Exploring influences on clinicians' and patients' involvement in ward rounds

Victoria Walton BN, RN, MPH

Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

The Australian Institute of Health Service Management,

College of Business and Economics

May 2020

Declaration of Originality

This thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the thesis, and to the best of my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis, nor does the thesis contain any material that infringes copyright.

Victoria Walton

12 November 2019

Authority of Access

This thesis may be made available for loan and limited copying and communication in accordance with the Copyright Act 1968.

Victoria Walton

12 November 2019

Statement regarding published works contained in thesis

The publishers of the papers comprising Chapters 2, 3, 4, 5, and 6 hold the copyright for that content and access to the material should be sought from the respective journals. The remaining nonpublished content of the thesis may be made available for loan and limited copying and communication in accordance with the Copyright Act 1968.

Victoria Walton

12 November 2019

Statement of Co-Authorship

The following people and institutions contributed to the publication of work undertaken as part of this thesis:

Candidate Victoria Walton, The Australian Institute of Health Service Management

Author 1 Dr Anne Hogden, University of Tasmania

Author 2 Dr Janet Long, Macquarie University

Author 3 Prof Julie Johnson, Northwestern University

Author 4 Prof David Greenfield, University of Tasmania

Contribution of work by co-authors for each paper:

Paper 1: Located in Chapter 2

Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *International Journal of Health Care Quality Assurance* 2016;29(4):364-379. doi: 10.1108/IJHCQA-04-2015-0053.

Author contributions:

Candidate was the primary author and with Author 1, Author 3, and Author 4 contributed to the conception and design of the research project and drafted significant parts of the paper.

Candidate contributed approximately 60% to the planning, execution, analysis and preparation of the work for the paper.

Author 1 contributed 10% to the interpretation of data and critical review of manuscript.

Author 3 contributed 15% to the conception and design, interpretation of data and critical review of the manuscript.

Author 4 contributed 15% to the conception and design, interpretation of data and critical review of the manuscript.

Paper 2: Located in Chapter 3

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring interdisciplinary teamwork to support effective ward rounds. *International Journal of Health Care Quality Assurance.* Accepted for publication February 2020.

Author contributions:

Candidate was the primary author and with Author 1, Author 2, Author 3, and Author 4 contributed to the conception and design of the research project and drafted significant parts of the paper.

Candidate contributed approximately 60% to the planning, execution, analysis and preparation of the work for the paper.

Author 1 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 2 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 3 contributed 10% to the interpretation of data and critical review of manuscript.

Author 4 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Paper 3: Located in Chapter 4

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11. doi:10.1111/jep.13248.

Author contributions:

Candidate was the primary author and with Author 1, Author 2, Author 3, and Author 4 contributed to the conception and design of the research project and drafted significant parts of the paper.

Candidate contributed approximately 60% to the planning, execution, analysis and preparation of the work for the paper.

Author 1 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 2 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 3 contributed 10% to the interpretation of data and critical review of manuscript.

Author 4 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Paper 4: Located in Chapter 5

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare.* 2019;12:1023-1032. doi:10.2147/JMDH.S226330.

Author contributions:

Candidate was the primary author and with Author 1, Author 2, Author 3, and Author 4 contributed to the conception and design of the research project and drafted significant parts of the paper.

Candidate contributed approximately 60% to the planning, execution, analysis and preparation of the work for the paper.

Author 1 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 2 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 3 contributed 10% to the interpretation of data and critical review of manuscript.

Author 4 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Paper 5: Located in Chapter 6

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019; 13:1415-1429. doi:10.2147/ppa.s211073.

Candidate contributed approximately 60% to the planning, execution, analysis and preparation of the work for the paper.

Author 1 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 2 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

Author 3 contributed 10% to the interpretation of data and critical review of manuscript.

Author 4 contributed 10% to the conception and design, interpretation of data and critical review of the manuscript.

We the undersigned agree with the above stated "proportion of work undertaken" for each of the above published (or submitted) peer-reviewed manuscripts contributing to this thesis:

Signed:			
	Victoria Walton Candidate The Australian Institute of Health Service Management	Dr Anne Hogden Primary Supervisor The Australian Institute of Health Service Management	Prof David Greenfield Head of School The Australian Institute of Health Service Management
Date:	12 November 2019	12 November 2019	12 November 2019

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. Ethics Approval No/s LNR/13/HAWKE/433 and LNR/13/HAWKE/365

Victoria Walton

1 May 2020

Acknowledgements

The foundation of this project lies in teamwork and process. I was supported through the PhD process with education, humour and patience, from a team of inspiring supervisors, Anne Hogden, David Greenfield, Janet Long, and Julie Johnson. Each person has made my experience enjoyable and provided encouragement in different ways. Anne, for the gentle approach to the way she guided me through this process. No question was too simple to ask. David, for his patience in helping me talk through my ideas until they made sense. Janet, for encouraging and teaching me how look at my research through a more quantitative lens. Julie, for providing a fresh perspective on the findings and manuscript reviews that made me consider a different viewpoint.

Thank you to Janine, Miriam and Sue who are probably unaware of just how much support they gave me, and how much I relied on it. They always took an interest and were happy to let me talk about what I had read or learned.

Thank you to my parents. The educational opportunities and encouragement they have given me have enabled me to undertake this research.

Finally, to Pauline who has encouraged and supported me from the initial idea of starting this journey through to its end. This process has affected her everyday life in many ways, but she never complained or made me feel it wasn't important, thank you.

Table of Contents

Declaration of Originality i

Authority of Access ii

Statement regarding published works contained in thesis iii

Statement of Co-Authorship iv

Statement of Ethical Conduct ix

Acknowledgements x

Table of Contents xi

List of Tables xv

List of Figures xvii

Abbreviations, Acronyms and Glossary xviii

Outputs arising from research xx

Abstract 23

Chapter 1: Introduction 26

1.1 Focus of the research 26

1.2 Terminology 26

1.3 Reflexivity of the researcher 27

1.3.1 Background and motivation for research topic 28

1.4 Context of study 31

1.4.1 Acute medicine and rehabilitation 31

1.4.2 Relocation of hospital services 32

1.4.3 Interdisciplinary bedside rounding 32

1.5 The research field: ward rounds 33

1.5.1 Rounding processes in medical and rehabilitation wards 35

1.5.2 Interdisciplinary teamwork during ward rounds. 36

1.5.3 Identifying different rounding processes carried out on medical and rehabilitation wards. 37

1.5.4 Health professionals' perspectives on interdisciplinary bedside rounds 38

1.5.5 The patient experience of ward rounds 38

1.6 Research questions, design and methods 39

1.6.1 Research design and methods 40

1.6.2 Participants and settings 43

1.7 Ethics 46

1.8 Thesis organisation 46

1.9 Conclusion 49

Chapter 2: Literature review 51

Chapter 3: Characteristics of interdisciplinary teamwork that support effective ward rounds 69

Chapter 4: Clinicians perspective of rounding processes 96

Chapter 5: Interdisciplinary bedside rounds: health professionals' perspectives 109

Chapter 6: Patient experiences of ward rounds 135

Chapter 7: Discussion 152

7.1 Introduction 153

7.2 Influence of stakeholder groups on ward round participation 157

7.2.1 Health service....157
7.2.2 Specialty....162
7.2.3 Health professionals....163
7.2.4 Patients....171
7.3 Hierarchy of influence on ward round participation....178
7.4 Conclusion....179
Chapter 8: Conclusion....181
8.1 Overview....182
8.2 Rationale, contribution and research questions....183
8.3 Answers to research questions....187
8.3.1 Which ward round processes occur in medical wards, and who participates?....187
8.3.2 Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?....188
8.3.3 How do clinicians describe the ward round processes on their wards?....189
8.3.4 What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?....191
8.3.5 What are patients' experiences of ward rounds?....192
8.3.6 Overarching research question: what influences clinicians' and patients' involvement in ward rounds?....194
8.4 Limitations....195
8.5 Avenues for further research....196
8.6 Conclusion....197

Appendices.....198

Appendix 1 Peer reviewed conference abstracts and oral presentation title pages.....198

Appendix 2 Peer reviewed conference abstracts and poster presentations.....198

Appendix 1A Ward rounds: opportunities for integrating person-centred care 199

Appendix 1B What supports interdisciplinary teamwork during ward rounds to deliver person-centred care? 203

Appendix 1C Breaking sown silos starts at the bedside 207

Appendix 2A Benefits and Challenges of Interdisciplinary Bedside Rounds: Reducing Silos 211

Appendix 2B Patient-Clinician Communication During Ward Rounds.....215

Appendix 2C Interdisciplinary Communication: Exploring Clinicians' and patients' Perceptions of Roles During Rounds.....218

Appendix 2D Evaluating the recruitment strategies for a complex multidisciplinary quality improvement project.....222

Appendix 2E How many rounding processes can a medical ward have?.....226

Appendix 2F A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round.....230

References.....234

List of Tables

Tables		Page
Chapter 1	Table 1.1 Research overview	41
	Table 1.2 Chapter summary of the research overview	43
	Table 1.3 Health professionals from two specialties	45
	Table 1.4 Patient participants	46
Chapter 2	Table 2A Chapter summary of the research overview	52
	Table 2.1 Criterion used to classify article	55
	Table 2.2 Classifications and purpose of rounds	56
	Table 2.3 Combinations of professional discipline and patient attendees in rounds	58
	Table 2.4 Summary of how attendee's responsibilities were grouped in each round	60
Chapter 3	Table 3A Chapter summary of the research overview	70
	Table 3.1 Survey tool	76
	Table 3.2 Dimensions of teamwork in the ward round context	78
	Table 3.3 Participant demographics	79
	Table 3.4 Additional challenges interdisciplinary teamwork nominated by clinicians	83
	Table 3.5 Health professionals experience of why teams work well together	85
	Table 3.6 Health professionals' description of why the teamwork experience was positive	87
Chapter 4	Table 4A Chapter summary of the research overview	97
	Table 4.1 Survey questions	99

	Table 4.2 Glossary of rounding processes used in survey	101
	Table 4.3 Survey participant characteristics	102
	Table 4.4 Clinician response rate to survey	102
	Table 4.5 Key findings of acute medicine and rehabilitation multidisciplinary teams' perceptions of who routinely attends ward rounds	104
Chapter 5	Table 5A Chapter summary of the research overview	110
	Table 5.1 Survey question: benefits and challenges of IBRs	117
	Table 5.2 Benefits of interdisciplinary ward rounds	119
	Table 5.3 Challenges of interdisciplinary ward rounds	124
Chapter 6	Table 6A Chapter summary of the research overview	136
	Table 6.1 Health professional attendee combinations on the 14 observed ward rounds	141
	Table 6.2 Health professional introductions at ward rounds: frequency and by whom	141
	Table 6.3 Health professional's roles and responsibilities during the ward round	141
	Table 6.4 Patient participant demographics	142
	Supplementary table 6.1 Ward round observation tool	149
	Supplementary table 6.2 Patient interview guide	151
Chapter 7	Table 7A Chapter summary of the research overview	152
	Table 7.1 What influences clinician' and patients' involvement in ward rounds? Research questions, themes and stakeholders	156
	Table 7.2 Effective Team Characteristics Within Our Ward Round	168

Chapter 8	Table 8A Chapter summary of the research overview	181
	Table 8.1 Research Overview	185

List of Figures

Figures		**Page**
Chapter 2	Figure 2.1 Literature search selection process	55
Chapter 3	Figure 3.1 Enablers to interdisciplinary teamwork nominated by clinicians working in acute medicine and rehabilitation	81
	Figure 3.2 Challenges to interdisciplinary teamwork nominated by clinicians working in acute medicine and rehabilitation	82
Chapter 4	Figure 4.1 Rounding processes nominated by health professionals working in acute medicine	103
	Figure 4.2 Rounding processes nominated by health professionals working in rehabilitation	103
	Figure 4.3 The effectiveness of communication between acute medicine health professionals when discussing patient care	105
	Figure 4.4 The effectiveness of communication between rehabilitation health professionals when discussing patient care	106
Chapter 6	Figure 6.1 Data analysis process for patient interviews	140
	Figure 6.2 Influences on the patient experience of ward rounds	146
Chapter 7		

Figure 7.1 Hierarchy of Influence on Ward Round Participation 161

Figure 7.2 Patient ward round notepad 175

Abbreviations, Acronyms and Glossary

ACTION	Advocate, chaperone, transitions, inform, organise, nurse-centred
AH	Allied health professional
Allied Health Professional	University qualified health professionals that are not part of medical, nursing or dental disciplines. Examples include: social work, dietetics, psychology, speech pathology and occupational therapists. They have expertise in diagnosis, treatments and prevention of disease. In the Australian healthcare context, they often work within a multidisciplinary team in a healthcare facility or community setting.
CORE	Collaboration, openness, respect, and empowerment
Environmental Health literacy	Policies, processes, information, people within the health system impact the way in which people obtain and understand information and access services.
Individual health literacy	A person having the skills and knowledge to understand and appraise information in order to make decisions about their health, including any actions needed.
IBR	Interdisciplinary bedside round
ISBAR	Introduction, Situation, Background, Assessment, Recommendation
MAU	Medical Assessment Unit
MBWR	Multidisciplinary bedside round

MO	Medical officer
MS Excel	Microsoft Excel
N	Nursing
NSW	New South Wales
NUM	Nursing Unit Manager
PCBR	Patient-centred bedside rounds
PDSA	Plan Do Study Act
SDM	Shared decision making
SIBR	Structured interdisciplinary bedside round
SIDR	Structured interdisciplinary round
UK	United Kingdom

Outputs arising from research

Peer reviewed journal publications

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring interdisciplinary teamwork to support effective ward rounds. *International Journal of Health Care Quality Assurance.* Accepted for publication February 2020.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare.* 2019;12:1023-1032. doi:10.2147/JMDH.S226330.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019; 13:1415-1429. doi:10.2147/ppa.s211073.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11. doi:10.1111/jep.13248.

Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *International Journal of Health Care Quality Assurance* 2016;29(4):364-379. doi: 10.1108/IJHCQA-04-2015-0053.

Peer reviewed conference presentations

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. *"Ward rounds: opportunities for integrating person-centred care"*, Paper presented at 2nd Asia Pacific Conference on

Integrated Care: Achieving better value for people and populations: November 11-13, 2019; Melbourne, Australia.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. "*What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?"*, Paper presented at 2nd Asia Pacific Conference on Integrated Care: Achieving better value for people and populations: November 11-13, 2019; Melbourne, Australia.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. *"Breaking down silos starts at the bedside"*, Paper presented at 35th International Safety and Quality Conference: Learning at the system level to improve quality and safety, International Society for Quality in Health Care: September 23-26, 2018; Kuala Lumpur, Malaysia.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. *"Benefits and challenges of interdisciplinary bedside rounds: reducing silos"*, (poster) 35th International Safety and Quality Conference: Learning at the system level to improve quality and safety, International Society for Quality in Health Care: September 23-26, 2018; Kuala Lumpur, Malaysia.

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. *"Patient-Clinician Communication During Ward Rounds"*, (poster) Paper presented at International Conference on Communication in Healthcare & Health Literacy Annual Research Conference, Academy of Communication in Healthcare: October 8-11, 2017; Baltimore, United States.

Walton V, Hogden A, Johnson J, Greenfield D. *"Interdisciplinary Communication: Exploring Clinicians' and Patients' Perceptions of Roles During Rounds",* (poster) Paper presented at 34th International Safety and Quality Conference: Learning at the system level to improve quality and safety, International Society for Quality in Health Care: October 1-4, 2017; London, England.

Walton V, Hogden A, Johnson J, Greenfield D. *"Evaluating the recruitment strategies for a complex multidisciplinary quality improvement project",* (poster) Paper presented at 32nd International Safety and Quality Conference: Building Quality and Safety into the Healthcare System: October 4-7, 2015, Doha, Qatar.

Walton V, Hogden A, Johnson J, Greenfield, D. *"How many rounding processes can a medical ward have?",* (poster) Paper resented at 32nd International Safety and Quality Conference: Building Quality and Safety into the Healthcare System: October 4-7, 2015, Doha, Qatar.

Walton V, Greenfield D, Johnson J. (2014) *"A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round*", (poster) Paper presented at 31st International Safety and Quality Conference: Quality and Safety along the Health and Social Care Continuum: October, 5-8, 2014, Rio de Janeiro, Brazil.

Industry presentations

Walton V, Hogden A, Johnson J, Greenfield D. *"Exploring clinical roles and communication within the interdisciplinary team: survey feedback",* Education In-service, Mona Vale Hospital, Northern Sydney Local Health District: October 15, 2015. Sydney, Australia

Abstract

Background

Ward rounds are a routine, normalised, formalised, daily activity that occur on wards to plan, coordinate and review patient care. Nevertheless, they comprise a complex series of processes, confounded by the knowledge and practice intricacies of medical, nursing, allied health and patient interactions. The assumed shared understanding of ward rounds impacts teamwork, care delivery and patient experiences and outcomes. Effective transfer of knowledge about the patient and treatment plan between clinicians and patients is vital to safe care delivery. Therefore, the aim of the study was to explore health professionals' and patients' understanding and experiences of ward rounds to identify the influencing factors to their participation.

