice. Contact Precautions are hard to do.

If the evidence wars that are so visible in the infection prevention and control literature (Prasad & Ioannidis, 2014) are to be stemmed, claims of any particular infection prevention and control measure's efficacy must be supported by measured evidence of policy compliance. Having a policy document in place is not measure enough. However, in many of the studies referenced in this thesis, there is a lack of transparency or thorough evaluation of the degree to which precautions are complied with or followed within the study setting. Other authors have observed that compliance monitoring is not commonly undertaken in studies that purport to evaluate the effectiveness of Contact Precautions in the prevention of MRO transmission (Cohen et al., 2015).

This study revealed a perception amongst health professionals and patients that doctors comply with Contact Precautions less consistently than the other professions. This appears to be in agreement with other researchers (Arriero et al., 2019; Jessee & Mion, 2013), who have noted that doctors comply with policy less well than other professionals, particularly with regard to compliance with hand hygiene policies (Almaguer-Leyva et al., 2013; Mortell, 2012). In contrast however, a Japanese study of compliance PPE use within Contact Precautions policy found low overall compliance but that doctors were more likely to comply than nurses (Katanami et al., 2018). This evidence is problematic because comparison cannot

be validated without assurance that these rates are derived from the same assessment methods.

The development of validated tools with which to measure policy compliance would be beneficial and would enable credible comparisons to be made. The use of observational techniques rather than self-report would also be useful in knowing whether the perceptions of these study participants, that doctors breach infection prevention and control policies, such as Contact Precautions, most frequently, are valid.

2. Cultural norms, attitudes, and beliefs

Exploration of health professional and patient attitudes and beliefs towards hospital infection prevention and control policy and practice.

The Theory of Planned Behaviour was utilised in this study as a mechanism to begin to understand the drivers, and the attitudinal and cultural motivators, for the infection prevention behaviours of health professional participants. The study has found that health professionals often recognise the potential for Contact Precautions to impose harms on patients. It has also been found that Contact Precautions policy, as a 'visible' framework, can trigger interprofessional disharmony which damages working relationships in healthcare, and creates internal conflict within individuals. This latter aspect of infection prevention and control practice warrants further exploration. Are these tensions more prevalent in infection prevention and control policies than in other policies that do not provide observers with an immediate assessment of a clinician's compliance with the policy requirements?

Some detailed inquiry into the power of infection prevention and control policy in creating moral distress in health professionals, leading to a greater understanding of the specific factors that are involved in generating moral distress would be useful. This is because greater insight amongst infection prevention and control teams, in their delivery of education and support to clinical teams would likely lead to improvements in policy compliance, and improved staff and patient safety.

There are numerous published studies describing the differing rates of compliance with infection prevention and control policies according to professional affiliation (Almaguer-Leyva et al., 2013; Arriero et al., 2019; Jessee & Mion, 2013). One explanation for these differences could be the balance between personal beliefs and values alongside prevailing community norms and culture (Ajzen, 1991). As suggested above, the mechanisms used to develop and implement infection

prevention and control policy might also provide an explanation (Larson et al., 2007). Barriers include whether the evidence is seen as credible and able to achieve results, along with a clinician's belief in their ability to comply with the policy. As Winton(D) astutely observed, and has been recognised elsewhere (Cabana et al., 1999), the ability to overcome the inertia of previous practice is a common reason for non-compliance. Doctors may demonstrate outright hostility towards guidance that they see as an imposed device of managerial control rather than an intrinsic part of patient care (Gilbert & Kerridge, 2020).

Despite these observations few reported studies undertake detailed exploration of health professionals' attitudes and beliefs towards infection prevention and control policies. Developing a deeper understanding of health professionals' attitudes and beliefs towards infection prevention and control policy and practice will enable improved approaches to addressing any identified barriers to compliance with those policies by health professionals.

The attitudes, beliefs and expectations of patients relating to infection prevention and control policy and practice is another important research opportunity. This study has shown that patients are more likely to experience emotional distress and feel compromised if they hold different expectations about hospital infection prevention and control requirements than they experience or observe. This inquiry could also incorporate the objective of understanding patients' beliefs about their own role in safeguarding themselves and their fellow hospital patients from infections while in hospital. An improved understanding of patient expectations and beliefs towards infection prevention and control should enable policy makers and educators to build more effective and patient-centred resources, including education strategies, for patients as well as for health professionals.

The acceptance of conditions that negatively impact individual autonomy, from both health professionals and patients affected by the application of Contact Precautions, is interesting and warrants further research into why this acceptance occurs, and what processes are involved in moving an individual from a state of distress and anxiety to one of tolerance.

3. Informed consent for diagnostic specimen collection and testing

Research into health professionals' understanding and beliefs about the requirement for informed consent to be sought for diagnostic procedures is needed.

This study has shown that in this setting, patients are not provided with timely, accurate or comprehensive information prior to the collection of clinical specimens for laboratory examination. There are several possible reasons for this, including a belief that if testing is done as a quality improvement activity consent is not required, or a traditional and paternalistic understanding of the routine nature and beneficent purpose of the tests. Other possibilities are a lack of motivation to change, and inertia of previous practice (Cabana et al., 1999; Djibre et al., 2017; Santos et al., 2008; Vos et al., 2009). This study has offered some insight but has not revealed detailed explanations, so further research to explore this apparent lack of concern for informed consent in relation to microbiological testing would be useful. As technologies advance there is a need to explore the ethical standing of surveillance protocols for MROs when patient consent for sharing of this information has not been sought or provided (Braunack-Mayer & Mulligan, 2003; Degeling et al., 2020).

4. Policy development, implementation, and evaluation

How to improve health professionals' engagement with policy development, implementation, and evaluation.

This study revealed concern from health professionals that healthcare policies are too numerous and too inaccessible to be of practical use. Although policies were trusted there is an indication that health professionals are not actively involved in policy development, and that they see policies as being imposed from high up in the organisation. This study did not bring any insights regarding the degree to which individual health professional participants had been involved or engaged in infection prevention and control policy development.

Uncertainty about the efficacy of infection prevention and control measures, and a lack of transparency around the reporting of healthcare associated infections have been identified as barriers to doctors becoming more involved in infection prevention and control policy development and implementation (Gilbert & Kerridge, 2019). This topic of clinician engagement in policy development and implementation deserves further research in view of the growing understanding of the impact of a perceived

challenge to professional autonomy on the intention of health professionals to follow clinical practice guidelines and policy requirements.

Exploration of barriers and enablers for health professionals' engagement in policy-related consultation activities, coupled with an improved understanding of the current levels of health professionals' engagement in infection prevention and control policy co-creation and evaluation would be beneficial, as this has not been comprehensively explored to date.

7.5 Study strengths and limitations

A strength of this study is the qualitative study design using interpretive description methodology. In the field of medicine many consider quantitative research as the 'gold standard' (Evans, 2003; Jones & Podolsky, 2015). Quantitative study designs, such as prospective randomised controlled trials, are designed with replicability in mind and this aspect of experimental design, alongside power calculations is considered crucial in substantial parts of the infection prevention and control evidence base. The problem with this assertion is that infection prevention and control is not only about microbes, transmission mechanisms and host factors.

As this study has shown, infection prevention and control in hospitals is very much involved with individual emotions and behaviours, societal norms, and organisational culture. For these reasons, the opinion that quantitative research holds the only solution to infection prevention and control questions is challenged as a viewpoint. Qualitative methodologies enable a deep multifactorial understanding to be gained and a strength of this study design has been that it has allowed participants their own voice rather than creating empirical data for deductive analysis. Had a quantitative approach been taken, the relevant insights into professional conflict, the importance of policy engagement, role modelling and supportive leadership, as well as concerns about informed consent, and material and financial resource implications, may have been missed.

Bioethical principles provide a useful foundation in discussions such as in this thesis, where consideration of the research question, and justification of the conclusion, are set in a context of the participants' experiences, and other published observations relating to the authentic real-life application of Contact Precautions. It is recognised that in any ethical dilemma, some moral theories or ethical frameworks will be more applicable than others (Beauchamp & Childress, 2013). A key strength and uniqueness of this study is that it has applied a pluralistic approach, and avoided

precarious affiliation with any single ethical theory (Beauchamp & Childress, 2013). Through examination of Contact Precautions using bioethics as the core theoretical scaffold, and by involving healthcare consumers and a range of health professionals in the research, this study has enabled a multi-dimensional understanding. The objective of justification in ethics is to establish sufficient quality and quantity of relevant information to support the argument (Beauchamp & Childress, 2013). The novel approach of framing the semi-structured interviews around the chosen theoretical scaffold and interpreting the findings using the principles of bioethics has been worthwhile as it has enabled some unanticipated nuances of infection prevention and control practice to be revealed.

The information provided through this study is substantial and reflects other researchers' findings. This study has added further insight and depth to pre-existing understanding of harms that may be attributed to Contact Precautions. The study has brought new insights into the impact of Contact Precautions on health professional relationships and organisational culture that were previously not well recognised. Furthermore, important infringements of the principles of respect for autonomy and justice, not widely or critically discussed elsewhere, have been revealed.

By framing the findings under this bioethical lens, contextual answers are provided where they have previously been challenged when presented as stand-alone findings relating to a limited set of risks such as stigma (Rump et al., 2017; Wijnakker et al., 2020), MRO acquisition rates (Renaudin et al., 2017; Vogel, 2019), or financial costs (van Dijk et al., 2020; VerLee et al., 2014). As a result, it is hoped that this study will be influential in silencing the longstanding evidence wars that have resulted in practice inertia and resistance to disinvestment in Contact Precautions despite mounting evidence for their lack of efficacy and inherent harms (Deresinski, 2018; Fätkenheuer et al., 2015; Morgan et al., 2017; Prasad & Ioannidis, 2014; Purssell et al., 2020; Young et al., 2019).

A delimitation of this study is that it captures insights from a group of participants who have experienced Contact Precautions within the setting of public hospitals in a circumscribed geographical location in NSW, Australia. As has been recognised within Chapter 6 the application of Contact Precautions, and the management of patients colonised with an MRO varies widely within Australia and globally (Dhar et al., 2014; Dickmann et al., 2017; Vuichard Gysin et al., 2018). Thus, the findings may not reflect those of all people experiencing Contact Precautions in all hospitals.

However, the congruence of findings in this study with other studies from many other parts of the world, over many years, provides a strong indication that the findings will indeed be relevant to other jurisdictions, patients, and health professionals.

An unexpected limitation to the implementation of this study occurred because of the global COVID-19 pandemic that began in early 2020. Interpretive description is an approach that involves participant reflection on emerging themes and findings as interviews proceed, and the identification of particularly insightful or engaged participants as key informants. Due to the restrictions imposed in response to COVID-19 there was no opportunity to go back to informants to further elaborate on the key findings, as was originally intended. Confidence in the veracity of the themes, has instead been assured by relating them to existing research, through discussions with the researcher's supervisory team, and in an anonymised and generalised format, with another expert colleague with skill in qualitative data analysis.

7.6 Conclusion

The experiences shared by the patient participants in this study are very closely aligned with those reported by many other research teams. The additional capture of the experiences of health professional participants in this study, and interpretive description of these experiences through the chosen theoretical scaffold have added an extra dimension to prior knowledge and experience. This understanding extends beyond what has previously been reported and described by others. This study has found that Contact Precautions present a significant challenge to organisational culture and professional well-being, and to the provision of person-centred ethical care to patients. The various impacts of the implementation of Contact Precautions confirms them as breaching established ethical and moral theoretical paradigms, without significantly preventing MRO acquisition or improving outcomes for individuals or communities. As a result, Contact Precautions as a strategy for MRO control are confirmed as an example of low-value care. They constitute practices that divert financial, time, and material resources away from higher-value infection prevention and control activities, such as strengthened Standard Precautions. They therefore cannot be justified.

In addition, the study findings indicate that the way MRO-colonised patients are treated by health professionals when they are managed under Contact Precautions challenges bioethical principles of respect for autonomy including that of health professionals, justice, beneficence, and non-maleficence. Health professionals

require improved training so that they develop skill and confidence in discussing antimicrobial resistance and hospital infection prevention measures with their patients. Conversations about MROs and the responsibility of patients and health professionals alike, to play their part in stemming the concerning increases in rates of antimicrobial resistance, will continue to be necessary. The role of Standard Precautions, applied consistently during every healthcare interaction, is crucial and this should be reinforced at every opportunity.

There are clear, evidence-based indications that the addition of transmission-based precautions to these Standard Precautions, when caring for patients with certain other communicable diseases such as measles, influenza, or SARS-CoV-2, effectively prevents transmission. This study provides an indication that those precautions might also have the potential to precipitate unjustifiable infringements to bioethical principles. It is important that health professionals recognise this and take steps to mitigate risks to their patients, and to their professional relationships and organisational culture.

This study shows the importance of infection prevention and control policy developers and implementers to understand the barriers and the enablers for health professionals in effectively following policy requirements. The findings confirm the need for patients to be provided with appropriate and timely information about hospital infection prevention and control measures, laboratory specimen collection and testing, and the results of those tests. Patients must be helped to understand the justification and the purpose of any subsequent restrictions they experience, so that they feel able to ask questions of their health professionals and are more equipped to manage the impacts of any imposed restrictions.

This study has identified the need for further research in this area of clinical infection prevention and control practice, particularly relating to matters of communication, consent, inter-personal and inter-professional relationships, role modelling and organisational culture.

As has been demonstrated by this research, the ethical risks associated with applying Contact Precautions in the management of patients colonised with an MRO outweigh any perceived benefits to patients, the broader patient population, and health professionals. Therefore, this study confirms that the use of Contact Precautions in the management of patients colonised with an MRO is not ethically justifiable in contemporary hospital care.

Chapter 8: Epilogue

Reflections on the healthcare management of MRSA and the public health management of SARS-CoV-2 as emerging novel pathogens. February 2022.

The purpose of this epilogue to the thesis, is to compare and contrast the application of the precautionary principle in interrupting transmission of SARS-CoV-2 in Australia, with its application in the 1980's when Contact Precautions were introduced for the control of methicillin resistant *Staphylococcus aureus* (MRSA) in hospitals. Whilst only a minority of the population will have experienced the restrictions imposed by Contact Precautions, as described in this thesis, all citizens now have a common experience of SARS-CoV-2 restrictions. It is hoped that this collective understanding of the personal and societal impact of those restrictions might help future policy makers to reconsider the ethical standing of Contact Precautions in the control of MRSA in hospitals.

As described in Chapter 2, since the widespread use of antibiotics in modern healthcare, antibiotic resistance has been recognised as a significant threat to human health and to the provision of effective and safe healthcare. One of the most significant antibiotic resistant pathogens is MRSA (Nelson et al., 2015).

First reported in 1961 (Newsom, 2004b) MRSA continues to cause significant healthcare-associated (Primo et al., 2012) and community-associated infections (Millership et al., 2006; Skyman et al., 2016).

In the early 1980s, the hospital management (Garner & Simmons, 1983) of patients identified as colonised or infected with MRSA was directed by application of the precautionary principle (Bryan et al., 2007). Patients were isolated in single rooms, unable to leave that room, and staff entering the room were attired in long-sleeved gowns, and gloves as personal protective equipment (PPE). These people were scheduled to have operations and other diagnostic and therapeutic procedures done at the end of the day, and as a result were often cancelled when lists ran over time. Strict cleaning measures were put in place for their immediate environment and equipment used for their care (Garner & Simmons, 1983). These measures singled those patients out as 'different' from others, with associated stigmatisation (Barratt et al., 2010; Rump et al., 2017). Patients managed under these precautions suffer a range of adverse events whilst in hospital (Purssell et al., 2020).

In late 2019, as I was embarking on writing the findings chapter of this thesis, news came from China, of the discovery of a novel respiratory virus named Severe Acute Respiratory Syndrome – Coronavirus-2 (SARS-CoV-2) causing an infection known as COVID-19 (Allam, 2020). Numerous patients were presenting to hospital in the city of Wuhan with severe and life-threatening respiratory symptoms leading in many cases to systemic illness and multi-organ failure. In February 2020 cases were seen in Europe (Mavragani, 2020). The virus came to Australia on board a cruise ship and through international travellers arriving by air (Ito et al., 2020; Liebig et al., 2020).

Just as MRSA had prompted responses developed in the context of limited information and understanding of the pathogen, control measures against SARS-CoV-2 were promptly implemented (Stobart & Duckett, 2022). The Australian Prime Minister at the time, Scott Morrison, pronounced the emerging pathogen as a pandemic threat days before the World Health Organisation issued their affirmation of SARS-CoV-2 as a pandemic threat of global concern. On March 11th, 2020, the World Health Organisation declared the infection to be a pandemic, as it had infected more than 118,000 people in 114 countries and continued and sustained spread was considered likely. The WHO Director General stated that 'countries must strike a fine balance between protecting health, minimising economic and social disruption, and respecting human rights' (World Health Organization, 2020).

In response to the SARS-CoV-2 pandemic, the precautionary principle was applied on a national level in Australia just as it had been applied in hospitals across the world in the early 1980's as a response to the emerging threat of MRSA. International travel to and from Australia was curtailed, with exemptions being allowed to very few people under extremely limited circumstances (Stobart & Duckett, 2022). Australians who were overseas at the time the restrictions were enforced found themselves unable to easily return to their homeland. People able to return to Australia were required to fulfill 14 days of quarantine in a designated hotel to ensure any virus they were incubating on arrival would have revealed itself before they were allowed into the wider community. Australians were only able to leave the country after applying for permission to leave, and only then for compassionate reasons such as a parent, child, sibling, or spouse dying overseas. Having left the country, timely return was by no means assured, and lengthy stays were often required due to the capacity of hotel quarantine to accommodate the necessary quarantine measures (Whyte et al., 2021).

Domestic restrictions were no less stringent. State borders were closed (Stobart & Duckett, 2022; Storen & Corrigan, 2021). Major events including funerals and weddings were cancelled as the restrictions took hold (Storen & Corrigan, 2021). Face masks were to be worn in all indoor settings other than home (NSW Government, 2020).

Retail and hospitality businesses were severely impacted by these restrictions, and the Australian and State governments introduced a number of initiatives to counter the financial impact on businesses as well as individual employees (Storen & Corrigan, 2021).

There were to be no visits to friends and family homes and no visitors to homes from people not normally resident there. This meant that grandparents and grandchildren did not see each other, and friends could not meet socially unless by meeting outside with one other person for the purposes of exercise (NSW Government, 2020). Hospitals and residential aged care facilities closed their doors to visitors (Storen & Corrigan, 2021). Children in hospital were not allowed visits from their siblings and could be visited by just one parent. Patients with COVID-19 were not allowed visitors even when dying (Capozzo, 2020), and volunteer services were discontinued for fear the volunteers would be at risk in the hospital setting (Jones et al., 2020). Out-patient appointments were undertaken using virtual platforms rather than face to face, and community-based services such as oral health were severely restricted, to emergency provision only (Sutherland et al., 2020). Elective surgery was curtailed (NSW Health, 2021).

In immediate public health terms these harsh restrictions were effective. In NSW, and in the country as a whole, the numbers of cases of COVID-19 infection were successfully limited (Stobart & Duckett, 2022). The harms caused by the restrictions will undoubtedly be justified because of the numbers of lives that were saved, and the avoidance of significant over-burdening of the health system that would have been expected to occur had the restrictions not been imposed. However, the harms reported as resulting from the restrictions are diverse, encompassing economic, societal, educational, and environmental considerations. Some of the reported health-related harms such as increased rates of depression and anxiety, increased alcohol and tobacco use and reduced levels of physical activity will likely have continuing ongoing and far-reaching impacts on the public health (Stanton et al., 2020).