Method

A two-phased mixed method study was undertaken. Data were collected in four wards across medical and rehabilitation specialties, within a metropolitan teaching hospital, in Sydney, Australia.

In Phase One, a purpose-designed survey tool was administered to 77 clinicians. The survey had three areas of focus. The first was on clinicians' experience of teamwork, to provide insight into the skills and attributes of positive teamwork that could facilitate effective ward rounds. The second investigated if interdisciplinary team members shared an understanding of ward rounds and involvement in patient care planning. The third focus examined the usual practice of interdisciplinary bedside rounds (IBRs) in the hospital.

In Phase Two, observations were conducted of clinicians and patients during ward rounds. Purpose-designed observation and semi-structured interview tools were developed and

administered. Ward rounds of 14 patients were observed, with all patients subsequently participating in in-depth interviews. These explored the patient understanding and experience of ward rounds, and the factors that influenced their willingness and capacity to participate in the round.

Results

Phase One

Shared understanding of ward rounds differed between acute medicine and rehabilitation specialties. There was more consistency between the professional groups of medical officers, nursing, and allied health clinicians than when they were working as an interdisciplinary team and in a specific speciality. Self-reported attendance at ward rounds was higher than attendance perceived by colleagues. Despite this, clinicians considered their team's communication for patient care to be effective.

Benefits and challenges of IBRs were described more consistently within disciplines. The benefits were commonly patient focused. Clinicians desired rounding processes that facilitated safe patient care and increased clinicians' capacity to contribute to care planning. The challenges to IBRs had origins in competing care priorities, workforce structures and actual or perceived professional and organisational culture. Clinicians consistently reported staff attributes that enabled collaborative teamwork in ward rounds, such as when there was clear leadership. An understanding of roles and responsibilities ensured appropriate communication and task allocation.

Phase Two

Patients sought involvement in their ward round. Participation was influenced by their own understanding of ward rounds based on previous experiences and confidence to participate. Patients who were more familiar with the health service had a greater sense of taking responsibility for providing clinicians with information and being prepared for the round discussion. Patients prioritised talking with medical officers during rounds, and they perceived information provided by the consultant as the most reliable.

Discussion/Conclusion

Ward rounds represent a web of processes integrating complex health system and human factors. The stakeholder groups who influence rounding processes and experiences are: the health service, health professionals and patients. This thesis provides a unique exploration into ward rounds. Previous studies considered these "influences" in silos. This series of studies investigates them together to explore the impact they have on each other. Four themes were identified that influence stakeholders: understanding and recognition of rounding processes between interdisciplinary teams; actual, or perceived, clinicians' and patients' behaviour such as a perceived medical hierarchy; delivering person-centred care through collaborative teamwork; and workforce structure challenges leading to each health discipline having different located patients. Each stakeholder had a different level of influence on ward round participation. In our study clinical specialty did not meaningfully influence ward round participation. Study findings led to the development of the "*Hierarchy of influence on ward round participation",* a unique empirically based model representing the factors that influence participation in ward rounds.

Chapter 1: Introduction

1.1 Focus of the research

Medical, nursing, and allied health professionals work in a ward environment that requires communication and coordinated teamwork to deliver safe, high quality patient care.[1,2] Hospital ward rounds are a traditional inpatient activity where clinicians meet with the patient and develop treatment plans.[3] This thesis examines how clinicians and patients interpret both the process and their role during rounds. It is acknowledged that effective teamwork improves interdisciplinary communication, leading to safer, higher quality care.[4,5]

The Introduction Chapter is structured in the following manner. The first section defines the *terminology* used in both literature and this thesis. Next, the *reflexivity and motivation* for the research is presented. Following this, the *context of the study* provides an explanation of medical and rehabilitation specialties, and the disease characteristics treated in each speciality. A background to the hospital explains the changing environment occurring at the time the studies were undertaken. The *research field of ward rounds* is then presented in more detail. A brief history of ward rounds is provided with both an Australian and international context. Evidence in the gaps on ward rounds is presented under five research topics. These provide the rationale for each study undertaken in this thesis. Following this, the *research questions, design and methodology* are given. Finally, the *thesis organisation* and *conclusion* provide an overview of the upcoming chapters.

1.2 Terminology

Many terms associated with this study area are used interchangeably in both literature and industry. The terms “ward round” and “round” (or variation of) are both used in this thesis. “Interdisciplinary” and “multidisciplinary ward round” can also be used interchangeably in

literature,[6] yet also be defined to show separation between the concepts. Interdisciplinary teamwork is defined as the healthcare team from different disciplines (e.g., medical or nursing) working towards jointly agreed goals with little team hierarchy.[7] Multidisciplinary teams are more discipline based, with each discipline having their own goals which are overseen and coordinated by the medical officer.[7] In this thesis, unless otherwise specifically identified in source materials as "multidisciplinary", the term "interdisciplinary" is used. Interdisciplinary teams refer to those consisting of representation from medical, nursing and allied health professions. The specific allied health disciplines involved in this thesis are: physiotherapy, speech pathology, dietetics, neurophysiologist, and occupational therapy.

"Transdisciplinary" is model of teamwork where clinicians work across professional boundaries.[8] An systematic review exploring interprofessional teamwork in rehabilitation and chronic care settings revealed only one international study involving a team transitioning from interdisciplinary to transdisciplinary care.[8] A literature scan showed transdisciplinary care, and subsequently ward rounds, are not a routine model of care in acute medicine or rehabilitation in Australia. Therefore, transdisciplinary care was outside of the scope of this study.

The study setting of medical wards (encompassing cardiology, general medicine and the medical assessment ward) are described as "acute medicine" to distinguish from rehabilitation medicine. The terms "health professional" and "clinician" are both used to describe medical officers, nurses and allied health professionals.

1.3 Reflexivity of the researcher

Reflexivity refers to the "sensitivity to the ways in which the researcher and the research process have shaped the data collected, including the role of the prior assumptions and experience".[9(p89)] In addition, researchers must ensure they "make their personal and

intellectual biases plain at the outset of any research reports to enhance the credibility of their findings."[9(p89)] Section 1.3.1 discusses my background and motivation for the thesis.

1.3.1 Background and motivation for research topic

My interest in interdisciplinary teamwork and specifically ward rounds developed as a clinical nurse working on a ward specialising in respiratory, HIV medicine, endocrinology, general medicine, and dermatology. The volume of medical teams and allied health teams was considerable: eleven medical teams comprising of more than 25 medical officers, and between eight and 10 allied health professionals depending on the patients. At any one time, multiple team members would be on the ward reviewing patients and making changes to treatment plans. The challenges were distinguishing between a medical team ward round, a simple review by a registrar and intern medical officer, and a medical teaching round where the nurse was not allowed.

When able, I would attend ward rounds with two specific medical teams. In the beginning I was not spoken to, or asked for any information, so I chose to provide unsolicited information on the patient's vital signs. Over the course of a few months I went from having to ask medical officers when rounds would be conducted, to being informed of the round at the start of the shift. Additionally, during the round medial officers began asking me for a nursing update. I experienced better teamwork and stronger trust between me and the medical team. Allied health clinicians would ask me for treatment plan updates prior to reading the medical records. I felt more confident, informed, and connected with my work. Importantly, I felt I was providing the best possible care for my patients. However, I was aware my presence at ward rounds was not an established part of a rounding process and reliant on me taking the initiative.

My interest in healthcare systems and processes naturally led me into clinical governance where my work as a quality care reviewer investigating adverse events consolidated my experience on the wards. That is, that team communication and a sense of being valued enough to offer an opinion is vital for safe patient care.

During this time, a number of high profile adverse events occurred in acute care hospitals within NSW. A Special Commission of Enquiry known as the "Garling Inquiry" was undertaken to review the standards of care provided to patients in NSW acute care hospitals.[10] Garling's subsequent report on the inquiry's findings noted that models of care centred around teamwork should be developed to replace healthcare professionals working in silos.[10] Garling recommended that "…the important services of the allied health professionals are not forgotten and ignored"[10(p22).] Recommendation 39, from the Garling Report states that "…each member of the clinical workforce should be prepared to work with a multi-disciplinary environment as a member of, or as a contributor to an inter-disciplinary team responsible for the delivery of patient centred care"[10(p43)] The report made further recommendations for daily multidisciplinary ward rounds.[10]

Between reviewing clinical care, and the observations I made when talking to clinicians and patients, it was clear that despite the efforts and desires of health services and clinicians to improve the safety of patient care, interdisciplinary teamwork remained a challenge. My motivation for the thesis was to try and understand how far the healthcare system has come in achieving true interdisciplinary team care during the process of ward rounds.

Fortuitously, the local health district in which I was employed was preparing to implement structured interdisciplinary bedside rounds. Of the three hospitals implementing the rounds, I

chose to study the facility I had the least contact with through my role in clinical governance. I did not have any personal contacts at the facility. I had no horizontal direct line management and the portfolio I worked in was independent of any management structure at the facility.

Understanding the organisation in which the study was set provided me some advantages when collecting my data. I did know the directors and managers through various committees, and I believe this made access to clinical staff and clinical areas easier.[11] Being a member of the population, the local health district, but not a member of the subculture of the specific facility made me an "insider researcher".[11] My role as a researcher was as a "peripheral member"[11] and not part of the core group within the study setting or particpants.[11]

To further emphasise this, I made sure I removed my local health district identification badge so that I was only wearing my university badge. I introduced myself as being from the university and did disclose I worked for the local health district but stated that the research was not being undertaken for the district. Participants, both clinicians and patients, seemed to be more accepting of participation when I explained the relationships. Dwyer and Buckle[11] describe this place as the "the space between". Researchers need to recognise their positionality in relation to the study but also recognise the complex nature of studying human populations.[11]

Having industry experience made understanding the data collection and data analysis process easier. I was able to understand the health professional specific jargon, abbreviations, and clinical scenarios that provided me more context to data. However, there may also have been bias as a result of this. Strategies employed to facilitate robust data analysis included: cross checking and moderation within the research team to ensure consistency when coding data; use of a peer reviewed framework to provide an independent and valid data analysis methodology;

presentation of findings back to health professional participants; and presentations at national and international conferences to test and refine ideas from peer feedback.

While collecting data, I became even more aware of the differences in the professional groups. When introducing myself to nurses, I learnt to say my background was in nursing and undertaking a PhD but needed to emphasise I had not worked clinically for a very long time. This appeared to reduce to impression that I was coming into their work with preconceived ideas. When introducing myself to allied health clinicians, I simply said I my background was nursing and now undertaking a PhD. When introducing myself to medical officers, I emphasised I was a PhD candidate as this appeared to make them more interested in the study.

I was particularly humbled, if not a little saddened, by the support for the research from allied health professionals. They all thanked me for inviting them to participate and many commented how much they enjoyed it. I was reminded of Garling's comment that allied health professionals were not to be forgotten or ignored,[10] and I wondered how much progress the healthcare system had made toward meeting this.

1.4 Context of study

1.4.1 Acute medicine and rehabilitation

The clinical settings for this study are medical specialties of acute medicine and inpatient rehabilitation from a single hospital. Acute medicine is represented by medical specialties from cardiology, general medicine and the medical assessment unit (MAU). People may be admitted with an acute exacerbation of a chronic condition, or acute presentation for a new condition. In New South Wales (NSW) Australia, medical assessment units were developed by the Physicians Taskforce and Acute Care Taskforce as an alternative to the emergency

department.[12] The MAU model of care is an inpatient service where a consultant leads a dedicated interdisciplinary team.[12] Patients typically have complex care needs and present with acute and an undifferentiated history.[12]

Rehabilitation is a specialty of medicine which focuses on a people with disabilities resulting from injury or illness.[13] Treatment under a rehabilitation specialist includes diagnosis, assessment and management of the disability. Rehabilitation aims to improve the person's function and quality of life.[13]

Health professionals working on the acute medical and rehabilitation wards included medical officers, nurses, and physiotherapists, speech pathologists, dieticians, neurophysiologist, and occupational therapists.

1.4.2 Relocation of hospital services

The hospital was a 165-bed teaching hospital in metropolitan Sydney, Australia. During the study period (2014 to 2019) the hospital was in a transition period. All hospitals services except for rehabilitation were preparing to close and relocate to a new facility 13 kilometres (8 miles) distance away. This was to occur within five years of the first study, and within 18 months of the final data collection point. Change management strategies were employed to prepare staff and patients. Hospital resources were being maintained but new resources were limited. Anecdotally, staff said the change was confronting, and staff retention was negatively affected, resulting in higher than average turnover.

1.4.3 Interdisciplinary bedside rounding

The hospital was preparing to implement the statewide quality and safety program "In Safe Hands".[14] The foundation of the program is implementation of components intended to build

efficient and effective healthcare teams. One of the functions of the program is structured interdisciplinary bedside rounds.

The original focus of the thesis was acute medical wards as they were the only wards implementing the In Safe Hands program. The initial concept was to carry out a pre and post implementation study. However, during the implementation, challenges related to workforce buy-in to the project and general project delays were encountered and implementation did not proceed. This resulted in a change in research focus to looking at how the different existing ward round processes facilitated collaborative patient-centred care and shared decision making. Following the initial data collection, the study was expanded to include inpatient rehabilitation wards. This strengthened the study as it enabled the comparison between medical and rehabilitation specialties.

1.5 The research field: ward rounds

Health professionals may have multiple communications regarding a patient's treatment during a day. However, a cornerstone activity for patient care planning is the ward round.[3,15] Despite this, rounds remain a process difficult to define and remain understudied.[16] Ward rounds are a traditional activity undertaken in hospitals globally.[16] Historically they are the domain of the medical officer.[17,18] Nurses have often been present during rounds: however, internationally as patient acuity has increased the capacity of nurses to attend rounds has lessened.[19] Allied health professionals have not routinely attended rounds.[20]

In Australia and internationally there is a trend to introduce interprofessional bedside rounds.[21] More specific rounds such as structured bedside rounding is also growing in popularity.[22,23] A key principle to structured rounding is all clinicians involved in the patient's care meet at the bedside at a scheduled time to plan care.[24] The introduction of a standard communication tool

provides more structure to the round. Communication tools provide clinicians with a shared mental model so that the process for information transmission is known and expected.[25] Providing a structure or framework to a rounding process supports clinicians in a shared communication model and collaboration.[22] While the principles of structured rounding may be similar, there are variations in what the rounds are called. Common names include Structured Interdisciplinary Rounds (SIDR)[24] and Structured Interdisciplinary Bedside Rounds (SIBR).[14]

Other rounds also align to the principles of shared interdisciplinary care during rounding. Common names include Patient-Centred Bedside Rounds (PCBR),[26] Interdisciplinary rounds (IDR),[27] Bedside Interdisciplinary Rounds (BIRs),[28] Interprofessional Bedside Rounds (IBR),[29] and Interdisciplinary Bedside Rounds.[30,31]

This thesis will use the phrase Interdisciplinary bedside round (IBR) to describe all rounds undertaken at the bedside and with the interdisciplinary team which comprises of: medical officers; nurses; and allied health professionals.

Despite the type of rounding process being undertaken, multiple contributing factors can influence their effectiveness. Factors include clinician buy-in, patient factors,[32] patient outcomes,[22] and organisational structures.[33]

Each study in this thesis was developed to explore aspects of the complex nature of ward rounds from four distinct perspectives: healthcare system; health professional; patient; and specialty. Investigating each element and the relationship between them leads to asking *"*What influences clinicians' and patients' involvement in ward rounds"

1.5.1 Rounding processes in medical and rehabilitation wards

Chapter 2: *Literature Review*, presents the published literature review that classified different rounds carried out in medical specialties.[6] Search terms were derived from an initial literature scan. At the time of the literature review the study focus was only medical wards. Following the expansion of the study, a further literature review was undertaken to support the investigation of rounding processes in rehabilitation. The key findings of both reviews are provided in this section.