COVID-19 restrictions have affected families and social relationships in positive ways, such as allowing parents to more evenly share childcare obligations (Evans et al., 2020). However, concerns have been raised that the impact of the pandemic has been borne inequitably due to restrictions being imposed without apparent consideration of the differential impacts on the socially marginalised (Wood et al., 2021). Some families and individuals already affected by lower income, or with pre-existing vulnerabilities such as disability or chronic illness, were more compromised by COVID-19 restrictions than those not previously experiencing these challenges (Evans et al., 2020). Similarly, it is recognised that the hospital patients most likely to be colonised with MRSA, and therefore managed under Contact Precautions, are those who are disadvantaged and vulnerable. Patients who have multiple co-morbidities and chronic health conditions (Mitevska et al., 2021; Stacey et al., 2019) including HIV (Lee et al., 2013), or who have had numerous hospital admissions or admission to ICU (Fouda et al., 2016) have increased rates of MRSA infection and colonisation compared with other sectors of the population. People who are refugees (Kossow et al., 2018) or residents of an aged care facility (Millership et al., 2006), are amongst the patients most likely to be colonised with MRSA on admission to hospital, and therefore subjected to Contact Precautions.

COVID-19 restrictions, just like Contact Precautions for the management of patients identified as colonised with an MRO, significantly impaired individual freedom of movement and freedom of choice. They have been associated with documented harms affecting the people under their influence. This study has shown that Contact Precautions have the potential to cause moral distress, psychological harm, and organisational conflict between and amongst health professionals. Patients managed under Contact Precautions feel powerless and unable to influence their own care, they feel stigmatised and excluded, and they worry about being a danger to others whilst noticing their own care to be compromised.

Unlike Contact Precautions, COVID-19 restrictions were required in law, and cases of the virus are listed as a notifiable communicable disease (Communicable Diseases Network of Australia, 2022). This has never been the case for MRSA in Australia, although healthcare jurisdictions require MRSA infections to be reported within jurisdictional reporting structures that monitor patient safety outcomes (NSW Health, 2020b). COVID-19 restrictions are acknowledged to have significantly interrupted SARS-CoV-2 transmission within the country during 2020 and 2021 (Stobart & Duckett, 2022) whereas strong evidence for the efficacy of Contact

Precautions in preventing MRSA transmission does not exist (Schrank et al., 2019; Young et al., 2019).

SARS-CoV-2 vaccination, monoclonal antibody infusions and anti-viral treatment options became available in a short period of time (National COVID-19 Clinical Evidence Taskforce, 2022). Similarly, within 18 months more was understood about the transmission of this novel virus. Evidence-based guidelines for COVID-19 infection prevention and control were prioritised and promptly made available, and are frequently revised to accommodate new understandings (Clinical Excellence Commission, 2022).

The last two years have seen increased recognition of the detrimental impacts of restrictive COVID-19 public health measures on individuals and communities. Political leaders considered the need to balance the benefits of the restrictions against the harms (particularly economic harms) that were caused by the restrictions, compared with possible harms caused by the virus itself (Snow & Cormack, 2022). This reassessment and rebalancing of risks and benefits, including improving understanding of what burdens are borne and by whom, is a fundamental expectation of ethical public health policy and practice (Bryan et al., 2007; Callahan & Jennings, 2002; Gostin et al., 2003). SARS-CoV-2 treatment options are now available and increasing levels of herd immunity have been achieved through vaccination or natural infection. These factors reduce the reliance on restrictive measures to protect the public health. They also mean that the balance between the benefits provided by restrictive socio-economic measures and the harmful and inequitable burdens imposed on individuals and the community as a whole, becomes an important consideration in decision making. In the case of COVID-19 response in Australia this rebalancing is evident.

Conversely, the balancing of risks and benefits, and consideration of the ethical standing of the controls imposed to reduce risks associated with MRSA transmission, has not yet been given due consideration. This despite more than quarter of a century of criticism (Deresinski, 2018; Herwaldt, 1996; Young et al., 2019; Zastrow, 2011).

Whilst the control measures imposed to restrict the numbers of COVID-19 cases, hospitalisations, and deaths, were effective, Contact Precautions for the management of MRSA in hospitals are not proven to be effective (Khader, Thomas, Huskins, et al., 2021). When Contact Precautions are relaxed there is no increase

in MRSA infections or colonisations (Bearman et al., 2018; Renaudin et al., 2017; Schrank et al., 2019).

The financial costs of COVID-19 restrictions have been substantial (O'Sullivan et al., 2020). Similarly, the financial costs of the application of Contact Precautions for the management of MRSA will have been enormous over time (Martin et al., 2016; Roth et al., 2017), but the scale of the economic burden of Contact Precautions are not well understood because data is limited, and studies are described as methodologically flawed (Birgand et al., 2016). The environmental impact of COVID-19 PPE requirements is receiving attention now (Zhang et al., 2021), however the environmental impact of the use of the PPE required for Contact Precautions has not previously been discussed in depth.

COVID-19 vaccination rates in Australia are impressive with 94% of the eligible NSW population now double vaccinated and 25% having received their booster (Government of Australia, 2022; NSW Government, 2022). After almost two years of enduring the significant social, economic, and psychological impacts of COVID-19 restrictions in Australia, political imperatives have led to them being substantially relaxed (Snow & Cormack, 2022).

The movement that is being seen in the approach to COVID-19 is one that has not been witnessed in healthcare policies for the management of patients found to be colonised or infected with MRSA.

The value of this thesis is that it is an example of empirical ethical research into a practice that is so entrenched into healthcare practice that its ethical implications have been largely hidden (Strong et al., 2010). The belief that Contact Precautions effectively prevent MRSA infections is an enduring myth that has supported ongoing harm to cohorts of colonised individuals and to the healthcare system as a whole (Young et al., 2019).

Balancing of the risks and benefits of every policy that is founded on the precautionary principle is a necessary requirement for ethical practice (Gostin et al., 2003). Effective balancing requires policy makers, and governing bodies to develop systems and processes for monitoring the expected benefits of the policy and actively identify and evaluate any emergent harms that are created by the policy. Consideration of how much of a burden is acceptable and whether inequalities in the detrimental or beneficial impacts of the control measures require a dynamic

approach to be taken, and a commitment to restructuring the approach as necessary so that harms do not outweigh benefits (Adams & Miles, 2013; Desclaux et al., 2017).

Towards the end of 2021, such a rebalancing led to the significant relaxation of COVID-19 restrictions in NSW with the result that at the time of writing this reflection, the health system in which I work is enormously challenged by the numbers of patients who have COVID-19 infection.

The tightly controlled restrictions in place until mid-December 2021 were effective at maintaining incidence of COVID-19 cases to small numbers. Ten days before Christmas, the NSW Premier all but removed restrictions (Snow & Cormack, 2022). Social events and hospitality venues were full of Christmas revellers excited to be able to socialise for the first time in almost two years. Predictably, COVID-19 case numbers increased exponentially, to the extent that COVID-19 testing stations had to close because the laboratories could not process the quantity of tests within the contractually agreed test result turn-around times (Murray et al., 2022). Hospitals in NSW have moved from having minimal numbers of patients with COVID-19 admitted to almost 3000 at the time of writing (23rd January 2022) (NSW Government, 2022). Healthcare staffing has been significantly compromised as a result of staff becoming infected in the community or at work and the isolation requirements that are applied to cases and to their close contacts (Kennedy, 2021).

The intended benefits of allowing people to enjoy Christmas together has had the foreseeable consequence of increasing the number of people requiring hospitalisation and threatening the health and lives of many more people than would have occurred had the restrictions been retained. It appears that economic benefits and social contact have been privileged over prudent measures to ensure the viability of the health care system and to minimise loss of life.

The impacts of relaxation of the restrictions apply similarly to other industries. Logistics and manufacturing businesses have been unable to maintain supply chain due to staff illness and furlough due to their close contact status and associated isolation requirements. Supermarket shelves are bare at times (Butler, 2022).

This predicament demonstrates the value of the precautionary principle and the need for careful consideration of the timeframe for reducing control measures. Care must be taken to avoid relaxing precautions before enough is understood about the novel emerging pathogen and its transmission pathways as well as the capacity of the health system and other infrastructure to manage consequences of the infection

and necessary ongoing public health measures. This is demonstrated by the increase in the incidence of COVID-19 infections and the resultant pressures that have been exerted on healthcare and other industries, and families who have lost income or lives, since relaxation of the restrictions.

This thesis does not argue that Contact Precautions were never ethically justified. It argues that the continued use of Contact Precautions in the control of MRSA transmission in hospitals is no longer ethically justified. This argument is supported by the identification of several significant harms that are exerted on individuals and on the healthcare system, by the practice. Almost 40 years of research has failed to provide evidence that Contact Precautions are an effective means of preventing MRSA transmission in hospitals (Young et al., 2019), and recent studies have confirmed that removal of Contact Precautions does not lead to increased incidence of MRSA colonisation or infection (Bearman et al., 2018).

The significant relaxation of COVID-19 restrictions in NSW just prior to Christmas 2021 was arguably premature and misguided. However, in the context of MRSA there has been more than enough time, and more than enough evidence has been presented to justify removing Contact Precautions from MRO policy frameworks. Standard infection prevention and control precautions applied equally and equitably in the care of all patients will be effective.

Infection prevention and control policy makers and clinical leaders have a responsibility to act and to apply the same balancing of risk and benefits to Contact Precautions for the management of MRSA that political leaders have applied to SARS-CoV-2 control, with the benefit of fifty years of experience with the pathogen.