The published literature review found while ward rounds are carried out across the healthcare system, there is no clear definition for a ward round.[6] Additionally, there is variation in many aspects of rounding processes including the types of rounds undertaken.[6] Despite being a commonplace and established activity there are few studies of ward round processes.[6,16] This review paper explores the purposes, attendees, roles, and perceptions of other attendees' roles during eight different medical rounding processes.[6] Rounds were characterised by three different purposes: to plan patient care; educate clinicians; and a combination of planning and education.[6]

A review of the literature exploring rounding processes in inpatient rehabilitation identified scant evidence of studies specifically on rehabilitation wards.[34] Rounding processes were underpinned by the principles of a multidisciplinary care team approach.[7,35] There are different multidisciplinary care processes in rehabilitation such as the multidisciplinary team meeting, case conferences and ward rounds.[36] A study carried out in the United Kingdom found weekly multidisciplinary ward rounds preferable to weekly multidisciplinary team meetings.[36]

All hospital wards, whether acute medical or rehabilitation, will have common issues. The evolution of ward rounds is ongoing and reflects the changing healthcare environment. Adaptations to a process that is already multifarious adds further complexity. Lack of standardisation can be challenging.[37] Within a single round classification there can be a number of variations in practice.[6] Participation in rounds can be affected by the location of the team who may work across different settings in a hospital.[5] At times, communication between medical officers, nurses, and allied health professionals can be inequitable with opinions not invited, or not treated with the same weight.[38]

1.5.2 Interdisciplinary teamwork during ward rounds.

Ward rounds are an opportunity for collaborative teamwork.[39,40] A challenge to shared planning during ward rounds is communication between the attendees.[40] Although there is a rising prominence of interdisciplinary team ward rounds[22,23] studies have primarily focused on medical and nursing clinicians.[23] Exploring the interdisciplinary experiences of high functioning teams is an opportunity to look at shared teamwork characteristics. Effective teamwork during ward rounds facilitates safer care planning, improved patient satisfaction, and supports clinicians to develop skills such as conflict resolution.[41] Inclusion of allied health in studies of teamwork, rounding processes and their involvement and perceptions are not well represented in the published literature. Therefore, one of the aims of this thesis was to expand on the earlier studies to include allied health professionals is an opportunity to investigate if medical officers, nurses and allied health professionals perceived teamwork similarly in order to support participation in rounds.

1.5.3 Identifying different rounding processes carried out on medical and rehabilitation wards.

Variation in the types of rounds, and an absence of formal training,[42] leads to ward rounds being, "learnt on the job"[37] which adds to an already complicated care planning process. Despite the long-standing tradition of rounds, no previous single or multi-speciality studies were identified exploring the relationship between theory based rounding classifications identified in literature, and the practical application and understanding of them by frontline clinicians.

Studying whether inter- and intradisciplinary teams have a shared understanding of rounding processes provides insight into the relationship between theory compared to the experience of clinicians. It also offers important exploration into the standardisation of ward rounds within a single facility. With an increasingly mobile workforce, health professionals may be exposed to, expected to learn, or assumed to know, multiple rounding processes in different clinical areas and organisations. Lack of agreement in the types of rounds undertaken can affect high quality care.[6] Lack of awareness of rounds occurring in a single speciality can lead to inconsistent attendance.[6] This can undermine collaborative care planning and communication of the plan.[40,43,44] Quality improvement initiatives involving rounding processes recognise their challenges.[45] However, little investigation has been undertaken into the interdisciplinary team's shared understanding of ward round processes carried out on their ward and perception of teamwork during the rounds. Therefore, one of the aims was to understand how health professionals define rounding processes undertaken in their wards, and if this understanding affects their participation and communication for care planning.

1.5.4 Health professionals' perspectives on interdisciplinary bedside rounds

IBR processes represented programs such as the NSW Health "In Safe Hands"[14] and reports from professional bodies specifically include allied health professionals in the inclusion of rounds. Even so, there are few studies into their involvement outside of evaluations from structured rounding implementation.[5,22,46] Exploring allied health professionals' perceptions identifies first, how allied health clinicians perceive their involvement in IBRs; and second, explores the relationship between medical officers, nursing, and allied health clinicians during IBRs. This is important to explore as each discipline will bring their own experiences and perceptions to the ward round. Therefore, one of the aims of this thesis was to explore all three health professions' perceptions of bedside rounding in order to identify commonalities and variations not previously identified.

1.5.5 The patient experience of ward rounds

Just as ward rounds are complex for health professionals, they can be equally challenging for patients. Patient interactions with health professionals during rounds is influenced by factors such as patient illness,[3] round location,[17] and the way clinicians sometimes communicate by talking about the patient in medical terminology instead of talking to the patient.[18]

The phrase "ward round" is commonly heard, and at times given as an explanation to when patients will see their doctor. However, this seemingly innocuous dialogue belies the sophisticated clinician-patient relationship during the round. While earlier studies[3,18] explore patient experiences of ward rounds, none were identified that investigated patients' understanding the phrase "ward round." Similar to the problem of trying to communicate information using medical jargon, if patients do not understand what a ward round is, then providing that as an explanation to when they will see the doctor is inadequate and not patient-

centred care. Patient experiences of ward rounds are varied, so exploring their perceptions offers a broader and deeper understanding of their experience.[3]

Patients from acute medicine and rehabilitation specialties experience different lengths of stays and have different care needs. Exploring different settings may identify if participation is influenced at the macro (government and policy level), meso (healthcare organisational level) or micro level (patient and/or clinician level) of healthcare.[47] Therefore, one of the aims of this thesis was to explore patient experiences of ward rounds in acute medical and rehabilitation specialties This leads to investigating what are the factors that contribute to the patient experience during ward rounds.

These five areas of investigation provide a picture of the system, health professional, and patient experiences and perspectives of ward rounds comparing two different specialties. The findings identify contributing factors to what influences clinicians' and patients' involvement in rounds.

1.6 Research questions, design and methods

One overarching research question and five sub-questions guide this thesis investigating clinicians' and patients' understanding of, and involvement in, ward rounds. The study was designed to address the gaps in the literature identified in the previous sections. The overarching research question is:

What influences clinicians' and patients' involvement in ward rounds?

The five sub-questions are:

RQ1: What ward round processes occur in medical wards and who participates?

RQ2: Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?

RQ3: How do clinicians describe the ward round processes on their wards?

RQ4: What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?

RQ5: What are patients' experiences of ward rounds?

1.6.1 Research design and methods

Influences on clinicians' and patients' involvement in ward rounds are investigated using an exploratory multi-method design.[48] A survey, incorporating quantitative and qualitative components, has been undertaken. Additionally, in-depth semi-structured interviews have been conducted. Throughout the study period, original literature search terms were rerun to identify any new studies. Additionally, a comprehensive literature search was completed for each the studies presented in Chapters 3-6. The research questions, study design, participants and outputs are presented below (Table 1.1). A summary of the research overview is presented at beginning of each chapter (Table 1.2)

Table 1.1 Research overview

Research questions	Methods	Participants	Thesis chapter
Overarching research question: What influences clinicians' and patients' involvement in ward rounds?			**Chapter 1 Introduction:** presents the rationale and research question for the study
RQ1: What ward round processes occur in medical wards, and who participates?	Narrative literature review		**Chapter 2 Literature review** Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *International Journal of Health Care Quality Assurance.* 2016;29(4):364-379.
RQ2: Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?	Survey	77 clinicians • 11 medical officers • 46 nurses • 20 allied health clinicians	**Chapter 3 Teamwork** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring interdisciplinary teamwork to support effective ward rounds. *International Journal of Health Care Quality Assurance. Accepted for publication February 2020.*
RQ3: How do clinicians describe the ward round processes on their wards?	Survey	77 clinicians • 11 medical officers • 46 nurses • 20 allied health clinicians	**Chapter 4 Rounding Perspectives** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and

Research questions	Methods	Participants	Thesis chapter
			effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11.
RQ4: What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?	Survey	77 clinicians • 11 medical officers • 46 nurses • 20 allied health clinicians	**Chapter 5 Interdisciplinary Bedside Rounds** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare.* 2019:12:1023-1032.
RQ5: What are patient experiences of ward rounds?	Observation Face-to-face Interview	• 14 ward rounds • 14 patients	**Chapter 6 Patient Experience** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019; 13:1415-1429.
Overarching research question: What influences clinicians' and patients' involvement in ward rounds?			**Chapter 7 Discussion:** presents the relationship between the five studies. **Chapter 8 Conclusion**

Table 1.2 Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patients' experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

1.6.2 Participants and settings

The studies were conducted across two specialties: acute medical and rehabilitation within a 165-bed public teaching hospital in metropolitan Sydney, Australia. Two wards from each speciality participated. Hospital inpatient services included medical, surgical, critical care, and rehabilitation, which specialises in aged care, orthopaedics, mobility, stroke, and needs assessment. Acute medicine and rehabilitation were chosen as study wards as they provide contrasting spectrum of healthcare. Acute medicine was represented by patients from cardiology, general medicine and the medical assessment unit. Patients from acute medicine have a higher acuity, than patients from rehabilitation who receive sub-acute, step down care. Sub-acute rehabilitation inpatient services include: co-location with the acute hospital; access

to a core multidisciplinary team with access to specialist services; and, access to an intensive multidisciplinary inpatient program.[35]

Health professional participants

Health professionals from the two acute medical and two rehabilitation wards were invited to participate by email and face-to-face contact. Data from health professional participants were collected using two methods.

In the first phase, data were collected using a purpose designed survey. The response rate was 93%. A total of 77 clinicians participated (Table 1.3). The inclusion criteria were: fully qualified health professionals; responsible for direct patient care; and, employed by the local health district. The directors and managers of the participating wards were informed about the study. They facilitated the process by forwarding pre-prepared information, in the form of an email, to inform staff that a researcher would be on their ward and inviting people to participate.

In the second phase, data collection was via an observational study of ward rounds which involved 14 clinicians carrying out rounds. Clinicians included: consultant; registrar; intern; student doctor; nursing unit manager; and bedside nurse. Consent to observe rounds was given by the Head of Departments and each clinician involved in the round verbally consented prior to observation.

Table 1.3 Health professionals from two specialties

Health professional	Acute medicine N (%)	Rehabilitation N (%)
Medicine		
Consultant	1 (4)	2 (4)
Registrar	3 (12)	2 (4)
Junior medical officer	2 (8)	1 (2)
Nursing		
Nursing unit manager	2 (8)	2 (4)
Clinical nurse specialist	3 (12)	3 (6)
Registered nurse	6 (23)	20 (39)
Endorsed enrolled nurse	-	3 (6)
Assistant in nursing	1 (4)	6 (12)
Allied health clinicians		
Senior	4 (15)	8 (16)
Junior	4 (15)	4 (8)
Total	**26 (100)**	**51 (100)**

Patient participants

In-depth, semi-structured interviews were conducted with patient participants. A total of 14 patients participated (Table 1.4). The response rate was 58% (14/24). All eligible patients from the two acute medical and rehabilitation wards were initially identified by the nursing unit manager and medical officers as they had the clinical expertise to assess their cognitive level and health status. Patients were eligible if they had no identified cognitive impairment; were English-speaking; and, had a medically stable health status. Surgical or post-operative patients, except those receiving rehabilitation on the rehabilitation wards, were excluded. Eligible patients were approached directly by the researcher and invited to participate.

Table 1.4 Patient participants

Gender	Acute medicine N (%)	Rehabilitation N (%)
Male	2 (29)	2 (29)
Female	5 (71)	5 (71)
Total	**7 (100)**	**7 (100)**

1.7 Ethics

Ethics approval for phase one of the study was granted by Northern Sydney Local Health District Human Research and Ethics Committee (approval: LNR/13/HAWKE/433) and acknowledged by Macquarie University. Ethics approval for phase two of the study was granted by the Northern Sydney Local Health District Local Health District Human Research and Ethics Committee (approval: LNR/13/HAWKE/365) and Macquarie University (5201600910).

1.8 Thesis organisation

As outlined in Table 1, this thesis is organised into eight chapters. Chapter 1 contains the introduction and rationale for the study. Chapters 2 to 6 comprise stand-alone, peer reviewed publications or manuscripts under review for publication, and include sections of introduction, methods, findings, discussions and conclusions for each perspective. Chapter 2: *Literature Review* presents the system perspective from the published literature review that formed the evidence base and rationale of the study. Chapters 3 to 5 (Teamwork, Rounding Perspectives, and Interdisciplinary Bedside Rounds) present health professionals' perspectives on ward round involvement. Chapter 6: *Patient Experience* discusses involvement in ward rounds from the perspective of the patient group. Chapter 7: *Discussion* outlines the combined thesis

findings in the context of current research within the field. Chapter 8 *Conclusion* presents concluding statements and identifies opportunities for future research.

Chapter summaries

Chapter 2: *Literature Review* presents a published narrative literature review of rounding processes undertaken in medical specialties.[6] The chapter analyses the complexities of ward round processes in the hospital environment. The classifications of eight ward rounds undertaken in medical specialties are identified. Each round is analysed for who participates and the role each person has in the round. The three reasons for conducting rounds were to plan patient care; educate clinicians; and a combination of planning and education. The most frequently identified health professional in the round was the medical officer. The patient was only identified as a participant in two rounding processes. To the best of our knowledge, the literature review was first of its kind to analyse, in-depth, ward round processes performed in medical specialities. This work has been published in the *International Journal of Health Care Quality Assurance.*

Chapter 3: *Teamwork* presents the enablers and challenges to teamwork from the perspective of the interdisciplinary team.[49] The study considers that intradisciplinary teams may have different approaches to teamwork and this bias may be brought into the ward round. Investigating the interdisciplinary team's perspectives on teamwork identifies if the challenges and enablers are consistent between teams and health professionals. The enablers to effective teamwork were similar across specialties and disciplines. There was more variation in the challenges. When identifying why teams work well there was agreement between health professionals. Having a clear plan that was communicated to everyone, feeling valued, understanding each other's roles, leadership and patient focused care were the themes that

cultivate positive teamwork experiences. The study adapted an earlier model of teamwork to develop a unique ward round teamwork framework. A team activity tool was developed to transition from theory-based teamwork to practical application. This work has been accepted for publication in the *International Journal of Health Care Quality Assurance.*

Chapter 4: *Rounding Perspectives* presents the clinicians' perceptions of rounding processes undertaken in their wards.[45] The study explores how clinicians define rounding processes on their ward and the relationship between this, and the perception of interdisciplinary team attendance at rounds. Participants nominated processes more consistently within individual clinical disciplines than by clinical specialty. Perception of attendance at rounds was inconsistent between health professionals. Despite the inconsistency's clinicians reported communication about patient care planning was effective. No previous studies exploring interdisciplinary teams' shared understanding rounds, and perception of team attendance was identified. The study built on theoretical explorations of ward to provide empirical evidence to their complexity. This work has been published in the *Journal of Evaluation in Clinical Practice.*

Chapter 5:

Interdisciplinary Bedside Rounds presents the perceptions of interprofessional healthcare teams on the benefits and challenges of an interdisciplinary ward round.[50] The study builds upon the growing area of research into medical and nursing perspectives of IBRs through the inclusion of allied health professional perspectives. Clinicians recognise the benefits of IBRs and how they can deliver person-centred care. However, time and competing priorities limited the ability for all clinicians to participate. This work has been published in the *Journal of Multidisciplinary Healthcare*.

Chapter 6: *Patient Experience* presents a study investigating the relationship between the patient involvement in ward rounds and collaboration with the healthcare team.[51] Some patients were unable to describe the purpose of a ward round despite having been involved in the process. Three main influencers on the patient experience of rounds were: the patient's own self; the health system; and medical officers. Patients more familiar with the health system were able to navigate rounding processes to ensure their needs were met. They described taking on responsibility for their own involvement and more satisfactory experience. To the best of our knowledge the study design of observing a patient during a ward round followed by an in-depth interview has not previously been undertaken in an acute rehabilitation ward. The approach presented a new methodology for investigating ward rounds across medical specialities. This work has been published in *Patient Preference and Adherence*.

Chapter 7: *Discussion* presents a discussion on the studies undertaken. Key findings for each study are described and critically analysed alongside current evidence.

Chapter 8: *Conclusion* provides the closing section to the studies. It discusses the four studies presented across Chapters 3 to 6 and answers the overarching research question. The findings are discussed in relation to current studies into ward rounds, teamwork and patient-centred care to address issues of effective clinicians' and patients' collaboration in rounds. Opportunities for future research arising from the series of studies in this thesis are presented.

1.9 Conclusion

Ward rounds are a traditional activity undertaken daily in hospitals. This study investigates the complexities of a seemingly "everyday" process for both health professionals and patients. The word "ward round" implies a single process, but the study shows that clinicians within one

health facility can undertake multiple processes. In turn, this means patients are also involved in more than one process. While it may not be possible to have a single rounding process, the foundations of effective teamwork and patient-centred care should be a guiding principle for them all.

Chapter 2: Literature review

Overview of Chapter 2

In Chapter 1*: Introduction*, I presented the rationale for the study and overarching research question: What influences clinicians' and patients' involvement in ward rounds?

Chapter 2: *Literature review*, presents a published narrative literature review.[6] This chapter contains the original work: Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review.

International Journal of Health Care Quality Assurance.

2016;29(4):364-379. doi: 10.1108/IJHCQA-04-2015-0053

The publication can be found at:

https://www.emerald.com/insight/content/doi/10.1108/IJHCQA-04-2015-0053/full/html

Chapter 2: *Literature Review* analyses the complexities of ward round processes in the hospital environment. The classifications of eight ward rounds undertaken in medical specialties are identified. Each round is analysed for who participates and the role each person has in the round. The three reasons for conducting rounds were: patient care, education, or a combination of both. The most frequently identified health professional in the round was the medical officer. The patient was only identified as a participant in two rounding processes.

Chapter 2 has been removed for copyright or proprietary reasons.

Table 2A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient's experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

The next chapter, Chapter 3: *Teamwork* explores how teamwork enablers and challenges influence effective team rounding.

Chapter 3: Characteristics of interdisciplinary teamwork that support effective ward rounds

Overview of Chapter 3

In Chapter 2: *Literature Review*, I presented the eight different rounding processes identified in medical wards. Rounds, whether interdisciplinary or intradisciplinary, are supported when there is a shared understanding of teamwork between clinicians.

This chapter contains the original work:

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring attributes of effective interdisciplinary teamwork to support ward rounds *International Journal of Health Care Quality Assurance.* Accepted for publication February 2020.

Chapter 3: *Teamwork* on ward rounds presents the enablers and challenges to teamwork from the perspective of the interdisciplinary team.[49] The study considers that intradisciplinary teams may have different approaches to teamwork and this bias may be brought into the ward round. Investigating the interdisciplinary team's perspectives on teamwork identifies if the challenges and enablers are consistent between teams and health professionals

Table 3A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient's experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

The next chapter, Chapter 4: *Rounding Perspectives* transitions from exploring the cultural influencers of teamwork to process influencers.

Abstract

Purpose

To explore clinicians' perceptions of enablers and challenges to interdisciplinary teamwork, and characteristics of teamwork that support collaborative ward rounds.

Design/Methodology/approach

A purpose designed survey was conducted in two acute medical and two rehabilitation wards from a metropolitan teaching hospital. Medical officers, nurses and allied health professionals were invited to participate. Questions were designed to ask about enablers and challengers to effective teamwork and experiences of teamwork. Descriptive and thematic analyses were used with the dimensions of effective teamwork as a framework for deductive coding.

Findings

The response rate was 93%. Findings aligned to the previously identified dimensions of teamwork. There was no meaningful difference between health professionals or specialty. Enablers to teamwork are: effective communication, shared understanding of patient goals, and colleague's roles. Challenges are: ineffective communication; individual personalities; lack of understanding about roles and responsibilities; and organizational structure. Additional challenges included: time, uncoordinated treatment planning, and leadership. Positive teamwork is influenced by leadership and team dynamics. Providing safe patient care contributed to positive experiences.

Practical Implications

Healthcare organisations can support teams by collaborating with clinicians to understand enablers and challenges of teamwork from their perspective.

Originality/value

Despite increasing interdisciplinary care models, nurses and allied health clinicians continue to feel their contribution to care planning is undervalued. Investigating if interdisciplinary teams have a shared understanding of characteristics that support teamwork will, in turn, support effective and quality of ward rounds.

Limitations

The study was conducted at a single site.

Keywords

Teamwork, interdisciplinary, ward rounds, experience

Article classification

Research paper

Introduction

Ward rounds are a process where health professionals work together to plan patient care and facilitate teaching opportunities to clinicians (Walton et al., 2016). A 2018 literature review (Petit dit Dariel and Cristofalo, 2018) found rounds were an avenue for interdisciplinary teamwork, but due to hierarchical culture, examples of medical teamwork were often at the forefront, with other health professionals extraneous to the physician team. Specialties demonstrated interdisciplinary teamwork differently. A rehabilitation ward displayed a vision statement outlining shared values and decision making across the interdisciplinary team. A general medicine ward demonstrated interdisciplinary teamwork during episodes of emergencies (Petit dit Dariel and Cristofalo, 2018).

Addendum to originality/value: To facilitate this transition "Plan Do Study Act" (PDSA) cycles would provide the opportunity to measure interventions taken to improve ward round quality.[52] Addendum to limitations: The impact of a single site study can include bias in results due to site specific external factors, such as workforce culture and local processes. This could affect the generalisability of the study.

When done well, ward rounds can be a daily example of effective, collaborative teamwork (Acharya, 2016, Moroney and Knowles, 2006). The importance of positive teamwork in ward rounds cannot be underestimated. Higher functioning teams deliver high quality care (Körner et al., 2016) and patients perceive that health professionals who work together in teams are the most effective (World Health Organization., 2012). The introduction of structured interdisciplinary bedside rounds has been shown to improve teamwork (Clay-Williams et al., 2018, O'Leary et al., 2011). Additionally, structured communication tools such as ISBAR (introduction, situation, background, assessment, and recommendation) (NSW Health, 2016) have been developed to improve the team communication during ward rounds. Structured communication tools are considered current best practice (Müller et al., 2018). Earlier studies have found structured communication improves satisfaction with interdisciplinary teamwork and communication (Müller et al., 2018).

Studies have shown that teamwork is achieved by five interrelated elements – leadership, mutual performance monitoring, backup behaviour, adaptability, and team orientation which are underpinned by attributes of mutual trust, communication and a shared mental model (Salas et al., 2005, Weller et al., 2014). These elements and attributes are also key to effective ward rounds (Ten Have et al., 2013, Schmelter et al., 2018, Royal College of Physicians and Royal College of Nursing, 2012, Walton et al., 2019b). Hence, in a circular positive reinforcing process: effective teamwork supports interdisciplinary ward rounds, which in turn, provides a structure to engage professionals to work collaboratively (Tang et al., 2018).

One challenge to effective teamwork is a lack of understanding of individual team member's roles (Byrne and Pettigrew, 2010). A shift from professional to patient centric care challenges traditional roles and boundaries of health professionals (Nancarrow and Borthwick, 2005).

Activities previously undertaken within an intradisciplinary team may now be the responsibility of interdisciplinary colleagues.(Nancarrow and Borthwick, 2005)

A lack of understanding about interdisciplinary team members roles can be a source of conflict (Tang et al., 2018). Allied health professionals working in rehabilitation found interprofessional teamwork can be positively impacted when there is interdisciplinary understanding of roles (Byrne and Pettigrew, 2010).

Another challenge to teamwork during rounds has been identified as a hierarchical culture which can lead to a mismatch in levels of effective communication with medical officers rating communication more satisfactory than nurses (Ratelle et al., 2016, Walton et al., 2019b). Clear communication and teamwork during rounds has been shown to improve patient safety and reduce the risk of adverse events (Royal College of Physicians and Royal College of Nursing, 2012, NSW Health, 2016).

Engaged medical, nursing, and allied health professionals are more likely to contribute to highly effective ward rounds (Stein et al., 2015). Yet clinicians have unclear expectations and low perceptions of teamwork and communication which have been found to be barriers to effective rounding (Wickersham et al., 2018, Ratelle et al., 2016). Despite moves to more collaborative interdisciplinary care, (Petit dit Dariel and Cristofalo, 2018) studies across a near 10 year period find nurses and allied health clinicians still perceive their opinions are not valued (Nugus et al., 2010, Walton et al., 2019b).

The status quo in nursing and allied health clinicians' perceptions of inequality with medical officers, coupled with a focus on interdisciplinary ward rounds leads us to ask two questions:

first, do interdisciplinary teams have a shared understanding of teamwork characteristics that facilitate high quality rounds; and second, what factors contribute to positive teamwork?

Methods

Aim and objective

To better understand ward round teamwork processes, we investigated medical, nursing and allied health clinicians' perceptions of the enablers and challenges to interdisciplinary teamwork. We asked clinicians three questions: what are the enablers for teamwork; what are the challenges to teamwork; and what are their experiences of positive teamwork?

Setting

The study was undertaken in a 165-bed teaching hospital in Sydney, Australia. Acute medicine (cardiology, general medicine and medical assessment unit) and rehabilitation specialties (aged care assessment and rehabilitation, orthopaedics, mobility, stroke, and needs assessment) were chosen as they represented different spectrums of patient acuity. Ethics approval for the study was granted by a metropolitan local health district research ethics committee (approval: LNR/13/HAWKE/433).

Study design

A mixed methods study was undertaken, using a purpose designed paper-based survey. The survey instrument was developed based on a previously conducted literature review (Walton et al., 2016) and industry experience of the researchers (Table 1). Survey questions required a combination of multiple choice and free-text responses.

Addendum to study design: Participants who pre-tested the survey included a registered nurse, nurse manager, nurse practitioner, pharmacist, physiotherapist, and midwife.

Table 1 Survey tool

Category	Question	Response
Q1 Demographic	What is your age?	18-25 26-35 36-44 45-54 55-64 65+
	What is your gender?	Male Female
	Which best describes your employment status?	Full time Part time Casual
	Which of the following options best describes the clinical discipline you work in?	Medicine: Consultant Registrar Junior Medical Officer
	What best describes your current level of professional seniority?	Nursing: Manager Clinical Nurse Specialist/Consultant/Educator/Practitioner Registered Nurse Endorsed Enrolled Nurse Assistant in Nursing Allied Health: Senior Junior New Graduate
	What ward do you work on?	Acute medicine Rehabilitation
Q2 Enablers and challenges to teamwork	In your experience what makes medical officers, nurses and allied health clinicians work well as a team?	☐ Medical model of health care ☐ Understanding each other's role in the patient care team ☐ Effective communication ☐ Working towards the same patient goals ☐ Ward based patient care teams (teams geographically situated on the same ward) ☐ When clinicians involve the patient in their decision making ☐ Other – please describe
	In your experience what are some of the barriers to medical officers, nurses and allied health clinicians working well as a team?	☐ Ineffective communication amongst clinicians ☐ Lack of understanding of the different clinical roles and responsibilities ☐ Individual personalities ☐ Organisational structure e.g. different clinical groups have different routines ☐ Culture of blaming another discipline if there is an error/patient treatment plan deviation ☐ Other – please describe
Q3 Experiences of interdisciplinary teamwork	Think about a time when you had a positive experience with interdisciplinary teamwork e.g. a cardiac arrest response/ performing an operation/coordinated discharge process and answer the following questions	
	Why did the team work well together? *e.g. defined roles/everyone helped each other*	
	What made it a good and memorable experience? *e.g. Doesn't happen very often to me, the support we gave each other*	

Addendum to Table 1: Allied health professionals were not broken down by profession due to the sample size which was too small to yield enough data for a trend.

Data collection

Frontline clinicians from all seniority levels participated. Participation was voluntary and written consent was obtained. Recruitment was through email and face-to-face invitations. Directors and ward managers facilitated the process by providing initial communication on the study by sending out information prepared by the researcher team to inform them a researcher (VW) would be on their ward to invite participants. Directors and ward managers also supported the study by providing rooms where the survey could be completed away from clinical work. The survey was completed at a time that did not interrupt clinical responsibilities and took approximately 15 minutes to complete. Data collection for acute medicine was completed within seven weeks, and in three weeks for rehabilitation.

Survey questions were divided into three topics (Table 1). First, *demographic questions* (experience, age, gender, seniority and employment status). Second, *enablers and challenges to effective teamwork* asked multiple choice questions on attributes that supported and challenged effective teamwork. Multiple choice questions also included an "other" option with a free text response. Participants were informed they could choose more than one answer during the introduction of the research. Third, *experiences of teamwork* used an Appreciative Inquiry (Cooperrider et al., 2008) approach to ask clinicians to describe a situation where they had had a positive experience of working in a healthcare team and why it was positive. This approach allowed for identification of strengths in people's experience of teamwork and what people valued in their experience

Data analysis

The dimensions of effective teams were used to inform data analysis of teamwork within the context of ward rounds (Table 2). Two forms of data analysis were undertaken. First,

descriptive analysis (Creswell, 2014) was undertaken for the survey responses to summarise patient demographic characteristics and enablers and challenges to effective teamwork. Analysis included respondent attributes of health profession, ward specialty and seniority. Next, thematic analysis was conducted with the free-text responses. These responses were reviewed in their entirety, and then key words and phrases were identified and coded. As the researcher became more embedded in the data, refining the codes resulted in two rounds undertaken for the question: "Why did the team work well?" and three rounds undertaken for the question "Why was it a good experience?". In this first stage of analysis, themes and concepts were developed independent of the descriptive analysis. This was to reduce the risk of bias in the theme development. In the second stage, concepts were interpreted in relation to descriptive analysis to give richer understanding of interdisciplinary teamwork.

Table 2 Dimensions of teamwork in the ward round context

Dimensions of effective teams	Examples in the ward round context
Leadership	Introduces healthcare team to the patient and initiate conversation between patient and health professionals (Walton et al., 2016) Facilitates shared decision making
Mutual performance monitoring	Team monitoring is evidenced through feedback which supports team learning and professional development (Schmelter et al., 2018) Organisational monitoring through policy makers and governing bodies developing guidelines and principles for interdisciplinary ward rounds (Royal College of Physicians and Royal College of Nursing, 2012, NSW Department of Health, 2011)
Backup behaviour	When these is an understanding of each other's roles during the round to ensure task allocation and responsibilities are delivered appropriately (Royal College of Physicians and Royal College of Nursing, 2012)
Adaptability	When the team is responsive to treatment plans as patients' needs change (Walton et al., 2019b) Is facilitated when there is effective team communication and shared goals (Leonard, 2004)
Team orientation	A shared mental model to facilitate patient centred care and mutual agreement in treatment goals "Being on the same page"(Weller et al., 2014)

Findings

Eighty-three clinicians were approached and 77 participated, resulting in a 93% response rate. Twenty-six (34%) of respondents were from acute medicine and 51 (66%) were from rehabilitation. The majority were employed full time and there was representation from all seniority levels from each discipline (Table 3).

All participants answered the multiple choice questions related to the enablers and challenges to teamwork.

Table 3 Participant demographics (Walton et al., 2019b)

Health Professional	Sex %		Age years Range	Employment status %		Seniority %	
Acute medical							
Medical	Female	83	26-54	Full time	100	Consultant	17
	Male	17				Registrar	50
						Junior medical officer	33
Nursing	Female	83	18-64	Full time	67	Manager	17
	Male	17		Part time	33	Registered nurse	50
						Clinical nurse specialist	25
						Assistant in nursing	8
Allied health	Female	88	18-64	Full time	88	Senior	50
	Male	13		Part time	13	Junior	50
Subtotal	**Female**	**85**	-	**Full time**	**81**	-	
	Male	**15**		**Part time**	**19**		
Rehabilitation							
Medical	Female	100	26-54	Full time	60	Consultant	40
				Part time	20	Registrar	40
				Locum	20	Junior medical officer	20
Nursing	Female	91	18-64	Full time	71	Manager	6
	Male	6		Part time	29	Registered nurse	59
	Blank	3				Clinical nurse specialist	9
						Endorsed enrolled nurse	1
						Assistant in nursing	8
Allied health	Female	100	18-44	Full time	83	Senior	67
				Part time	17	Junior	33
Subtotal	Female	94	-	Full time	73	-	
	Male	4		Part time	25		
	Blank	2		Locum	2		
Total	**Female**	**91**	-	**Full time**	**75**	-	
	Male	**81**		**Part time**	**23**		
	Blank	**2**		**Locum**	**1**		

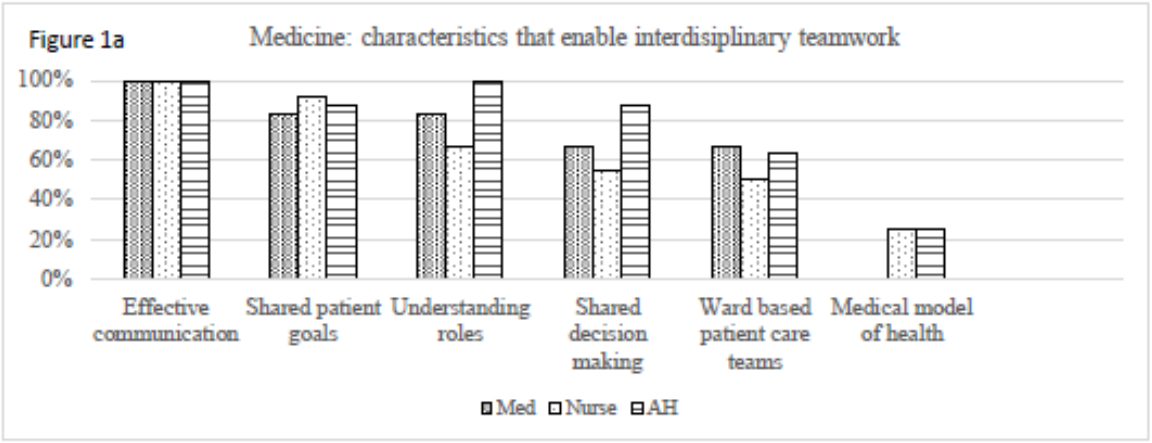
Enablers to interdisciplinary teamwork

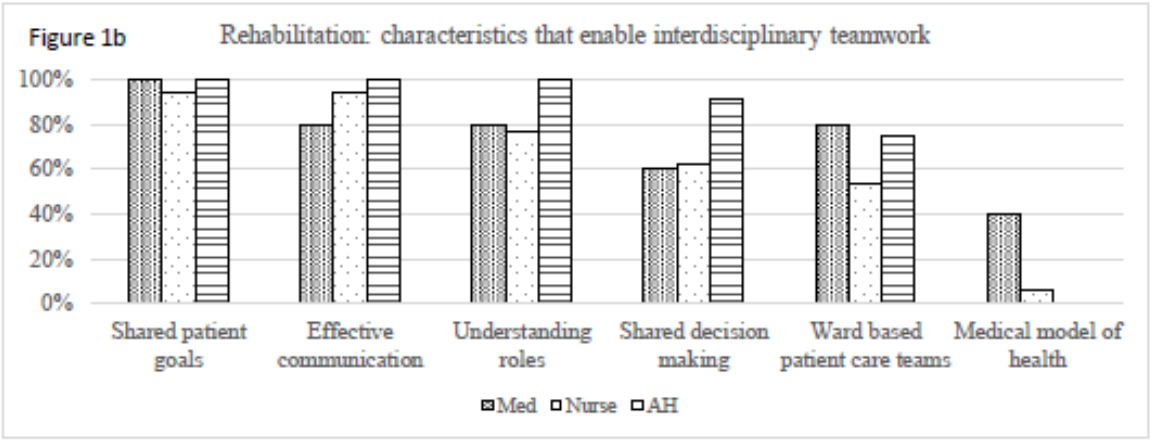
Participants nominated an average of 4 responses each (range 1 – 6). Medical officers ranged between 1-5; nurses 1-6; and allied health professionals between 1-5. No clinician nominated the option of "other".