In the case of MRSA, the precautionary principle was appropriate in 1983, but now more is understood about the minimal benefits compared with multi-factorial harms, continuation of the practice cannot be ethically justified.

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Appendices

Appendix A: Literature search 28th March 2021

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
MRO pathogenicity			
Bickenbach et al. (2018)	Observational study comparing survival rates between MRO and non-MRO ICU patients	<ul style="list-style-type: none">MRO no more pathogenic than sensitive strain of same pathogen.Infection risk associated with colonisation with sensitive as well as resistant strain	Ethical impacts of study findings are not discussed
Kim et al. (2018)	Meta-analysis review of reports of community-associated <i>S. aureus</i> colonisation and disease		
Dietrich et al. (2017)	Single-centre retrospective chart review		
Benefits of Contact Precautions			
Jesus et al. (2019)	Qualitative, semi-directed interview, vulnerability theoretical frame (N=19) and Bardin content analysis	<ul style="list-style-type: none">Privacy and quietness of single rooms makes them generally advantageous.	Ethical impacts of study findings are not discussed
Taylor et al. (2018)	Systematic literature review of 43 papers published since 2016		
Harm attributed to Contact Precautions			
Wijnakker et al. (2020)	Quantitative questionnaire survey of 31 hospital patients	<ul style="list-style-type: none">Minimal evidence of stigma or psychological harmContact Precautions lead to increased adverse events	Ethical impacts of study findings are not discussed
Tran et al. (2017)	Retrospective, propensity-score matched cohort study comparing patients isolated for MRSA (N=745) with non-isolated patients (N=17,649)		
Currie et al. (2018)	Qualitative systematic review of 17 studies describing adult patients' experience of healthcare associated infection	<ul style="list-style-type: none">Contact Precautions undermine wellbeing in patients, caregivers, and staff.Includes significant stigma or psychological harm.Effect extends beyond hospital	Ethical impacts of study findings are not discussed
Eli et al. (2020)	Qualitative, semi-structured interviews (N=24)		
Granzotto et al. (2020)	Case-control study comparing levels of depression and anxiety in patients in Contact Precautions (N=68) vs those not in Contact Precautions (N=73)		

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
Guilley-Lerondeau et al. (2017)	Prospective matched cohort study comparing patient satisfaction and anxiety in patients in Contact Precautions (N=30) vs those not in Contact Precautions (N=60)	discharge and impacts on patients' relationships	Ethical impacts of study findings are not discussed
Heckel et al. (2017)	Qualitative, grounded theory, interviews and focus group, describes experiences of Contact Precautions in palliative care patient family caregivers (N=62)		
Bushuven et al. (2019)	Qualitative, group discussions with health professionals to assess their perceptions of MRO management (N=51)		
Hereng et al. (2019)	Qualitative study of patients' feelings after hospitalisation when MRO colonised (N=11)		
Hossain et al. (2020)	Systematic review of publications describing mental health outcomes of quarantine or isolation in any population (N=8)		
Jesus et al. (2019)	Qualitative, semi-directed interview, vulnerability theoretical frame (N=19) and Bardin content analysis		
Mutsonziwa et al. (2021)	Qualitative study into nurses' perceptions of how MRO colonised patients experience isolation (N=16)		
Purssell et al. (2020)	Systematic review of impact of isolation on hospital inpatients, with meta-analysis (N=38)		
Rump et al. (2017)	Questionnaire survey of patients colonised with MRSA, to assess their degree of stigma (N=57)	<ul style="list-style-type: none"> Contact Precautions undermine wellbeing, autonomy, health, and social justice 	Well-being, autonomy, and justice
Rump et al. (2018)	Analysis of inquiries to Dutch CICI by people reporting negative implications of MRO colonisation and control measures (N=227)		

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
Andreassen et al. (2017)	Matched case control method comparing length of stay, 30-day readmissions, and DRG costs of MRSA colonised (N=95) vs non-colonised (N=346) patients	<ul style="list-style-type: none"> Contact Precautions lead to increased length of stay 	Ethical impacts of study findings are not discussed
Searcy et al. (2018)	Retrospective chart review comparing patients in isolation due to MRSA colonisation (N=114) vs non-isolated patients (N=112)		
Andreassen et al. (2017)	Matched case control method comparing length of stay, 30-day readmissions, and DRG costs of MRSA colonised (N=95) vs non-colonised (N=346) patients	<ul style="list-style-type: none"> Contact Precautions lead to increased financial costs and resource pressures 	Ethical impacts of study findings are not discussed
Bushuven et al. (2019)	Qualitative, group discussions with health professionals to assess their perceptions of MRO management (N=51)		
Engler-Hüsch et al. (2018)	Multi-variate analysis of costs of healthcare per case for patients colonised with an MRO (N=2006) compared to those not colonised (N=7917)		
van Dijk et al. (2020)	Observational study of direct costs of care for patients isolated for an MRO (N=26)		
Tran et al. (2017)	Retrospective, propensity-score matched cohort study comparing patients isolated for MRSA (N=745) with non-isolated patients (N=17,649)		
Roth et al. (2017)	Prospective evaluation of direct costs associated with Contact Precautions using on-site observation (N=10)		
DalBen (2018)	Commentary		
Schrank et al. (2019)	Retrospective quasi-experimental analysis before and after study into MRSA and VRE transmission (May 2015 – April 2017)		
Rump et al. (2018)	Analysis of inquiries to Dutch CICD by people reporting negative implications of MRO colonisation and control measures (N=227)	<ul style="list-style-type: none"> Contact Precautions associated with interrupted 	Ethical impacts of study findings are not discussed

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
Currie et al. (2018)	Qualitative systematic review of 17 studies describing adult patients' experience of healthcare associated infection	healthcare and decreased access to services	
Datta and Juthani-Mehta (2017)	Commentary		
Guilley-Lerondeau et al. (2017)	Prospective matched cohort study comparing patient satisfaction and anxiety in patients in Contact Precautions (N=30) vs those not in Contact Precautions (N=60)	<ul style="list-style-type: none"> Contact Precautions associated with decreased satisfaction 	Ethical impacts of study findings are not discussed
Barker et al. (2017)	Prospective study comparing time burdens for staff undertaking care under Contact Precautions (N=588) vs other patients (N=470)	<ul style="list-style-type: none"> Contact Precautions associated with increased time for HCW 	Ethical impacts of study findings are not discussed
Hamill et al. (2017)	Examination of relationship between Contact Precautions, and UTI and pneumonia as infectious complications in trauma patients (N=4423)	<ul style="list-style-type: none"> Increased pneumonia and UTI in isolated patients 	Ethical impacts of study findings are not discussed
Martin, Bryant, et al. (2018)	Retrospective, nonrandomised, observational, quasi-experimental study (N=50,268)	<ul style="list-style-type: none"> Adverse events reduced on discontinuation of Contact Precautions 	Ethical impacts of study findings are not discussed
No harm attributable to Contact Precautions			
Bickenbach et al. (2018)	Observational study comparing survival rates between MRO and non-MRO ICU patients	<ul style="list-style-type: none"> No difference in mortality, secondary infection, or ventilator-free days in MRO patients in ICU 	Ethical impacts of study findings are not discussed
Efficacy of Contact Precautions in reducing MRO transmission shown			
Khader, Thomas, Stevens, et al. (2021)	Retrospective cohort study using mathematical modelling applied to >2million admissions from May 2019 to December 2020	<ul style="list-style-type: none"> Contact Precautions responsible for reduction in MRO transmission, (quality of studies 	Ethical impacts of study findings are not discussed
Martin, Rubin, et al. (2018)	Commentary		

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
French et al. (2017)	Systematic review of 98 reports of CPE outbreaks 2000-2015	noted to be variable).	
Iordanou et al. (2021)	Prospective cohort study employing universal Contact Precautions to all patients admitted to an ICU (October 2018 – February 2019)		
Johnstone et al. (2020)	Quasi-experimental time series study of VRE bloodstream infections in hospitals that employed Contact Precautions in VRE management (N=77) vs those that did not (N=23)	<ul style="list-style-type: none"> Increase in VRE BSI rates following discontinuation of Contact Precautions and active screening 	Ethical impacts of study findings are not discussed
Efficacy of Contact Precautions not shown			
Ho et al. (2017)	Retrospective analysis of MRO infections in a burns unit, before and after implementation of Contact Precautions (N=340 patients)	<ul style="list-style-type: none"> Universal Contact Precautions not associated with significant change in MRO rates 	Ethical impacts of study findings are not discussed
Bardossy et al. (2017)	Retrospective study comparing MRSA and VRE healthcare associated infection rates after discontinuation of Contact Precautions (N=77,346 patients over 2 years)	<ul style="list-style-type: none"> No increase in MRO rates following discontinuation of Contact Precautions 	Ethical impacts of study findings are not discussed
Bearman et al. (2018)	Interrupted time series analysis using segmented regression modelling (between 2011 and 2016)		
Kleyman et al. (2021)	Systematic literature review and risk ratio analysis evaluating discontinuation of Contact Precautions for MRSA and VRE (N=17)		
Marra et al. (2018)	Systematic literature review and meta-analysis (N=14)		
Thompson et al. (2020)	Observational before and after study using healthcare infection surveillance systems Jan 2014-Nov2015 compared with Dec 2015-Aug 2017 when Contact Precautions discontinued		
Renaudin et al. (2017)	Prospective noninferiority before-and-after study		