Across both health disciplines in acute medicine and rehabilitation there was agreement with the three main contributing factors that facilitate interdisciplinary teams: effective communication within the team; shared patients' goals; and understanding the roles with the interdisciplinary team (Figures 1a and 1b). In the acute medical specialty, there was consistency in the characteristics nominated by medical officers and nurses. In rehabilitation the similarities were between nursing and allied health.

In both specialties, allied health professionals nominated "shared decision making" more frequently than medical officers and nurses. A difference was noted in the nomination of the "medical model of health". In acute medicine, the medical model of health received 19% of nominations: three (25%) nurses and two (25%) allied health professionals. In rehabilitation, the medical model of health received 8% of nominations: two (40%) medical officers and two (6%) nurses.

Figure 1 Enablers to interdisciplinary teamwork nominated by clinicians working in acute medicine and rehabilitation.





Challenges to interdisciplinary teamwork

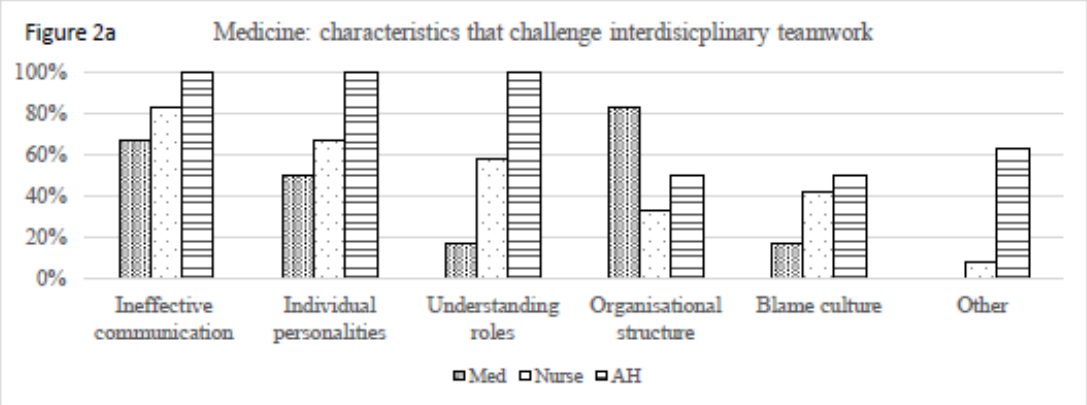
Participants nominated an average of 3 responses each (range of 1 – 7). Medical officers ranged between 1-5; nurses ranged between 1-6; and allied health professionals between 1-6. Fourteen clinicians (medical officers (n=2), nursing (n=5), allied health clinicians (n 7)) nominated the option of "other".

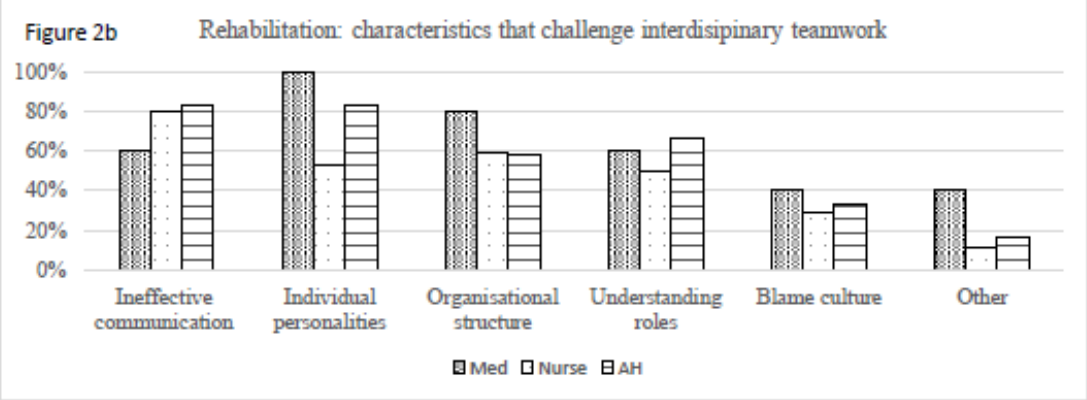
In acute medicine, nursing and allied nominated the same top challenges to teamwork: ineffective communication; understanding roles and responsibilities of colleagues; and

managing individual personalities of team members. Medical officers nominated organisational structure as the most significant challenge (Figure 2a).

In rehabilitation, medical officers and nurses nominated three similar top influencers: individual personalities; organisational structure; and ineffective communication. Allied health professionals included a lack of understanding roles and responsibilities in addition to ineffective communication and personalities (figure 2b).

Figure 2 Challenges to interdisciplinary teamwork nominated by clinicians working in acute medicine and rehabilitation.





Fourteen clinicians nominated "other" challenges to interdisciplinary teamwork (Table 2). The three themes were: competing priorities leading to teamwork being challenged patient acuity and time pressures; disagreements in treatment planning associated with medical hierarchy and personalities and; leadership failures.

Table 4 Additional challenges interdisciplinary teamwork nominated by clinicians

Theme	Key ideas	Medical N 2	Nursing N 5	Allied Health N 7
Competing priorities	• Increasing patient care requirements contributes to time pressures that affect: o Communication style o Location of team o Staff morale	✓	✓	✓
Disagreements in treatment planning	• Team members not agreeing on treatment plan: o Approachability of medical officers to discuss different treatment options o Treatment planning dominated by single team members		✓	✓
Leadership	• Lack of leadership from: o Senior team members o Self-responsibility in taking leadership roles in patient advocacy		✓	✓

Previous experiences of positive teamwork interactions

Clinicians were asked to reflect on an event where they experienced positive teamwork. The questions related to the scenario were: 1) why did the team work well together? 2) why it was a good experience? Themes from the two questions were closely related and reflected the relationship between the two characteristics of teamwork.

While the question did not request a clinical example, examples provided were from clinical practice involving patient care. They included responding to: a cardiac arrest call, a patient who

had fallen, discharge planning, and managing a patient's care while supervising a new staff member. Although the scenarios were different, they shared common attributes that lead to them being a positive experience.

When responding to the questions, medical officers described interactions with people using more generic terms such as: "team members"; "everyone"; and "people". In contrast nurses and allied health professionals named colleagues they were referring to, examples include: "nursing unit manager"; "doctors"; "nurses"; "occupational therapist"; "physiotherapist"; and "wardsman"

Why did the team work well together?

Seventy three (95% of all respondents) responded to the question about why the team worked well. Responses were categorised into five themes and 13 key elements (Table 5). All themes were represented by comments from all three disciplines.

Table 5 Health professionals experience of why teams work well together

Question	Theme	Key elements
Why did the team work well together?	The team had a plan that was communicated so all understood it.	Having a clear treatment or action plan enables clinicians to be prepared and know their responsibilities A communication style that supports discussion Recommendations communicated to both health professionals and patient to support decision making Respectful communication
	Team members were valued	Collaboration and support psychological safety
	Understanding interdisciplinary roles and expectations	Defined roles for team members Understanding the responsibilities of each role Individual roles complemented each other to support the work Respect for each other's roles
	There was a clearly defined and effective leader	One person was in charge The team knew from whom they were receiving instructions
	Patient focused treatment	All care provided was centred around appropriate and agreed patient goals

The most commonly provided comments related to the team having a communication plan that everybody understood. This included both the way the planning of the treatment of action was undertaken within the team, and that the final plan was confirmed with relevant people. One nurse described there being *"clear communication between staff, patient and patient's family about the situation occurring."* (Nurse 20)

Inclusive team behaviour was incorporated into many of the organization's "CORE values" (NSW Health, 2017) of collaboration, openness, respect, and empowerment. Although all of the key elements can be placed into four values, the word "collaboration" was specifically mentioned on its own. An environment where one could seek support was described by a nurse as *"each team grabbed a task to do."* (Nurse 2)

Understanding interdisciplinary roles and expectations was reported as knowing team members roles but also understanding their own role. It was linked closely to the theme of having patient focused care. This was described simply by one medical officer as "*Everyone understood each other's roles.*" (Medical 1)

A clearly defined leader was distinguishable from the previous theme of clearly defined roles as this was the only role specially named. The words associated with leadership were: "strong," "designated," and "coordination". Linked to the word leadership were descriptions of receiving orders from one person so that clinicians knew who to take direction from and listen to. This description from a nurse is representative of the comments *"one person in control giving direction and the team having clear orders"* (Nurse 25). Medical officers and nurses were specifically named in examples of leaders. No respondent named allied health clinicians as being in a leadership role.

Patient focused treatment was the least commonly described attribute. Descriptions of why the team worked well related to working towards goals made through shared decision making with both the patient and family.

Why was the experience a positive one?

Seventy-one (92% of all respondents) responded to the question about why the team worked well. Responses were categorized into four themes and 15 key elements (Table 6).

Table 6 Health professionals' description of why the teamwork experience was positive

Question	Theme	Key elements
Why was the experience positive?	Positive team dynamics	A feeling of being valued Everyone supported each other Purpose and value in the work Positive teamwork does not always happen
	Safe patient care delivery	There was a good outcome for the patient Processes were followed by the team The patient was the focus of the team
	Communication was collaborative	Everyone was involved in contributing to discussion Plans were both documented and verbally presented Feedback on the event was communicated back to the team
	Leadership	Leadership was fair and roles allocated worked to individual team members strengths Adequate staffing levels were allocated Equipment provided was in working order

Positive team dynamics was described by 62 (87%) of clinicians. Respondents described feeling valued both in themselves but finding value in their work. An allied health clinician explained in her situation *"all team members had a sense of purpose and value."* (Allied health 20). One nurse and one allied health clinician described the experience as positive as it does not always happen within their teams.

Safe patient care delivery focused primarily on having a positive outcome for the patient. All outcomes related to patients being discharged home or transferring to rehabilitation based care. One medical officer reported she liked seeing "*smiling patients discharged with improved function."* (Medical 10).

Collaborative communication led to a positive experience for all disciplines. Communication throughout the scenario was provided. From the planning stage where there was interdisciplinary communication, the implementation stage of the plan, to the feedback loop

from both the patient and family as well as the Nursing Unit Manager. Communication didn't just relate to the treatment planning or action plan, one nurse included educational opportunities through talking with the team *"there was a debrief afterwards with the aim to acknowledge each other and improve the next encounter."* (Nurse 28).

Leadership contributed to a positive experience by clinicians reporting the characteristics of their leaders. A sense of fairness and awareness of the team's abilities supported clinicians in their job. Leaders also facilitated adequate resourcing to again support teams in their role. A nurse described the leadership role in the situation of a rapid response for a patient as one who is *"very responsible and efficient who allocates jobs fairly."* (Nurse 32).

Discussion

Ward rounds are a daily example of healthcare teamwork. This study investigated clinicians' perspectives on the enablers and challenges of teamwork and lived experiences of positive teamwork. Effective teamwork impacts patient safety and outcomes (Clay-Williams et al., 2018). The study builds on previous investigations into interdisciplinary teams' perceptions of ward rounds and the benefits and challenges of participating (Walton et al., 2019b).

The importance of understanding teamwork can improve the quality of team based rounding processes. A model of teamwork presented key elements of teamwork used previously in studies into healthcare teams and rounding processes (Weller et al., 2014, O'Leary et al., 2012). Alignment of teamwork dimensions into rounding processes may improve the quality and safety of care delivery.

The findings of the study revealed agreement with the dimensions of teamwork. There were also similarities to an earlier study investigating the principles effective interdisciplinary teamwork (Nancarrow et al., 2013). There was agreement between medical officers, nurses and allied health clinicians of the attributes that facilitate and challenge teamwork. There was little difference in the findings between clinicians working in acute medicine or rehabilitation specialties. This contrasts with an earlier study that identified interdisciplinary differences in teamwork (Liberati et al., 2016). Clinicians' experiences of enablers and challenges to teamwork align to earlier studies into teams (Salas et al., 2005, Weller et al., 2014).

Communication, team structure, patient focused care, and a sense of feeling valued were the key influencers on effective teamwork. These are similar to an earlier study investigating clinicians' perspectives on the benefits and challenges of interdisciplinary bedside rounds (Walton et al., 2019b). For rounding processes to be effective and efficient a strong foundation in teamwork is necessary. Many of the enablers' foundation was inclusive team behaviour and incorporated many of the organization's "CORE values" of collaboration, openness, respect, and empowerment (NSW Health, 2017).

Our study found "shared decision making" (SDM) was inconsistently identified as a contributing factor to effective teamwork. A possible explanation for this is that SDM may be considered an outcome of effective teams rather than a facilitator. Training programs to improve health professional understanding of SDM are changing from a medical to an interdisciplinary focus (Diouf et al., 2016). Adopting an Appreciative Inquiry to investigate teams shared positive experiences of teamwork can support the development of a shared mental models of teamwork (Hung et al., 2018).

The importance of effective communication between health professionals is widely acknowledged and enables team to be adaptable. The findings showed that besides an objective delivery of communication, the intent behind the delivery is also important. Clinicians want patient care to be discussed and planned in a respectful manner that is inclusive. The development of structured communication tools such as ISBAR provide a framework for presenting information however, clinicians presented a desire to move beyond presenting to more inclusive communication. Including "discussion" into structured communication tools may act as a prompt for this to occur.

Our study found clinicians want team members to have clearly defined roles and responsibilities including that of an identified leader. This "backup behaviour"(Salas et al., 2005) allows appropriate allocation of tasks and role specific communication and team collaboration (Sims et al., 2015). Role ambiguity can lead to conflict and poor management of disagreements (Almost et al., 2016). Expanding on the characteristics of understanding roles is the respecting colleagues' roles (Nancarrow et al., 2013). Participants in our study did not specifically identify valuing the roles, but they expanded this to being valued as a person. Conversely, transformational leaders who empower teams and allowed for collaborative communication can positively influence conflict management (Almost et al., 2016).

Leadership was identified as more than the allocation of work and the provision of clear communication. It was recognized some leaders have a wider role of supporting teams by ensuring teams have the resources needed to complete their work. This aligns with the model presented in the introduction where the role of the leader was to coordinate and plan for their teams. This empowerment of teams meant clinicians felt valued.

Understanding roles led to an appreciation of colleagues' clinical knowledge. This was demonstrated in the positive experiences of teamwork. The challenge for interdisciplinary teams is when medical officers have the final decision on patient discharge. This may conflict with the clinical assessment of an allied health clinician (Petit dit Dariel and Cristofalo, 2018, Walton et al., 2019b). Respecting each other's roles and responsibilities and having a shared understanding of patient goals contributed to a positive experience as clinical input was valued and considered in the patient's treatment plan and goal setting. A contradiction to this was having multiple opinions about patient care during a ward round leading to an increase in discussion time (Walton et al., 2019b).

There was a relationship between time and the pre-determined challenges. This included increasing demands on clinicians due to the increasing acuity of patients. Being unable to locate team members for assistance or understand documented care plans place stress on clinicians. Having identified these, there are opportunities for organisations to address them. Strengthening teamwork in processes such as ward rounds may help to reduce some of these challenges. Nancarrow et al. (2013) study identified that teams may benefit by spending time developing teamwork. Despite the benefits of this, the challenge is the practical application of how this is achieved when interdisciplinary teams work in different locations and wards (Walton et al., 2019a).

Clinicians' experience of enablers to positive experience of teamwork provided further insight into what clinicians perceive as important. The dimensions of effective teamwork (Salas et al., 2005) are not healthcare specific but were implied by clinicians in our study. Patient focused care or shared decision identified in our study could be aligned to the "adaptability" dimension. This finding has been recognized in theoretical studies (Petit dit Dariel and Cristofalo, 2018)

and our study provides practical evidence to support these studies. Using the positive aspects of teamwork in one situation may increase health professionals desire to experience them again (Hung et al., 2018). Harnessing this may encourage transferability to different teamwork processes such a ward round.

Limitations

Our study was conducted at a single site and this may impact the generalizability of the results. However, the results do reflect previous studies into teamwork which support its transferability to other settings. The order of the survey questions, multiple choice questions before the open text responses, may have influenced the clinician's recollection of positive teamwork characteristics. The survey option of "medical model of health care" is an established model (Kefford C et al., 2005), but it is also known as the "biomedical model"(Mead and Bower, 2000) and this was not indicated in the survey. This may have impacted on the respondents selecting this option.

Conclusion

Disengagement among interdisciplinary teams during ward rounds remains a research focus. Although our study specifically investigated interdisciplinary teamwork, the consistency suggests the findings can be used in both inter and intra disciplinary team processes. Our findings indicate the foundations for effective teamwork are consistent amongst different health disciplines and specialties. This suggests external factors such understanding rounding processes and workforce structures are influential on teamwork during processes such as ward rounds. Identifying the core enablers and challenges enables team processes such as ward rounds to have a standardized set of principles and guidelines. This supports that foundation of

teamwork processes can be interchangeable between medical, nursing and allied health disciplines and specialties.

Implication

Effective teamwork is critical to healthcare teams providing safe patient care. As healthcare moves towards team based care and ward rounds, a "bottom up approach" to quality care should be considered. Healthcare organisations can support teams by collaborating with frontline clinicians to understand enablers and challenges of teamwork from their perspective.

References

Acharya, G. (2016), "Morning meetings and ward rounds must be retained as the essential components of clinical service", *Acta Obstetricia et Gynecologica Scandinavica,* Vol. 95 No.3, pp. 257-258.

Almost, J. Wolff, A. C. Stewart-Pyne, A. Mccormick, L. G. Strachan, D. & D'souza, C. (2016), "Managing and mitigating conflict in healthcare teams: an integrative review", *Journal of Advanced Nursing,* Vol. 72 No. 7, pp. 1490-1505.

Byrne, A. & Pettigrew, C. M. (2010), "Knowledge and attitudes of allied health professional students regarding the stroke rehabilitation team and the role of the Speech and Language Therapist", *International Journal of Language and Communication Disorders,* Vol. 45 No.4,pp. 510-521.

Clay-Williams, R. Plumb, J. Luscombe, G. M. Hawke, C. Dalton, H. Shannon, G. & Johnson, J. (2018), "Improving teamwork and patient outcomes with daily structured interdisciplinary bedside rounds: a multimethod evaluation", *Journal of Hospital Medicine,* Vol. 13 No. 5, pp. 311-317.

Cooperrider, D., Whitney, D. D., Stavros, J. & Fry, R. (2008), "The Appreciative Inquiry Handbook : For Leaders of Change".

CreswelL, J. 2014. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches,* Thousand Oaks, CA, SAGE Publications.

Diouf, N. T. Menear, M. Robitaille, H. Painchaud Guérard, G. & Légaré, F. (2016), "Training health professionals in shared decision making: Update of an international environmental scan", *Patient Education and Counseling,* Vol. 99 No. 11, pp. 1753-1758.

Hung, L. Phinney, A. Chaudhury, H. Rodney, P. Tabamo, J. & Bohl, D. (2018), "Appreciative Inquiry: Bridging Research and Practice in a Hospital Setting", *International Journal of Quality,* Vol. 17, No. 1, pp. 1-10.

Kefford C. Trevena L. & Wilcock, S. (2005), "Breaking away from the medical model: perceptions of health and health care in suburban Sydney youth", *Medical Journal of Australia,* Vol.183 No. 8, pp. 418-421.

Körner, M. Bütof, S. Müller, C. Zimmermann, L. Becker. S. & Bengel, J. (2016), "Interprofessional teamwork and team interventions in chronic care: A systematic review", *Journal of Interprofessional Care,* Vol. 30 No. 1, pp. 15-28.

Leonard, M. (2004), "The human factor: the critical importance of effective teamwork and communication in providing safe care", *Quality Safety Health Care,* Vol. 13, No. Suppl 1, pp. i85-i90.

Liberati, E. G. Gorli, M. & Scaratti, G. (2016), "Invisible walls within multidisciplinary teams: Disciplinary boundaries and their effects on integrated care", *Social Science and Medicine,* Vol. 150, pp. 31-39.

Mead, N. & Bower, P. (2000), "Patient-centredness: a conceptual framework and review of the empirical literature", *Social Science and Medicine,* Vol. 51, No. 7, pp. 1087-1110.

Moroney, N. & Knowles, C. (2006), "Innovation and teamwork: introducing multidisciplinary team ward rounds.", *Nursing Management (Harrow, London),* Vol. 13 No. 1, pp. 28-31.

Müller, M. Jürgens, J. Redaèlli, M. Klingberg, K. Hautz, W. E. & Stock, S. (2018), "Impact of the communication and patient hand-off tool SBAR on patient safety: a systematic review.", *BMJ Open,* Vol. 8 No. 8, pp 1-10.

Nancarrow, S. A., Booth, A. Ariss, S. Smith, T. Enderby, P. & Roots, A. (2013), "Ten principles of good interdisciplinary team work.", *Human Resources for Health,* Vol. 11 No. 1, pp 19.

Nancarrow, S. A. & Borthwick, A. M. (2005), "Dynamic professional boundaries in the healthcare workforce.", *Sociology of Health and Illness,* Vol. 27 No. 7, pp. 897-919.

NSW Health., (2011). 'Multidiciplinary ward rounds A Resource', available at: https://www.health.nsw.gov.au/nursing/projects/Publications/multidiciplinary-ward-rou.pdf (accessed 10 March 2013).

NSW Health., (2016). 'Clinical Excellence Commission - In Safe Hands', available at http://www.cec.health.nsw.gov.au/quality-improvement/team-effectiveness/insafehands (accessed 16 November 2016).

NSW Health., (2017). '*CORE* values'. available at: https://www.health.nsw.gov.au/careers/ministry/Pages/CORE-values.aspx (accessed 18 March 2019.

Nugus, P. Greenfield, D. Travaglia, J. Westbrook, J. & Braithwaite, J. (2010), "How and where clinicians exercise power: Interprofessional relations in health care.", *Social Science and Medicine,* Vol. 71 Vol. 5, pp. 898-909.

O'leary, K. J. Boudreau, Y. N. Creden, A. J. Slade, M. E. & Williams, M. V. (2012), "Assessment of teamwork during structured interdisciplinary rounds on medical units", *Journal of Hospital Medicine,* Vol. 7, No. 9, pp. 679-683.

O'leary, K. J. Haviley, C. Slade, M. E. Shah, H. M. Lee, J. & Williams, M. V. (2011), "Improving teamwork: Impact of structured interdisciplinary rounds on a hospitalist unit", *Journal of Hospital Medicine,* Vol 6 No.2, pp. 88-93.

Petit Dit Dariel, O. & Cristofalo, P. (2018), "A meta-ethnographic review of interprofessional teamwork in hospitals: what it is and why it doesn't happen more often.", *Journal of Health Services Research & Policy,* Vol. 23 No. 4, pp. 272-279.

Ratelle, J. Henkin, S. Chon, T. Christopherson, M. Halvorsen, A. & Worden, L. (2016), "Improving nurse-physician teamwork through interprofessional bedside rounding", *Journal of Multidisciplinary Healthcare*, Vol. 9, pp. 201-205.

Royal College of Physicians and Royal College of Nursing (2012), 'Ward Rounds in medicine principals for best practice', available at https://www.rcplondon.ac.uk/projects/outputs/ward-rounds-medicine-principles-best-practice#targetText=Ward%20rounds%20play%20a%20crucial,way%20ward%20rounds%20are%20conducted (accessed 24 November 2015)

Salas, E. Sims, D. E. & Burke, C. S. (2005), "Is there a "Big Five" in Teamwork?", *Small Group Research,* Vol. 36 No.5, pp. 555-599.

Schmelter, V. März, E. Adolf, C. Wölfel, T. L. Lottspeich, C. Fischer, M. R. & Schmidmaier, R. (2018), "Ward rounds in internal medicine:Validation of an Entrustable Professional Activity (EPA) observation checklist.", *GMS Journal for Medical Education.,* Vol. 35 No. 2, pp. 1-8.

Sims, S. Hewitt, G. & Harris, R. (2015), "Evidence of collaboration, pooling of resources, learning and role blurring in interprofessional healthcare teams: a realist synthesis", *Journal of Interprofsessional Care,* Vol. 29 No. 1, pp. 20-25.

Stein, J. Payne, C. Methvin, A. Bonsall, J. M. Chadwick, L. Clark, D. Castle, B. W. Tong, D. & Dressler, D. D. (2015), "Reorganizing a hospital ward as an accountable care unit", *Journal of Hospital Medicine,* Vol 10 No 1, pp. 36-40.

Tang, C. J. Zhou, W. T. Chan, S. W.-C. & Liaw, S. Y. (2018), "Interprofessional collaboration between junior doctors and nurses in the general ward setting: A qualitative exploratory study.", *Journal of Nuring s Management,* Vol. 26 No. 1, pp. 11-18.

Ten Have, E. C. M. Nap, R. E. & Tulleken, J. E. (2013), "Quality improvement of interdisciplinary rounds by leadership training based on essential quality indicators of the Interdisciplinary Rounds Assessment Scale", *Intensive Care Medicine,* Vol. 39 No. 10, pp. 1800-1807.

Walton, V. Hogden, A. Johnson, J. & Greenfield, D. (2016), "Ward rounds, participants, roles and perceptions: literature review", *International Journal of Health Care Quality Assurance,* Vol. 29 No 4, pp. 364-379.

Walton, V. Hogden, A. Long, J. C. Johnson, J. & Greenfield, D. 2019a. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice,* pp. 1-11.

Walton, V. Hogden, A. Long, J. C. Johnson, J. & Greenfield, D. 2019b. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare,* (under review).

Weller, J. Boyd, M. & Cumin, D. (2014), "Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare.", *Postgraduate Medical Journal,* Vol. 90, No. 1061, pp. 149-154.

Wickersham, A. Johnson, K. Kamath, A. & Kaboli, P. J. (2018), "Novel use of communication technology to improve nurse-physician communication, teamwork, and care coordination during bedside rounds", *Journal of Communication in Healthcare,* Vol. 11 No. 1, pp. 1-6.

World Health Organization., (2012), 'Patient Safety', available at: https://www.who.int/patientsafety/education/curriculum/course4_handout.pdf (accessed 14 March 2019).

Chapter 4: Clinicians perspective of rounding processes

Overview of Chapter 4

In Chapter 3: *Teamwork,* I explored clinicians' perspectives of enablers and challenges to effective teamwork.

This chapter contains the original work:

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11. doi:10.1111/jep.13248.

The publication can be found at:

https://onlinelibrary.wiley.com/doi/full/10.1111/jep.13248

This chapter continues the themes of exploring shared understanding and presents the clinicians' perceptions of rounding processes undertaken in their wards. The study explores how clinicians define rounding processes on their ward and the relationship between this and the perception of interdisciplinary team attendance at rounds. Participants nominated processes more consistently within individual clinical disciplines than by clinical specialty. Perception of attendance at rounds was inconsistent between health professionals. Despite the inconsistencies clinicians reported communication about patient care planning was effective.

Chapter 4 has been removed for copyright or proprietary reasons.

Table 4A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient's experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

Chapter 5: *Interdisciplinary Bedside Rounds* takes a deeper exploration of a single rounding process. The benefits and challenges to IBRs as perceived from the clinician's perspective provides insight into the juxtaposition between teamwork and ward round process.

Chapter 5: Interdisciplinary bedside rounds: health professionals' perspectives

Overview of Chapter 5

In Chapter 4: *Rounding Perspectives*, the interdisciplinary teams' shared understanding of ward rounds undertaken on their ward was explored

This chapter contains the original work:

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare*. 2019;12:1023-1032. doi:10.2147/JMDH.S226330.

Chapter 5: *Interdisciplinary Bedside Rounds* presents the perceptions of interdisciplinary healthcare teams on the benefits and challenges of an IBR. The study builds upon the growing area of research into medical and nursing perspectives of IBRs through the inclusion of allied health professional perspectives. Clinicians recognise the benefits of IBRs and how they can deliver person-centred care. However, time and competing priorities limited the ability for all clinicians to participate.

Table 5A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient experiences of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

The next chapter, Chapter 6: *Patient Experience*, transitions from exploring ward rounds from the system and health professional perspective to the patient, and which characteristics support person-centred rounds.

Abstract

Purpose

Interdisciplinary bedside ward rounds have the capacity to facilitate coordinated interprofessional patient care. To be an effective means of care coordination, clinicians need explicit understanding of how these rounds contribute to patient care. By identifying benefits and challenges to the effective use of interdisciplinary ward rounds, clinicians create opportunity to improve interprofessional teamwork, care planning, and coordination of patient care.

Methods

A survey was conducted with frontline professionals in two acute care and two rehabilitation wards from a metropolitan teaching hospital. There were 77 participants, representing medical officers, nurses, and allied health clinicians. Questions examined the perceived benefits and challenges of conducting interdisciplinary ward rounds in their units. Survey findings were coded for meaning and then grouped into themes.

Results

Benefits revealed a desired care delivery model challenged by the complexities organizational and professional cultures. The themes of 'being on the same page', 'focusing on patients', and 'holistic care planning' underpinned the ideas of collaboration and improved patient-centred care, that is, benefits to patients. Challenges centred on health professionals time constraints and the coordination of teams to enable participation in rounds. The themes were more distinct, logistical barriers of 'time', 'workforce', and 'care planning'.

Conclusion

Overall clinicians recognise there are greater benefits to IBRs and have a willingness to participate. However, careful consideration is required to introduce and continually achieve the best from IBR as they require changes in organizational context and culture.

Keywords: challenges, benefits, coordination, patient focused care, time factors; communication

Introduction

Ward rounds have been a pivotal part of traditional hospital life in the planning and delivery of patient care.[1] Additionally, they provide a platform for health professionals to give and receive clinical education. Different rounding processes combine these goals in specific ways, as reflected by their titles. They include ward; multidisciplinary; consultant; teaching; post-take; traditional; working; and review of ward.[2] There is significant variance in the structure and design of rounds.[3] Variations can include: the structure and focus of the round , such as for pharmacy or discharge;[4] the location of the round, such as bedside or corridor; and the names of rounds can be interchangeable, such as 'interdisciplinary' with 'multidisciplinary.'[2]

Naming variations associated with different care models may influence rounding processes. Health professionals working in a multidisciplinary team structure work in parallel. That is, each discipline has their own goals for the patient rather than shared goals with the team.[5] Interdisciplinary care teams work more collaboratively to plan patient goals as a team.[5]

Different rounding processes show variance in multidisciplinary round participants and roles.[2] Three combinations were identified; medical, nursing, and allied health; medical, nursing, allied health and patient; and medical, nursing and patient. The medical role was described in all studies. The role often took on one of leadership, teaching and decision making around patient care. The nursing role was the next most commonly described. The roles included: patient advocacy; to present patient care, and to a lesser degree, leadership during the round. The role of allied health clinicians, such as speech pathologists, dieticians, social workers, physiotherapists and pharmacists, was not specified in half of all studies that included them. Studies that did specify their role showed they were concerned with discharge planning and medication management when a pharmacist was a participant. The patient role was described

as clarifying treatment plans, goals and discharge plans.[2] The combination of these variances can impact the safety and quality of the care patients receive.[6]

Not surprisingly, health professionals' understanding and experiences of their own ward rounds, within and between disciplines and specialities, varies across rounding processes.[7] In the acute settings studied, nursing and allied health clinicians participated in multidisciplinary bedside rounds. By contrast, medical officers did not identify multidisciplinary rounding processes. This differed from the rehabilitation settings studied, where representatives from each health profession agreed that the rounds they undertook were multidisciplinary rounds.[7] In short, health care teams can, and do, participate in rounds without a shared understanding of the process or role requirements.