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
	comparing 2 periods: January 1, 2012, to January 31, 2014 (the Contact Precautions period N=1547 patients) and February 1, 2014, to February 29, 2016 (the Standard Precautions period N=1577 patients)		
Metan et al. (2017)	Descriptive comparative study of ESBL transmission before and after discontinuation of Contact Precautions		
Khader, Thomas, Huskins, et al. (2021)	Retrospective study employing multivariate meta-regression analysis of the impact of Contact Precautions on MRSA and VRE transmission in ICU (N=10,579 ICU admissions, 2332 patients in Contact Precautions)		
Haessler et al. (2020)	Retrospective multicentre interrupted time series study comparing healthcare associated infection rates between 2002 and 2017, before and after discontinuation of Contact Precautions		
Banach et al. (2018)	Expert guidance document	<ul style="list-style-type: none"> Limited data on efficacy of Contact Precautions 	Ethical impacts of study findings are not discussed
Furuya et al. (2018)	Comparative effectiveness approach applied to a clinical research database 2006 to 2014	<ul style="list-style-type: none"> Decreases in MROs over time more likely due to other factors than universal Contact Precautions 	Ethical impacts of study findings are not discussed
Ethical aspects of Contact Precautions			
Alfandre et al. (2020)	Commentary	<ul style="list-style-type: none"> Ethical aspects relating to infection prevention and control and Contact Precautions discussed. 	Respect for autonomy
Day and Stream (2018)	Commentary		Respect for autonomy, justice, beneficence, non-maleficence

Reference	Type of paper including strengths and limitations	Summarised findings and authors' conclusions	Bioethical principles considered by authors
Dickmann et al. (2017)	Commentary	<ul style="list-style-type: none"> Includes specific reference to respect for autonomy, justice, and ethical conflicts prompted by individual versus population approach to MRO management and antimicrobial resistance 	Justice
Harris et al. (2019)	Commentary		Respect for autonomy, justice, beneficence, non-maleficence, precautionary principle, principle of double effect
Hostiuc et al. (2018)	Commentary		Respect for autonomy, justice, non-maleficence, precautionary principle, principle of double effect
Vassal et al. (2017)	Commentary		Respect for autonomy
Voo and Lederman (2020)	Commentary		Justice
Verweij et al. (2020)	Commentary		Justice

Appendix B: Participant information sheets

PARTICIPANT INFORMATION SHEET – Hospital patient



Date: March 2019

Joanna Harris
c/o Level 1, Lawson House
Wollongong Hospital 2500 NSW

Telephone: 041
Facsimile: 02 4225367
Email:
Joanna.Harris@utas.edu.au

Full Project Title:

Exploration of the ethical impact of Contact Precautions on hospital inpatients and on the healthcare workers who are required to follow them, in order to collaboratively develop an ethically sound framework for the care of hospital inpatients identified as colonised with a multi-resistant organism.

Researchers:

Student researcher:

Joanna Harris, Nurse Manager, Illawarra Shoalhaven Local Health District (ISLHD), Infection Management and Control Service (IMACS); PhD candidate University of Tasmania (UTAS).

Supervisors:

Hazel Maxwell, Health Lecturer in Health Sciences, University of Tasmania. Telephone +61 (0)2 8572 7967 or 04 email hazel.maxwell@utas.edu.au

Ken Walsh, Professor of Translational Research in Nursing and Midwifery, University of Tasmania. Telephone: +61 0419 380572 email Kenneth.Walsh@utas.edu.au

Susan Dodds, Dean and Professor of Philosophy, Faculty of Arts & Social Sciences, University of NSW. Telephone: +61 (0) 2 9385 0580 email Susan.Dodds@unsw.edu.au

My name is Joanna Harris and I have a number of years' experience working as an Infection Prevention and Control nurse and manager of the Infection Management and Control Service (IMACS) for the Illawarra Shoalhaven Local Health District. I am currently undertaking research towards a PhD in Nursing with the University of Tasmania.

I am writing to invite you to take part in my research project. This participant information sheet contains detailed information about the research project overall. Its purpose is to explain the project to you as openly and clearly as possible so that you can decide whether or not you are interested in taking part.

Please read this information carefully and if you wish to take part please complete your details on the last page of this form and give to the ward staff before you leave the hospital.

Once I receive your form I will make contact with you so that you can ask me any questions that you may have prior to signing a consent form.

Please keep a copy of this Participant Information sheet as a record.

PARTICIPANT INFORMATION SHEET – Hospital patient

Research Design

Across the world there are hospital policies that describe how we should treat and care for people who have an antibiotic resistant bacteria (eg methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant *Enterococci* (VRE)), in or on their body. We call these practices Contact Precautions.

I am doing this research to find out what effect Contact Precautions have on a patient's ability to make choices, what patients experience when they are isolated in a single room, and what you felt like when this happened to you.

I am also interested in hearing your suggestions about improving the way that we do infection prevention and control in hospitals to make our practices ethically better if we need to.

In order to explore this subject I will be asking both patients and healthcare workers about their personal experiences of the use of Contact Precautions.

I am inviting you to join this research as I understand that you have been isolated in a single room because of having an antibiotic resistant bacteria while you were in hospital. Although I am aware of this, it is important that you understand that I do not have any knowledge of the reason you were in hospital at this time. Please note that I am not in a position to comment on, or have any influence on the future or past management of the medical condition that led to your hospital admission.

The first stage of the research will be done through face to face interviews between you and me at a time and a place we are both happy with. If you have one or two family members who would like to join you for this interview that will be fine. Their memories of your experiences of Contact Precautions during your hospital stay will also be useful. I expect that each interview might last about an hour.

After our first interview I may be in touch with you again. This will be so that I can check that I have properly understood and recorded your experiences and so that I can compare your story with what other patients tell me in their interviews. Some of the things you have experienced will also have happened to the other patients I speak with. Some things might just have happened to you. It is important for me to hear every person's individual story and to use them all accurately when I do my report.

After all of the interviews are done I will share my report of the findings with you, and invite you to join a focus group which will last for about 90 minutes. This focus group will involve other patients as well as staff to discuss if there is a need for the management of hospital patients with a multi-resistant organism to be improved, and if so, what kind of changes would patients and staff like to see. It is likely that this focus group will take place a number of months after our first interview.

The interviews and the focus groups will be digitally audio-taped and then written down exactly as the words are said. I will also make written notes immediately after our meeting so that I can remember how the interview went, and any important things that I notice or that we discuss.

Quotes may be used for accurate reporting of your experiences and your views. Confidentiality of who said what will be maintained throughout the process. You will not be named in any publication or presentation used to share the findings of this research.

Participation is Voluntary

Your participation in this research is voluntary, thus you are free to decline this invitation, or, after joining, you are free to withdraw from the research at any time. You can do this by contacting me on 0404 096100 or emailing Joanna.Harris@utas.edu.au

If you decide to join this study by sharing your experiences there will be no obligation on you to take part in more than one interview, or to continue to the focus group. If you decide not to participate or to withdraw, this will not affect your relationship with me, nor with other staff members within Illawarra Shoalhaven Local Health District.

Once the interviews and focus group is finished all discussions will be collated, themed and a report written. It would be difficult to withdraw any information you provided at that point as it will not be possible to identify you at this stage of the study.

Participant Information (patient)- Towards the collaborative development of ethically sound policies for the management of hospital patients colonised with a multi-resistant organism – 2019 2
v.3

Possible Risks

There is a slight risk that you might find it difficult or distressing to tell me about your experiences. Should this happen, either during or following the interview or focus group, I will arrange for you to be offered further information and support. I am an experienced nurse and can also make arrangements for you to talk to a member of my team of nurses or doctors, if this is needed.

Privacy, Confidentiality and Disclosure of Information

The information you give to me will be put together with other patients' stories and feedback from our staff. All of this information will be used to understand ethical aspects of Contact Precautions and then to develop a plan of action. Confidentiality of all participants in this study will be ensured in any magazine publication or conference presentation.

The data from this study will be stored for 5 years and then destroyed. For paper documents this will be by shredding. Computer files and audio tape recordings will be deleted.

Results of Project

The study is expected to commence during 2017 and will extend throughout 2018. It is likely that the results will be published by the end of 2019. You will be offered the report once it has been finalised.

It is intended that the findings of this study will be shared through publication in professional and specialty journals, and through presentation at local, national and international conferences.

Please note that it may not be possible for the improvements that are suggested at the focus group to be immediately put into clinical practice as a result of this research. This is because the policies that we follow are determined by NSW Health. The purpose of this research is to be able to influence improvements in future policies if we find that this is necessary.

Further Information

If you have any enquiries regarding the conduct of this research please contact Joanna Harris on 04 () or at Joanna.Harris@utas.edu.au

Other Issues

If you have any questions or concerns about your rights as a participant in this study or complaints about how the study is being run and you wish to speak to an independent person, please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (02) 4221 4457 quoting reference number 2017/324. This study has also been approved by the Tasmanian Health and Medical Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study you should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote UTAS H0016918.

Ethical Guidelines

The ethical aspects of this research project have been reviewed by the Human Research Ethics Committee for the Illawarra Shoalhaven Local Health District, the University of Tasmania, Wollongong Hospital, Shellharbour Hospital and the Shoalhaven Hospital.

EXPRESSION OF INTEREST

☐ Yes please, I would like to be able to speak with you about joining this research project.

My name is

Please contact me so that I can learn more about it. The best way to contact me is:-

Phone.....

Email address.....@.....

Other

PARTICIPANT INFORMATION SHEET – HEALTH PROFESSIONAL



Health
Illawarra Shoalhaven
Local Health District



**UNIVERSITY of
TASMANIA**

Joanna Harris
c/o Level 1, Lawson House
Wollongong Hospital 2500 NSW

Telephone: 04
Facsimile: 02 4225367

Email: Joanna.Harris@utas.edu.au

Date: March 2019

Full Project Title:

Exploration of the ethical impact of Contact Precautions on hospital inpatients and on the healthcare workers who are required to follow them, in order to collaboratively develop an ethically sound framework for the care of hospital inpatients identified as colonised with a multi-resistant organism.