Awareness amongst health care team members of their roles and responsibilities in rounds enables a more collaborative approach to care planning.[8] Interdisciplinary bedside rounds (IBRs) are known to improve team collaboration and satisfaction,[4,9] and coordination.[3] Specific benefits include: improved interprofessional communication; greater awareness of patient care issues; improved team communication about the patient care plan; inclusion of the patient in decision-making; and teaching opportunities.[3,10] IBRs have been shown to improve the quality and safety of the care delivery through reduced mortality rates and long term morbidity.[11]

IBRs, however, do not guarantee a collaborative approach to care delivery as health professionals can be restrained by the need to hold onto boundaries and knowledge.[11] Challenges include: time constraints; coordination of clinicians' availability; and, the length of time taken for discussion.[3,10] Introducing or consolidating interdisciplinary bedside ward rounds may be challenging as they require clinicians to make a cultural shift from working in

silos to working collaboratively. Support at an organizational level is also necessary to facilitate this shift.[12,13]

The variance in health professional representation during IBRs, combined with disconnection in round identification, leads us to question if health care teams are 'on the same page' when organizing and delivering care. Hence, we sought to investigate medical officers, nurses and allied health professionals' perceptions of the benefits and challenges of IBRs. Examining the complex issue of IBRs we aimed to uncover professional's understanding and practice, across disciplines and specialities, and the implications of these on care coordination. In this paper, we use the term interdisciplinary to describe health professionals from medial, nursing and allied health professions collaborating to plan patient care. IBRs refer to rounds that are undertaken at the patient's bedside. Allied Health disciplines involved in this study are: physiotherapy, speech pathology, dietetics, neurophysiologist, and occupational therapy.

Method

Setting

The study setting was a teaching hospital located in metropolitan Sydney, Australia. Adult inpatient services are provided in medicine, surgery, critical care, and rehabilitation. Clinicians working in four wards in two specialties – acute medicine and rehabilitation services - were invited to participate in the study. IBRs were not routinely undertaken within either speciality.

Ethics

Ethics approval for the study was given by a metropolitan local health district research ethics committee prior to the commencement of the research. The approval reference is: LNR.13.HAWKE.433.

Research design

Between March 2014 and March 2015, a qualitative study was carried out. A paper-based survey was distributed to clinicians from all seniority levels across medical, nursing, and allied health professions. The survey was purpose designed for the study. Questions were informed by literature[2] and the investigating team members' industry experience. Participants were asked to consider the benefits and challenges of interdisciplinary bedside rounds, to identify up to five issues for each theme. The tool provided space for up to five issues documented in free text. Additionally, at the end of each question a statement saying, "No benefits" and "No disadvantages" were provided as an answer option (Table 1). Participants were provided with the definition at the start of the survey.[2] No examples of benefits or challenges were provided as prompts.

The survey was pre-tested within an interdisciplinary team with equivalent experience and context within the same local health district, to assess question understanding and test our analysis technique. No changes were made to the original format.

Table 1. Survey question: benefits and challenges of IBRs

Survey question	Response
An interdisciplinary ward round is when the specific medical, nursing and allied health clinicians involved in a patient's care meet with the patient and along with the patient summarise and plan the nest steps in the patients care.	1. 2. 3. 4. 5.
What are the benefits to having a multidisciplinary ward round? (list up to five)	☐ No benefits
What are the disadvantages to having a multidisciplinary ward round? (list up to five)	1. 2. 3. 4. 5. ☐ No disadvantages

Data collection

Paper-based surveys were distributed directly to clinicians by a member of the research team. Both verbal and written instructions were provided. Written consent was obtained prior to survey. Participation was voluntary, and supported by ward managers and health professional directors, who facilitated clinician participation by providing rooms and times so that the survey could be completed. The researcher visited the wards to distribute the surveys and waited to collect them. The survey took approximately 15 minutes to complete and was conducted during a time nominated by participants that did not disturb clinical work.

Analysis

Data were entered into an MS Excel file. Each participant was assigned a code and any identifiable text was deidentified during the data entry stage. A thematic analysis was adopted. This allowed researchers to become more familiar with the study for responses and word diversity to be considered within the context of the whole text.[14] Analysis was guided by the Schwandt, Lincoln and Guba[15] framework for analysis. Responses were coded and grouped into similar concepts which then became the basis for the overarching themes (VW). Linking concepts lead to the development of sub themes using key elements of each to support them. Themes and sub themes were compared between specialty, and within and across disciplines. These enabled researchers to identify relationships between challenges and barriers within different clinician cohorts. Codes and themes were discussed with the research team to ensure a common understanding and agreement. Any disagreements were talked through within the team. Implications and meaningful application of the findings to the practical healthcare environment were discussed within the team. Throughout the findings, participant quotes were extracted to support the themes. Participants were coded by professional group: medical officer (MO); nursing (N); and allied health professional (AH).

Findings

Response rate

Eighty-three health professionals were approached. Seventy-seven participants completed the survey, resulting in a 93% response rate. Acute medicine respondents totalled 26 (34% of all respondents). Rehabilitation respondents totalled 51 (66% of all respondents). The greatest number of surveys were completed by nurses (n=46), followed by health allied clinicians (n=20), and medicine completed the fewest (n=11). Seventy-one participants completed the question on the benefits of an interdisciplinary bedside round (11/11 medical officers; 41/46

nurses; and 19/20 allied health professionals). Free text responses varied between bullet point responses and short paragraphs.

Benefits of interdisciplinary bedside ward rounds

A total of 268 individual benefits were identified by participants. These were categorised into three overarching and interrelated themes (Table 2). Within these, seven sub-themes and 10 key elements were identified. No participants chose the 'no advantage' option.

Table 2. Benefits of interdisciplinary ward round

Themes	Sub themes	Key elements
Being on the same page	Effective communication Efficient workflow	• Direct communication between team members • Developing a more cohesive health care team • Medical officers more accessible to other clinicians • Improved teamwork
Focusing on patients	Patient satisfaction Access to information	• Patients gain confidence when they see the team working together • Enables patient and family to be better informed of their care • Individualised care
Holistic care planning	Patient flow Care planning clarity Shared contribution to care planning	• Discharge planning • Focus is on interdisciplinary information not just medical • Plans are current and relevant

Theme one: Being on the same page

The most common comments provided by respondents related to 'being on the same page'. Health professionals most frequently identified teamwork as a benefit of interdisciplinary rounds. All health professions identified benefits that described interdisciplinary rounds as building more cohesive teamwork. Specifically, medical officers noted this may reduce team conflict and provide a greater understanding of the patient's care. Improved teamwork was

facilitated by: awareness of individual team member's roles and responsibilities; understanding individual clinician's progress with patients; and sharing knowledge within the wider team.

> *"Understand each other's roles better and brings better team-work."* N42
>
> *"Builds team camaraderie."* N44
>
> *"Teamwork, get to know other clinicians."* AH3

Clinicians stated that interdisciplinary rounds would improve communication both within the healthcare team, but also between the team and patient. 'Being on the same page' was a phrase all participant groups used in their response. Medical officers defined this as receiving 'real time' information about the patient. Nurses described being on the same page as providing consistent expectations for patients. For allied health, being on the same page enabled patients to speak directly with the whole healthcare team rather than multiple clinicians at different times. This was further described as improving patient satisfaction, thereby reducing patient complaints. Allied health clinicians stated they could more easily raise concerns with medical officers as they could speak to them directly.

> *"Nursing staff and allied health able to express concerns to patient and medical officers."* AH9
>
> *"Everyone is on the same page and expectations are clear."* N25
>
> *"Saves time as the information is relayed then and there."* M7

The opportunity to have face to face communication was identified by both nursing and allied health clinicians. It was considered more reliable than written documentation.

> *"Often progress notes are not sufficient as a method of passing on information."* N37
>
> *"It saves me from finding out medical orders written in the medical records at the end of my shift."* AH4

Workflow efficiencies were described in terms of time saving processes. Meeting with the whole health care team and being able to talk directly to both colleagues and patients reduced time spent on following up information. Participants reported that clarification of orders could be addressed at the time they are made, and with the person making the order. Nursing and allied health clinicians noted that this reduces redundant communication with team members and reduces repeating information while seeking clarification from different team members. From the patient's perspective, IBRs reduce repetition of questions being asked of them.

> "*Saves times to chase up doctors.*" N2
>
> "*Things are not being repeated over and over again. There is no confusion with what has been ordered or discussed.*" N24
>
> "*Reduction in over communicating to other team members of the MDT.*" N29
>
> "*Improves efficiency – don't have to chase for information.*" A4
>
> "*The patient doesn't need to repeat their wishes to individual team members during one to one sessions.*" A18

Theme two: Focusing on patients

'Focusing on patients' was described by all health professionals from the perspective of the patient and how the patient would benefit. All health disciplines reported patients feeling more cared for if reviewed by the interdisciplinary team together. Medical, nursing and allied health all believed patients would have more confidence if they saw the whole team working together.

> "*Good for the patient to see the team working together.*" N1
>
> "*Provides the patient with more confidence when they see the team working together*" AH6
>
> "*Can solve patient's concerns immediately as everyone is present in ward round*" M11

Medical officers said this would allow for more than just medical issues to be addressed and would give a greater perspective on the patient's overall progress. Nursing and allied health supported this, indicating that when a complete picture of a patient is provided goal setting becomes more patient centred. Patients and family members are better informed as they receive information from all team members, which allows any issues or questions to be addressed together. Building on this, allied health clinicians perceived that identified rounds that are held at the same time each day provide more consistency and opportunity for involvement.

> *"More ideas for patient care."* M5
>
> *"Consistency for staff/ families/ patients/ services that team meets and plans at same time every day."* AH5

Involvement of patients in their care was valued by all disciplines. Having relevant health providers together enabled patients to participate in goal setting and individualised their care. Nursing and allied health agreed these empowered patients to be active participants in their care. Medical and nursing expanded on this, stating that patients who are more actively involved are more likely to be compliant with their care planning and recommendations.

> *"Patient's feel empowered and confident as they are part of the process and thus are more likely to be compliant."* N13
>
> *"Patients are directly involved in discussion of goals and treatment."* AH18

Nursing and allied health both identified patient advocacy as a key element of providing patient focused care. When present during the round, participants could facilitate discussion between patients and medical officers, especially if a patient was uncomfortable communicating with doctors.

"Advocate for patients who may not feel comfortable speaking directly to medical staff." AH4

Theme three: Holistic care planning

'Holistic care planning' elements were nominated by all respondents. While this is closely linked to the previous theme, holistic care planning key findings related to the outcomes and process of providing patient focused care. All health professional disciplines identified common care planning goals as benefitting themselves, by being more informative and more time efficient. Medical officers reported access to supplementary information on patients would assist with care planning.

"Patient is seen at centre of care and more holistic." N29

"Addressing not just the medical issues of the patient but also their functioning and preparedness for home environment." M5

"Holistic view of how the patient is managing which equates to more effective care." AH4

Nursing perceived clearer care plans as a benefit. Review of the current care plans by all care providers facilitated proactive interdisciplinary care planning that can be understood by all involved. Similarly, both nurses and allied health clinicians stated they could be involved in formulating care plans.

"I can provide information to the patient's care team that helps formulate a plan." AH6

"Clear pathways" N11

"...know the most updated patient's condition and to facilitate discharge plans and treatment." AH8

Medicine, nursing and allied health clinicians considered that improved patient flow could stem from interdisciplinary rounds. Similarly, discharge plans could be facilitated by rounds through improved care planning, to ensure everyone was working towards the same discharge plan.

> *"All on same page for discharge planning – patient aware too."* AH7

> *"Improved discharge planning – leads to decreased length of stay."* M9

Challenges of interdisciplinary bedside ward rounds

A total of 129 individual challenges of interdisciplinary rounds were identified by respondents. These were categorised into three overarching themes (Table 3). Within these, nine sub-themes and 10 key elements were identified. Additionally, 17 respondents (3 medical officers and 14 nurses) indicated no disadvantages to interdisciplinary rounds

Table 3. Challenges of interdisciplinary bedside ward rounds

Themes	Sub themes	Key elements
Time	Takes time away from providing care for patients The time required to complete the ward round Parallel processes	• Takes clinical time from other patients • Multiple clinical opinions will increase discussion time • Case conference and journey board process in place
Workforce	Team coordination Different health professional team structures Perception of respect	• Difficulty in team meeting at an agreed time • Team structures not uniform • Some patients and discussion irrelevant to different clinicians • Power imbalance between disciplines
Care planning	Patient factors Environment Disrupts routine care	• Uncomfortable for patients • Too many around bed space • Competing priorities caring for other patients

Theme one: Time

Health professionals identified 'time' as the most significant challenge to undertaking interdisciplinary rounds. Although our survey did not specify which patients would be reviewed on an interdisciplinary round, from their answers, participants indicated an assumption that *all* patients would be reviewed at *every* round. Time involved four elements. First, the length of time a round could take if all patients were reviewed daily. The main factors contributing to this were lengthy discussions due to multiple clinical opinions. There were concerns that if the round was not well managed, the time taken to complete it could be extensive. Patients and family were perceived to potentially contribute to a lengthier round by wanting more input, due to having the team all present.

> *"Take a lot of time to discuss patient care individually."* N5
>
> *"Time consuming – often 25 patients to see every day."* M6
>
> *"Increased time factor. Patient (+ family) would want more input."* AH2

Although the importance of interdisciplinary rounds was acknowledged, nurses had concerns about how the rounds would affect other patients, and nurses' ability to provide care for them. Nursing staff considered that the round may limit the time staff had to provide care to their other patients.

> *"Can be time consuming for nurse, depending on time of day and demands of other patients."* N1
>
> *"I feel multidisciplinary ward rounds are essential component to patient care, however time often doesn't permit us to be part of the process"* N13

Allied health clinicians stated interdisciplinary rounds overlap with other processes already in place. These are the journey board and case conference. The former is an electronic whiteboard

used for discharge planning and patient flow and located in the ward corridor.[16] A case conference consists of members of the interdisciplinary team meeting in a room to discuss patient goals and treatment plans. A patient can be invited to attend [10] Allied health professionals questioned if it was necessary to have parallel processes, which they viewed as leading to inefficient use of time.

> *"Is it necessary when we have case conference and journey board already?"* AH17
>
> *"Overlaps with case conference and journey board meetings"* A18

Theme two: Workforce

Challenges identified with 'workforce' were lack of team coordination, structure and respect. Clinicians from all health professions nominated difficulties with team coordination. This was defined as being unable to have attendees present at the same time due to competing priorities, coordinating meal breaks and finding a convenient time for the round. Medical officers and allied health clinicians reported not all patients require interdisciplinary team involvement, and this would affect coordination of the round. One allied health clinician stated that failing to have adequate team coordination could lead to an extended round; attendees arriving late would need to be updated on issues already discussed.

> *"Getting it organized so all can be available at one time. People have to have breaks (tea breaks). Organising could be the biggest problem."* N44
>
> *"Can be difficult with getting all staff involved i.e. doctor, nurse, allied health at the same time"* AH1
>
> *"Some aspects of care not relevant to all members of multidisciplinary team."* M6

Team coordination linked closely with team structure. Nursing and allied health clinicians raised this as a challenge as each health professional team is structured differently. Teams that

are not ward based, but specialty based resulted in nurses caring for patients from different medical and allied health teams. Nurses were concerned that being involved in the round meant they were not available to other patients and argued increased staffing levels would be required to facilitate their involvement. Allied health clinicians, not ward based but hospital based, reported limited staffing levels that would prevent them from attending all rounds for their patients. They were the only health profession to comment on having to cover multiple wards therefore specialities.

"All staff can cover half hospital, or all hospital therefore can't do all the rounds" AH1

Nurses identified challenges related to a hierarchical workforce. They described this as not being asked their opinion by medical officers which resulted in them not offering their opinion into care planning.

"Fear of hierarchy – perhaps my opinion on medical aspect I wouldn't voice to doctors?" N20

"Nursing input not always obtained..." N25

Theme three: Care planning

Challenges of 'care planning' were more likely to be identified in terms of negative impacts on patients, rather than on clinicians. Challenges resulting from patient factors, environment and routine care provision were identified.

Participants from all health professions were concerned about the effect rounds would have on patients regarding privacy and limited space. Nurses also identified allied health professionals included multiple disciplines and there may not be the physical space for them at the bedside. All three professions said the patient would feel overwhelmed and intimidated by having multiple clinicians at the bedside. The physical effect of increasing a patient's confusion could

be a side effect. All three professions reported a lack of privacy for patients in a multi-bed room as a concern. This included the inappropriateness of some discussions to have about patients in front of them. An allied heath clinician felt there were already concerns with privacy during other rounding processes such the journey board due the communal areas it is undertaken.

"Some things not appropriate to discuss in front of patient." A7

"Confused patients become more confused." M1

"Overcrowding patient or intimidating patient." M2

Disruption to routine care was implied in many responses by all health professionals. Participants were concerned patients would lose therapy and clinical time while staff attended rounds. It was perceived that rounds could disrupt the routine of staff and may impact negatively on patient care provision.