Researchers:

Student researcher:

Joanna Harris, Nurse Manager, Illawarra Shoalhaven Local Health District (ISLHD), Infection Management and Control Service (IMACS); PhD candidate University of Tasmania (UTAS).

Supervisors:

Hazel Maxwell, Health Lecturer in Health Sciences, University of Tasmania. Telephone +61 (0)2 8572 7967 or 0407661830 email hazel.maxwell@utas.edu.au

Ken Walsh, Professor of Translational Research in Nursing and Midwifery, University of Tasmania. Telephone: +61 04 email: Kenneth.Walsh@utas.edu.au

Susan Dodds, Dean and Professor of Philosophy, Faculty of Arts & Social Sciences, University of NSW. Telephone: +61 (0) 2 9385 0580 email: Susan.Dodds@unsw.edu.au

My name is Joanna Harris and I have a number of years' experience working as an Infection Prevention and Control nurse and manager of the Infection Management and Control Service (IMACS) for the Illawarra Shoalhaven Local Health District. I am currently conducting research towards a PhD in Nursing at the University of Tasmania.

I am writing to invite you to take part in my research project. This participant information sheet contains detailed information about the research project overall. Its purpose is to explain the project to you as openly and clearly as possible so that you can decide whether or not you are interested in taking part. Your involvement will help me to understand what it is like for health professionals to care for patients colonised or infected with a multi-resistant organism. This work aims to be a collaboration rather than a critique of your practice.

If you wish to take part please complete your details on the last page of this form and send it to me in my office in Lawson House, Wollongong Hospital (address above). Once I receive your form I will make contact with you so that you can ask me any questions that you may have prior to signing a consent form. Please sign the Consent Form only after you have had a chance to ask your questions and have received satisfactory answers.

HCW Participant Information- Towards the collaborative development of ethically sound policies for the care of hospital patients colonised with a multi-resistant organism – 2019 1

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PARTICIPANT INFORMATION SHEET – HEALTH PROFESSIONAL

If you do decide to decline this invitation or to withdraw from the study for any reason, this will not influence or interfere with any of your employment conditions, or your ongoing relationship with the ISLHD infection prevention and control team.

Please keep a copy of this Participant Information sheet as a record.

Research Design

Across the world there are hospital policies that describe how we should treat and care for people who have an antibiotic resistant bacteria (eg methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant Enterococci (VRE)), in or on their body. We call these practices Contact Precautions.

For this research I will be asking both patients and healthcare workers about their personal experiences of the use of Contact Precautions in the care of hospital patients who are colonised with a multi-resistant organism (MRO). You are invited to take part as we recognise your experience in working with patients being managed under Contact Precautions within ISLHD.

The initial stage of the research will be done through face to face interviews between you and me at a venue that we are both happy with. I expect that each interview might last about an hour. After our first interview I may be in touch with you again. This will be so that I can check that I have properly understood and recorded your experiences and so that I can compare your story with what other staff tell me in their interviews. Some the things you have experienced will also have happened to the other people I speak with. Some things might just have happened to you. It is important for me to hear every person's individual story and to use them all accurately when I do my report.

After all of the interviews are done I will share my report of the findings with you, and invite you to join a focus group which will last for about 90 minutes. This focus group will involve patients as well as staff to discuss if there is a need for the management of hospital patients with a multi-resistant organism to be improved, and if so, what kind of changes would patients and staff like to see. It is likely that this focus group will take place a number of months after our first interview.

The interviews and the focus groups will be digitally audio-taped and then written down exactly as the words are said. I will also make written notes immediately after our meeting so that I can remember how the interview went, and any important things that I notice or that we discuss.

Quotes may be used for accurate reporting of your experiences and your views. Confidentiality of who said what will be maintained throughout the process. You will not be named in any publication or presentation used to share the findings of this research.

Participation is Voluntary.

Your participation in this research is voluntary, thus you are free to decline this invitation, or, after joining, you are free to withdraw from the research at any time. You can do this by contacting me on 04 or emailing Joanna.Harris@utas.edu.au

If you decide to join this study by sharing your experiences there will be no obligation on you to take part in more than one interview, or to continue to the focus group.

If you decide not to participate or to withdraw, this will not affect your relationship with me, other staff members nor your employment within Illawarra Shoalhaven Local Health District.

Once the interviews and focus group is finished all discussions will be collated, themed and a report written. It would be difficult to withdraw any information you provided at that point as it will not be possible to identify you at this stage of the study.

Possible Risks

There is a slight risk that you might find it difficult or distressing to tell me about your experiences. Should this happen, either during or following the interview or focus group, I will ensure that you are offered further information and support. I am an experienced nurse and can also make arrangements for you to talk to a member of my team of nurses or doctors, if this is needed. As an employee of ISLHD you can also use the services of the Employee Assistance Program (phone number 1300 727 308).

PARTICIPANT INFORMATION SHEET – HEALTH PROFESSIONAL

Privacy, Confidentiality and Disclosure of Information

The information you give to me will be put together with patients' stories and feedback from other members of staff. All of this information will be used to understand ethical aspects of Contact Precautions and then to develop a plan of action. Confidentiality of all participants in this study will be ensured in any professional journal publication or conference presentation.

The data from this study will be stored for 5 years and then destroyed. For paper documents this will be by shredding. Computer files and audio tape recordings will be deleted.

Results of Project

The study is expected to commence during 2017 and will extend throughout 2018. It is likely that the results will be published by the end of 2019. You will be offered the report once it has been finalised. It is intended that the findings of this study will be shared through publication in professional and specialty journals, and through presentation at local, national and international conferences.

Please note that it may not be possible for the improvements that are suggested at the focus group to be immediately put into clinical practice as a result of this research. This is because the policies that we follow are determined by NSW Health. The purpose of this research is to be able to influence improvements in future policies if we find that this is necessary.

Further Information

If you have any enquiries regarding the conduct of this research please contact Joanna Harris on 041 or at Joanna.Harris@utas.edu.au

Other Issues

If you have any questions or concerns about your rights as a participant in this study or complaints about how the study is being run and you wish to speak to an independent person, please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (02) 4221 4457 quoting reference number 2017/324. This study has also been approved by the Tasmanian Health and Medical Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study you should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote UTAS H0016918

Ethical Guidelines

The ethical aspects of this research project have been reviewed by the Human Research Ethics Committee for the Illawarra Shoalhaven Local Health District, the University of Tasmania, Wollongong Hospital, Shellharbour Hospital and the Shoalhaven Hospital.

EXPRESSION OF INTEREST

☐ Yes please, I would like to be able to speak with you about joining this research project.

My name is

Please contact me so that I can learn more about it. The best way to contact me is:-

Phone.....

Email address.....@.....

Other

HCW Participant Information- Towards the collaborative development of ethically sound policies for the care of hospital patients colonised with a multi-resistant organism – 2019 3

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Appendix C: Research consent forms



CONSENT FORM FOR.....(name) Hospital Patient / family

RESEARCH TITLE: Exploration of the ethical impact of Contact Precautions on hospital inpatients and on the healthcare workers who are required to follow them, in order to collaboratively develop an ethically sound framework for the care of hospital inpatients identified as colonised with a multi-resistant organism.

STUDENT RESEARCHER: JOANNA HARRIS

I have been given information about this research into the ethical impact of Contact Precautions and discussed the research project with Joanna Harris who is conducting this research as part of a PhD in Nursing.

Joanna is undertaking this research under the supervision of Dr Hazel Maxwell, Health Lecturer at the University of Tasmania, Prof. Ken Walsh, Adjunct Professor of Nursing and Midwifery at the University of Tasmania and Prof. Susan Dodds, Dean and Professor of Philosophy, Faculty of Arts & Social Sciences at the University of NSW.

I have been advised of the potential risks and burdens associated with this research. I understand that participation in the research will involve discussing my experience of Contact Precautions in the management of antibiotic resistant bacteria at a hospital managed by the Illawarra Shoalhaven Local Health District in one or more of the following:

- Initial interview
- Follow up interviews,
- Participation in a Focus Group .

I understand that the interviews and focus groups will be audio-taped and transcribed.

I have had an opportunity to ask any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I have been invited to participate and I am free to withdraw from the research at any time.

My non-participation or withdrawal of consent will not affect my treatment in any way, my relationship with the hospital staff who managed my care, or any that might do so in the future.

If I have any enquiries about the research, I can contact Joanna Harris on 04.. or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4..... or email rso-ethics@uow.edu.au quoting reference number 2017/324.

As this study has also been approved by the Tasmanian Health and Medical Human Research Ethics Committee, I understand that if I have concerns or complaints about the conduct of this study I should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. I have been provided with the UTAS HREC project number H0016918.

By signing below I am indicating my consent to (please tick):

- ☐ One interview lasting approximately one hour, to share my experience of Contact Precautions at a hospital managed by the Illawarra Shoalhaven Local Health District
- ☐ Follow up interviews to further share my experience of Contact Precautions
- ☐ One or two close members of my family joining the interview if I wish
- ☐ Joanna gaining access to my health record to verify that laboratory tests confirm that I have been found to have an antibiotic resistant organism
- ☐ Joanna gaining access to my health record to confirm that I have experienced Contact Precautions during my hospital admission
- ☐ The recording of personal details including my name, address and contact number, date of birth, gender and dates of the most recent hospital admission, for use in this research.

I understand that the data collected from my participation will be used for Joanna's PhD thesis, publication in professional journals and conference presentations, and I consent for it to be used in that manner.

Signed / Date

...../...../.....

Name (please print)

.....



CONSENT FORM FOR.....(name) Health Professional

RESEARCH TITLE: Exploration of the ethical impact of Contact Precautions on hospital inpatients and on the healthcare workers who are required to follow them, in order to collaboratively develop an ethically sound framework for the care of hospital inpatients colonised with a multi-resistant organism.

STUDENT RESEARCHER: JOANNA HARRIS

I have been given information about this research into the ethical impact of Contact Precautions and discussed the research project with Joanna Harris who is conducting this research as part of a PhD in Nursing.

Joanna is undertaking this research under the supervision of Dr Hazel Maxwell, Health Lecturer at the University of Tasmania, Prof. Ken Walsh, Adjunct Professor in Nursing and Midwifery at the University of Tasmania and Prof. Susan Dodds, Dean and Professor of Philosophy, Faculty of Arts & Social Sciences at the University of NSW.

I have been advised of the potential risks and burdens associated with this research. I understand that participation in the research will involve discussing my experience of Contact Precautions in the management of antibiotic resistant bacteria at a hospital managed by the Illawarra Shoalhaven Local Health District in one or more of the following:

- Initial interview
- Follow up interviews,
- Participation in a Focus Group.

I understand that the interviews and focus groups will be audio-taped and transcribed.

I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.

I understand that the researchers will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.

I have had an opportunity to ask any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I have been invited to participate and I am free to withdraw from the research at any time.

My non-participation or withdrawal of consent will not influence or interfere with any of my employment conditions, or my ongoing relationship with the infection prevention and control team.

If I have any enquiries about the research, I can contact Joanna Harris on 04..... or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 42..... or email rso-ethics@uow.edu.au quoting reference number 2017/324.

As this study has also been approved by the Tasmanian Health and Medical Human Research Ethics Committee, if I have concerns or complaints about the conduct of this study I understand that I should also contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au . The Executive Officer is the person nominated to receive complaints from research participants. I have been provided with the UTAS HREC project number H0016918

By signing below I am indicating my consent to (please tick):

- ☐ One interview lasting approximately one hour, to share my experience of Contact Precautions.
- ☐ Follow up interviews to further share my experience of Contact Precautions
- ☐ Participation in a Focus Group about the use of Contact Precautions
- ☐ The recording of personal details including my name, address and contact number, date of birth, gender and professional occupation, for use in this research.

I understand that the data collected from my participation will be used for Joanna's PhD thesis, publication in professional journals and conference presentations, and I consent for it to be used in that manner.

Signed / Date

...../...../.....

Name (please print)

.....

Appendix D: Poster presented at ACIPC conference, Brisbane (Harris, 2018)

The following abstract was submitted for peer review and was accepted for poster presentation at the Australasian College of Infection Prevention and Control (ACIPC) conference in Brisbane, Australia in November 2018.

AUTONOMY AND JUSTICE; EXPERIENCES OF PATIENTS AND CLINICIANS EXPERIENCING CONTACT PRECAUTIONS IMPLEMENTED TO MANAGE HOSPITAL TRANSMISSION OF MULTI-RESISTANT ORGANISMS

Joanna Harris

Illawarra Shoalhaven Local Health District, Warrawong, Australia

Introduction: Respect for autonomy, and Justice are fundamental bioethical principles demonstrated in activities such as disclosure of information that enables hospital patients to make informed decisions relating to their care. Contemporary infection prevention and control principles require patients identified as colonised with a multi-resistant organism (MRO) to be informed so that they fully understand the precautions that may be implemented. Health professionals need a strong understanding of the justification of, and rationale for, Contact Precautions in order to fully inform and advise their patients.

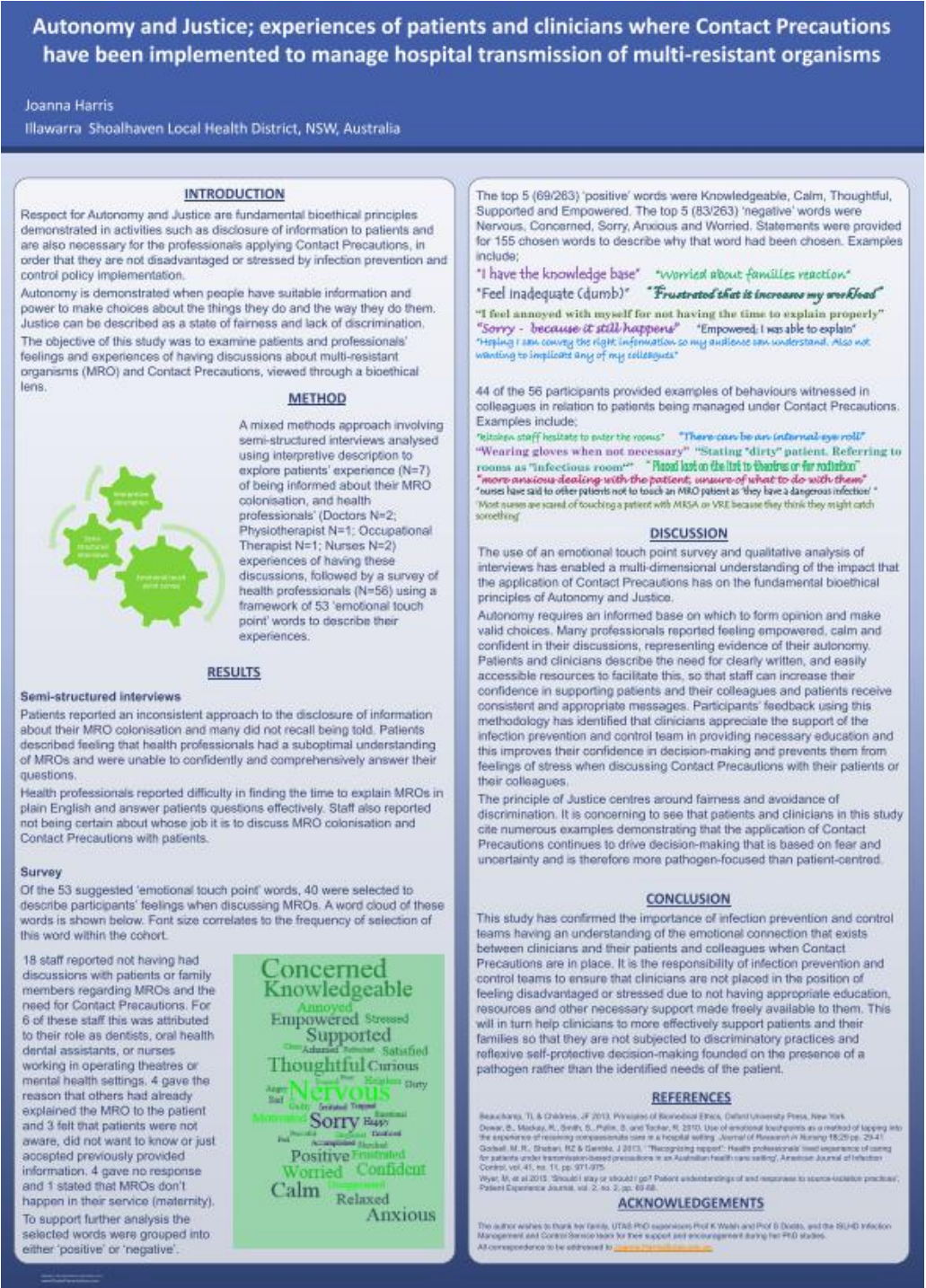
Method: A mixed methods approach involving semi-structured interviews analysed using interpretive description to explore patients' experience of being informed about their MRO colonisation, and a survey of healthcare professionals' self-assessed ability to explain MROs and Contact Precautions to their patients, and their experiences of doing so.

Results: Patients reported an inconsistent approach to the disclosure of this information. Many did not recall being told of their colonisation. Patients felt their health professionals had suboptimal understanding of MROs to confidently and comprehensively answer their questions. Health professionals reported difficulty in finding the time to explain MROs in 'plain english' and answer patients' questions effectively. There was also evidence of a lack of clarity about who is responsible for having these discussions with patients.

Conclusion: Health professionals report that they have difficulties in explaining MROs to their patients, and health professionals describe lack of confidence and lack of time as factors in their ability to properly inform their patients. These factors lead to patients' autonomy being undermined.

This poster represents work that was undertaken using data obtained as the research described in this thesis was underway, before all participants had been recruited.

It combines the findings of a paper survey of 56 nurses recruited during an infection prevention and control seminar day, with themed analysis of the interview transcripts of 7 patients and 6 health professionals who were recruited into the research reported in this thesis.



Appendix E: Emotions and feelings reported by health professionals

The following table shows the emotions and feelings experienced by health professionals when managing patients in Contact Precautions.

Emotional response in health professional	Specific example	Name of participant noticing this
Anxiety	I get nervous about what I'm supposed to do. I'd be nervous.. assume the risk is low... when pregnant I worried more. I'm just worried about how I'm going to answer them.	Emily(A) Emily(A) Judy(A)
Confused	I'm thinking is that the previous patient or is that what I should be doing? Plenty of times you might see the yellow trolley but not the sign.... you don't have the whole picture, so you're not confident.	Emily(A)
Empathy	I think you feel a bit sorry for the patients. It's sad but we don't actually give them much choice.	Kit(D) Connie(N)
Fearful	You just fear not following the proper precautions. I was really scared for my life because I am a nurse, I have been working and I maybe had MRSA in my wound. The sign shows that there's something dangerous.	Bertram(D) Connie(N) Vincent(D)
Frustrated	Frustration that I really should have known that. Frustrating to notice policy breaches in colleagues. Even after we've asked them.. I find that frustrating when they walk around and they don't put gloves on. Not adhering to the precautions.. that's where I get frustrated.. the doctors frustrate me because they just walk in. I get frustrated when a patient is admitted and they've got these infections, and it's not set up from the beginning. You notice that things are depleted and not re-stocked.. frustrating. Sometimes it's frustrating when you're under the pump time ways.	Asha(A) Bertram(D) Hayley(N) Judy(A) Judy(A) Juliet(N) Sara(A)

Emotional response in health professional	Specific example	Name of participant noticing this
Nuisance	I do know sometimes people do act like it's a bit harder.. you've got to glove up, gown like, and clean the whole machine after.	Hayley(N)
Sad	<p>The family see that they're not being approached as much.. that's sad.</p> <p>It's sad because we had to actually like you know, spoon feed [doctors].</p> <p>Hand on skin.. feel.. comforting.. and they don't get it. It's so sad. You can attribute some of this to downward spirals in people.</p>	<p>Kit(D)</p> <p>Connie(N)</p> <p>Katy(N)</p>
Uncomfortable	<p>I just feel like as soon as we have the conversation, everything changes for them. That's the bit I don't like about it.</p> <p>Feels uncomfortable about using too much PPE.. wastage.</p> <p>We do sweat and it is sometimes uncomfortable.</p> <p>It is uncomfortable in that layer, when you're doing your nursing jobs.</p> <p>Sometimes you get hot.. I get really hot in those plastics.</p> <p>It can be too stuffy to, feel so, uh, bloated – bloated up.. fine to wear for a minute or two, but sometimes you'll need them for about 20 minutes to half an hour, or – or longer</p>	<p>Katy(N)</p> <p>Judy(A)</p> <p>Lindy(N)</p> <p>Milya(N)</p> <p>Hayley(N)</p> <p>Toby(N)</p>

Appendix F: Emotions and feelings reported by patients

The following table shows the emotions and feelings that patients who were being managed under Contact Precautions had experienced.

Emotional response in patient	Specific example	Name of participant noticing this
Anxiety	I suffer anxiety.. it doesn't help that at all.. it enhances it.	Tricia(P)
Comfortable	It feels comfortable being in this room.	Jenny & Bobby(P)
Concerned they are infectious	I wonder if some of the nurses don't want to look after me because they're scared of catching something.	Tricia(P)
Depressed	It kind of makes you feel a bit down.	Amelia(P)
Different	They usually put people in rooms with other people but I've always had a single room. Just the way they have to come in wearing gloves and like a plastic apron...yeah, makes you feel a bit different.	Amelia(P) Tricia(P)
Embarrassed	Sometimes it got embarrassing.	Ronald(P)
Excluded	You kind of feel a bit left out, kind of thing. They don't like me walking outside that door unless I'm escorted.. That's what I like about going to the gym.. I have a chat with some people. I went to the TV lounge one night and I got hounded out. The volunteers have a service; for a gold coin donation they'll do your washing. Wouldn't do mine. You just, you just get this complex I think.	Amelia(P) Ronald(P) Sally(P) Tricia(P)
Feeling dirty	I felt tainted.. have I got a sign on me, you know..unclean. It's upsetting.. they have to put the gown on and the gloves, and it's just Like I'm not a dirty person. This is like they think I don't look after myself.	Sally(P) Tricia(P)
Happy and fortunate	I like this now, I'm quite happy. I'm happy. I mean I would ask for a single room anyway. I quite enjoyed it myself. Had your own shower, toilet, you know.	Jenny & Bobby(P) Valmai(P) Paul & Julie(P)
Helpless	The isolation made me feel helpless.	Sally(P)

Emotional response in patient	Specific example	Name of participant noticing this
Hurt	Three doctors standing at the door.. that's hurtful.	Tricia(P)
Intimidated	It was very intimidating.. because I was in there, nobody but nurses came in.	Sally(P)
Isolated	You kind of feel a bit, you know, what's the word for it? Isolated, I guess.	Amelia(P)
Lonely	I got used to being alone. There's nobody else to talk to.. there's nobody there.	Ronald(P) Sally(P)
Made no difference	It didn't make any difference to me. Not much different.. I didn't mind it at all.	Paul & Julie(P) Leticia(P)
Pariah	They don't really touch you half the time Nobody wants to talk to you.. don't want to know you. They try not to touch me. You do feel like, well, uh, a bit of a pariah almost.	Milo(P) Ronald(P) Sally(P)
Peace and quiet	Peace and quiet. I felt at peace. Quieter, peaceful. You get left alone a bit more. I can fall asleep a little bit better.	Amelia(P) Leticia(P) Milo(P) Tricia(P)
Plague	Sometimes, I feel like I've got the plague or something. They avoid you like the plague.	Milo(P) Ronald(P)
Powerless	I felt powerless.	Sally(P)
Radioactive	You feel like, they're going to run a Geiger counter over me shortly.	Sally(P)
Small	It made me feel small.	Ronald(P)
Surprised	It surprised me a little bit.. being moved to a single room.	Jenny & Bobby(P)

Appendix G: Emotional responses in patients, as noticed by health professionals

The following tables shows the emotion responses that health professionals reported having witnessed in patients being managed under Contact Precautions.

Emotional response in patient	Specific example	Name of participant noticing this
Anger	Some people get angry.. blame the hospital.. angry at the system	Will(N)
Anxiety	Patients get a bit anxious. It does drive other issues in them, anxiety and all sorts of things. You can get these huge anxieties in the patient.	Andrew(N) Katy(N) Will(N)
Being punished	He said it felt like it was a bit of a punishment	Hayley(N)
Bored	They're on their own.. no-one to talk to..it gets monotonous	Andrew(N)
Concerned they are infectious	They're wondering if they're, toxic, or whether they're like really, really infectious, or contagious. They're concerned that they're going to pass something on. They feel like they're infectious. Especially when they've got grandchildren. They're really concerned. It doesn't make the patient feel very good.. I'm infectious.. They're aware that what they have can be transmitted to other people. Families have that bit of concern about the organism. Sometimes they think they're like diseased.	Dan(N) Katy(N) Mark(N) Sara(A) Juliet(N) Judy(A)
Confronting	For some patients it's quite alarming. They see the gowns and gloves and think there's something hideously wrong with them,	Will(N)
Confused	They're confused.. information is dumped on them.. nothing is explained If someone's confused they don't understand.. you need to explain so many times. Families were often quite confused by it.	Andrew(N) Hayley(N) Juliet(N)
Depressed	Isolation leads to depression. Patients feel quite isolated.. I think it impacts on their mood. Psychologically it can have a negative impact.	Hayley(N) Kit(D) Mark(N)
Different	As soon as you start talking about it, they feel different. A lot of people don't really listen to what you're saying, and	Katy(N)

Emotional response in patient	Specific example	Name of participant noticing this
	<p>they don't really understand. They just know they're different.</p> <p>They feel different... We stand at their door and put the gowns and gloves on but we're not doing it for the room next to them.</p> <p>So we're standing at their door. Putting on an apron and gloves before we even enter the room, and they're watching us do it.</p> <p>They feel like they're being treated differently.</p>	<p>Lana(N)</p> <p>Teresa(N)</p> <p>Asha(A)</p>
Embarrassed	They have reported feeling a bit embarrassed.	Emily(A)
Excluded	<p>Patients feel separated and excluded from everything.</p> <p>The patient is looking out and wanting interaction.</p>	<p>Asha(A)</p> <p>Bertram(D)</p>
Feeling dirty	<p>You get some that think they're dirty.</p> <p>I've had them tell me they think they are dirty.</p>	<p>Lana(N)</p> <p>Teresa(N)</p>
Fearful	<p>A lot of people are fearful of making other people more ill.</p> <p>I think, all of a sudden, they get this fear.</p> <p>Patients have a fear that there was something drastically wrong.</p>	<p>Sara(A)</p> <p>Katy(N)</p> <p>Will(N)</p>
Frustrated	Patients get frustrated when they are put to the end of the list.	Kit(D)
Happy and fortunate	<p>I normally have people who are happy in a single room.</p> <p>People are really happy and fortunate in their own room.</p> <p>Some people say, 'I've got MRSA' because they're happy to get the single room.</p> <p>Most patients like the single room.</p> <p>Some patients like being in a single room. They're happy that they've got their own private bathroom..</p> <p>Some people like the single room.</p>	<p>Asha(A)</p> <p>Judy(A)</p> <p>Katy(N)</p> <p>Mark(N)</p> <p>Kit(D)</p> <p>Simon(D)</p>
Isolated	<p>He was a sociable man.. he didn't like it, he felt really isolated. I do think isolation's a big thing.</p> <p>Patients feel isolated.</p> <p>Isolation has a big impact on patients.</p> <p>Patients feel quite isolated.</p> <p>A chatty patient.. stuck in a single room.. they feel isolated.</p> <p>It can be quite isolating.</p> <p>They feel quite isolated in their room by themselves.</p> <p>I think the majority of patients find that really isolating.</p>	<p>Hayley(N)</p> <p>Judy(A)</p> <p>Katy(N)</p> <p>Kit(D)</p> <p>Lana(N)</p> <p>Mark(N)</p> <p>Sara(A)</p> <p>Simon(D)</p>
Lonely	<p>Isolation leads to loneliness.</p> <p>I think they do get lonelier.</p>	<p>Hayley(N)</p> <p>Juliet(N)</p>

Emotional response in patient	Specific example	Name of participant noticing this
	Lonely is probably the word that comes up the most. The occasional person gets lonely.	Sara(A) Winton(D)
Nuisance	That body language that makes them think they're being a pain or they're being a bit of a nuisance. They'll say, 'I'm so sorry to stop you or to worry you, I know you've got to do that to come in'.	Katy(N)
Panic	A lot of patients panic the first time they find out.	Andrew(N)
Pariah	I think it can make the patient feel a bit like, 'Oh, they can't touch me, they can't be near'. I think they get the idea.. it's true they're treated as pariahs.	Hayley(N) Simon(D)
Trapped	They feel they're - that they're quite stuck inside	Vincent(D)
Uncomfortable	Not a lot of patients like being on their own. Family don't find it very comfortable wearing the gown when they go in. It does put a barrier up between people	Andrew(N) Lindy(N)
Unmotivated	The lady we had with the CPE, she completely lost motivation.	Hayley(N)