"*Patients lose their therapy time on ward round days."* M11

"Prevents nurses or other team members from providing other patient care and giving medications." N35

"Increased time taken to attend which means other patients may miss out on therapy." A19

Discussion

This study investigated the perceptions of medical officers, nurses, and allied health clinicians on the benefits and challenges of IBRs. Our findings add to an emerging knowledge base documenting clinicians' perceptions of rounding processes undertaken on their wards and impacts on patient care, safety and quality.[17,18]

There was juxtaposition between these benefits and challenges that revealed the complexities of IBRs. This was a similar finding to an earlier study by Merchant and Federman[19] where reconciling benefits and challenges was identified. The themes of 'being on the same page', 'focusing on patients', and 'holistic care planning' underpinned the ideas of collaboration and improved patient-centred care, that is, benefits to patients. These themes were closely linked through interconnecting key elements centring around improved patient care. The challenges of IBRs were more distinct, logistical barriers of 'time', 'workforce', and 'care planning'. Many of the challenging key elements centred around how IBRs affect clinicians, as opposed to patients. For example, the benefit of having all team members present and providing an opinion improved team communication and communication with the patient; yet this was equally a challenge to available time, resulting in a longer rounding process. This idea was summarised by one nurse's comment that IBRs are essential, but time does not allow participation.

Our findings indicate that clinicians want to work in a cohesive interdisciplinary team. IBRs were perceived to facilitate effective interdisciplinary communication, yet some health professionals, for example nurses, feared their opinion would not be valued by the medical hierarchy. This was despite medical officers believing having nurses and allied health clinicians at a round would provide them with additional patient information. These contrasting ideas and perspectives reveal the complex social context and organizational culture than just what is experienced at an IBR. Clinicians are influenced by the hospital context and culture which affect their interdisciplinary attitudes and practice.[20] Studies have shown challenges around boundaries, such as authority and intradisciplinary standards of conduct, strongly influence health professionals.[11,21] The responses also show the influence medical officers have not only their own identity but that of nurses which contributes to interdisciplinary boundaries.[11]

Despite rounds being considered a cornerstone of patient care *planning*,[2,3] nursing and allied health clinicians frequently commented that IBRs prevented them from *providing* routine care to their patients. A distinction between the planning and provision of care was clearly made. Furthermore, there is a disconnection between how nurses and allied health clinicians see their roles in IBRs. Although rounding processes have evolved, medical officers largely remain the central participants. This may influence the idea that any rounding process involving medical officers is a medical activity. Nursing and allied health professional commented that they frequently felt unable to contribute, and since their role was that of advocate and not decision-maker, they were not as important as the medical staff. These perceptions are supported by empirical ethnographic research that has shown distinctive participation patterns in care planning and decision making: doctors talk and other professionals are expected to listen.[20]

For allied health professionals, attending IBRs experienced as doubling up on processes already in place. They likened the journey board and case conferences to IBRs, and therefore IBRs to be an inefficient use of time. As many allied health professionals cover up to half, or even all, the hospital on a given day, attending IBRs is logistically challenging. A negative relationship between efficiency and clinical structures that do not support IBRs can be drawn. Additionally, the physical hospital context is a barrier to efficiency in IBRs for allied health professionals. By way of contrast, the co-location of teams undertaking IBRs is one of the features of higher functioning teams.[4,18]

Our study builds upon that conducted by Gonzalo, Kuperman, Lehman and Haidet[3] who explored perceptions of IBRs among medical officers and nurses working in internal medicine. The inclusion of allied health clinicians in our study offers a broader clinical perspective on

rounding processes and addresses a limitation of the Gonzalo study. Clinicians in our study said interdisciplinary communication and cohesive teamwork were benefits of IBRs. This supports findings from Gonzalo, Kuperman, Lehman and Haidet[3] when medical officers and nurses ranked interprofessional communication and collaboration as the highest benefits of IBRs. While IBRs have been identified as providing educational opportunities,[2] no respondents in our study indicated this as either a benefit or a challenge. This was in contrast to the study undertaken by Gonzalo, Kuperman, Lehman and Haidet[3] who found respondents ranked education during IBRs as a positive function. IBRs are an opportunity to provide patient centerd care and our findings reflect the desire of health professionals to deliver care within this model. Despite the perceived barriers, the findings suggest clinicians recognise there are greater benefits to IBRs and have a willingness to participate.

This study provided unexpected insights into care coordination. The foundation for successful IBRs requires effective teamwork. Understanding a team's perspectives on barriers enables them to be addressed and facilitate more effective team functioning. Exploring commonalities and differences in perceptions leads to asking if clinicians experience cohesive teamwork or is this an aspirational goal? All health professionals expressed a desire to work as an interdisciplinary team, yet disparate perceptions of team collaboration challenged this. Medical officers were wanting interdisciplinary input while some nurses and allied health professionals were cautious at how this may be received.

Nursing and allied health clinicians described benefits and challenges from two perspectives. They started by responding from the perspective of working with patients as individual clinicians, to working with patients as a team. Medical officers responded less from an individual perspective and more from being part of an interdisciplinary team.

A high functioning teamwork culture can help interdisciplinary teams deliver safer care.[22] The differences in the interdisicpinary team's perceptions of IBRs provides a direction to further investigate: what does teamwork mean to different health professionals and disciplines? A literature scan revealed a gap in exploring the processes and experiences of new clinical team members joining IBRs. This leads to asking how these clinicians, and ones in a consultative role, are introduced to IBR processes and expectations. There is opportunity to further explore how clinicians who are increasingly becoming members of clinical teams, such psychologists and podiatrists, integrate into established rounding processes and practices.

Conclusion

Collaboration and care coordination will remain a challenge due to the unpredictable nature of the ward environment and processes of the healthcare system. How organizations support healthcare teams to manage these challenges will contribute to clinicians planning for these situations. The introduction of IBRs, or any rounding process, needs to be well planned and structured. This will facilitate incorporation of rounds into routine patient care. As patient acuity increases, and lengths of stay decrease, improved effectiveness and efficiency of interdisciplinary collaboration, communication and care planning becomes bedrock to high quality care.

Acknowledgements

Not applicable

Disclosure

Nil conflict of interest identified

References

1. Nedfors K, Borg C, Fagerstro C. Communication with physicians in hospital rounds: An interview with nurses. *Nord J Nurs Res.* 2015;36(3):122-127. doi:10.1177/0107408315606633
2. Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *Int J Health Care Qual Assur* 2016;29(4):364-379. doi:doi:10.1108/IJHCQA-04-2015-0053
3. Gonzalo JD, Kuperman E, Lehman E, Haidet P. Bedside interprofessional rounds: Perceptions of benefits and barriers by internal medicine nursing staff, attending physicians, and housestaff physicians. *J Hosp Med.* 2014;9(10):646-651. doi:10.1002/jhm.2245
4. Bhamidipati VS, Elliott DJ, Justice EM, Belleh E, Sonnad SS, Robinson EJ. Structure and outcomes of interdisciplinary rounds in hospitalized medicine patients: A systematic review and suggested taxonomy. *J Hosp Med.* 2016;11(7):513-523. doi:10.1002/jhm.2575
5. Körner M. Interprofessional teamwork in medical rehabilitation: A comparison of multidisciplinary and interdisciplinary team approach. *Clin Rehabil.* 2010;24(8):745-755. doi:10.1177/0269215510367538
6. Najafi N, Monash B, Mourad M, et al. Improving attending rounds: Qualitative reflections from multidisciplinary providers. *Hosp Pract.* 2015;43(3):186-190. doi:10.1080/21548331.2015.1043181
7. Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *J Eval Clin Pract.* 2019;0(0).
8. Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare. *Postgrad Med J.* 2014;90(1061):149-154. doi:10.1136/postgradmedj-2012-131168
9. O'Leary KJ, Killarney A, Hansen LO, et al. Effect of patient-centred bedside rounds on hospitalised patients' decision control, activation and satisfaction with care. *BMJ Qual Saf.* 2016;25(12):921-928. doi:10.1136/bmjqs-2015-004561
10. Ward SA, Workman B. Multidisciplinary teamwork. In: Caplan G, ed. *Geriatric medicine an introduction.* Melbourne: IP Communications, Pty. Ltd.,; 2014:30-46.
11. Liberati EG, Gorli M, Scaratti G. Invisible walls within multidisciplinary teams: Disciplinary boundaries and their effects on integrated care. *Soc Sci Med.* 2016;150:31-39. doi:10.1016/j.socscimed.2015.12.002
12. Enslev Jensen B, Found PA, Williams SJ, Walley P. Improving the efficiency and effectiveness of ward rounds. *IJQSS.* 2016;8(3):279-297. doi:doi:10.1108/IJQSS-05-2016-0039
13. Stein J, Payne C, Methvin A, et al. Reorganizing a hospital ward as an accountable care unit. *J Hosp Med.* 2015;10(1):36-40. doi:10.1002/jhm.2284
14. Bazeley P. *Qualitative data analysis practical strategies.* London: Sage; 2013.
15. Schwandt TA, Lincoln YS, Guba EG. Judging interpretations: But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Dir Eval.* 2007;2007(114):11-25.
16. Clark KW, Moller S, O'Brien L. Electronic patient journey boards a vital piece of the puzzle in patient flow. *Aust Health Rev.* 2014;38(3):259-264. doi:http://dx.doi.org/10.1071/AH13192

17. Clay-Williams R, Plumb J, Luscombe GM, et al. Improving teamwork and patient outcomes with daily structured interdisciplinary bedside rounds: A multimethod evaluation. *J Hosp Med.* 2018;13(5):311-317. doi:10.12788/jhm.2850
18. O'Leary KJ, Johnson JK, Auerbach AD. Do interdisciplinary rounds improve patient outcomes? Only if they improve teamwork. *J Hosp Med.* 2016;11(7):524-525. doi:10.1002/jhm.2587
19. Merchant NB, Federman DG. Bedside rounds valued but not preferred: Perceptions of internal medicine residents and attending physicians in a diverse academic training program. *South Med J.* 2017;110(8):531-537. doi:10.14423/SMJ.0000000000000689
20. Nugus P, Greenfield D, Travaglia J, Westbrook J, Braithwaite J. How and where clinicians exercise power: Interprofessional relations in health care. *Soc Sci Med.* 2010;71(5):898-909. doi:https://doi.org/10.1016/j.socscimed.2010.05.029
21. Bate P. Changing the culture of a hospital: From hierarchy to networked community. *Public Adm.* 2000;78(3):485. doi:10.1111/1467-9299.00215
22. Körner M, Bütof S, Müller C, Zimmermann L, Becker S, Bengel J. Interprofessional teamwork and team interventions in chronic care: A systematic review. *J Interprof Care.* 2016;30(1):15-28. doi:10.3109/13561820.2015.1051616

Chapter 6: Patient experiences of ward rounds

Overview of Chapter 6

Chapter 5: *Interdisciplinary Bedside Rounds* investigated the benefits and challenges of interdisciplinary bedside rounds from the clinician perspective.

This chapter contains the original work:

Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019; Volume 13:1415-1429. doi:10.2147/ppa.s211073.

The publication can be found at:

https://www.dovepress.com/patients-health-professionals-and-the-health-system-influencers-on-pat-peer-reviewed-fulltext-article-PPA

Chapter 6: *Patient Experience* presents a study investigating the relationship between the patient experience of ward rounds including collaboration with the healthcare team. Some patients were unable to describe the purpose of a ward round despite having been involved in the process. Three main influencers on the patient experience of rounds were found to be: the patient's own self; the health system; and medical officers.

Please note:

Initially the thesis took a system-wide approach to investigating ward rounds to gain a global perspective. However, as the thesis developed the findings of the combined studies revealed that *health services*, as opposed to the health system, aligned with local services and were more influential on clinicians' and patients' ward round participation.

Table 6A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional and speciality perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient experiences of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

The next chapter, Chapter 7: *Discussion,* presents the relationship between the findings in Chapters 2 to 6.

Patient Preference and Adherence

Dovepress
open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Patients, health professionals, and the health system: influencers on patients' participation in ward rounds

This article was published in the following Dove Press journal:
Patient Preference and Adherence

Victoria Walton[1]
Anne Hogden[1]
Janet C Long[2]
Julie K Johnson[3]
David Greenfield[1]

[1]Tasmanian School of Business and Economics, Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia; [2]Faculty of Medicine and Health Sciences, Australian Institute of Health Innovation, Macquarie University, Sydney, Australia; [3]Department of Surgery, Center for Healthcare Studies, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA

Background: The ward round is an opportunity to plan and deliver patient-centered care. Benefits include an effective and safer clinician-patient relationship, patient empowerment, reduced anxiety and increased trust in the health care system. Factors contributing to patient involvement in ward rounds is shaped by their preferences, ability, and opportunity.

Aim: To investigate ward rounds and the patient experience with them, the relationship between the patient and clinicians, and how rounds facilitate collaboration between them.

Patients and methods: A multimethod study was conducted in a single Australian facility in acute medicine and rehabilitation specialties. An observational study of ward rounds in each setting was conducted with 14 patients, aged between 55 and 89 years followed by semi-structured interviews conducted with the patients observed. Descriptive and thematic analysis was undertaken.

Results: One third of participants had not heard of the term ward round or could describe their purpose. Three main influencers on the patient experience of rounds were: self; the health system; and medical officers. No meaningful difference was found between patients in acute medicine and rehabilitation although all wanted to receive information from the senior medical officers. Patients more familiar with the health system were more active participants and took greater responsibility for their involvement in rounds and described higher satisfaction.

Conclusion: There is a level of acceptance within the health system that patients understand what a ward round is. However, their role on the round is complex and this may only be developed through experiencing them. High system users teach themselves to navigate rounding processes to ensure their needs are met. To ensure equity in participation patients should be educated on ward rounds, what to expect and how to they can participate.

Keywords: ward rounds, patient participation, interview, education

Introduction

The inpatient ward round is a primary activity for clinicians and patients to assess, interact and negotiate care treatment and goals.[1] When doing so, the ward round has also been a traditional means to educate medical officers.[2] The ward round is an opportunity to plan for and deliver patient- centered care, through working collaboratively to review and implement care plans.[3] Benefits include an effective and safer clinician-patient relationship, patient empowerment, reduced anxiety and increased trust in the health care system.[2,4] Factors contributing to patient involvement in ward rounds is shaped by their preferences, capacity, and opportunity.[1]

Correspondence: Victoria Walton
Australian Institute of Health Service Management, University of Tasmania, Locked Bag 5052, Alexandria, NSW 2015, Sydney, Australia
Tel +61 24 0841 7814
Email victoria.walton@utas.edu.au

Studies have shown that patients desire participation; however issues of health literacy, belief in the medical hierarchy and a submissive patient role were factors contributing to patients not actively participating.[5,6] In some cases younger patients may participate, but no relationship between age, or gender, and participation has been established.[7] Illness severity can also affect a patient's capacity and desire to take part in decision making during rounds.[7] The inclusion of patients can depend on the type of rounding process being undertaken and whether the patient may, or may not, be nominated as a participant.[2] The location[8] and timing[1] of the round were also found to be external influences affecting patient participation.

Communication was more likely to be longer, interactive and patient-centered in a single room opposed to a more traditional four-bedded hospital room.[1,8] Participation can be enhanced by clinicians asking patients direct questions and using language free of medical terminology.[1,7]

Moreover, patients have been contributing self-reflections about the challenges of ward rounds. Sweet and Wilson[6] provide reflections from patients over many decades. They reported the experience of being treated impersonally, as a disease rather than a person, and a feeling of exclusion from relevant conversations concerning them.[6] If patient-centered care is to be effectively realized, improvement in clinician-patient collaboration and decision making in ward rounds, leading to a positive patient experience, must be achieved. For patients to take part in a ward round, both patients and clinicians must understand their own and each other's roles, and the relationship between the two.

Aim

This study examined ward rounds in four wards of a metropolitan hospital, focusing on the patient experience and how they facilitated collaboration with health professionals. We asked three questions: first, what is the patient experience of the ward; second, what is the relationship between the health care team and patient during the ward rounds; and third, how do ward rounds facilitate collaboration between patients and health professionals?

Methods

Setting

The study was carried out in a 165-bed teaching hospital in metropolitan Sydney, Australia. The hospital provided adult medical, critical care, surgical and rehabilitation specialties. The specialties chosen for the study setting were acute medicine and rehabilitation. Acute medicine included patients from two wards. The first specialized in cardiology and general medicine, while the second was a short stay medical assessment unit. Two rehabilitation wards were included. The first specialized in aged care assessment and rehabilitation, and the second specialized in orthopedics, mobility, stroke, and needs assessment. These specialties were chosen as they provided contrasting care provisions: patients from acute medicine had higher acuity needs but shorter lengths of stay; while patients in rehabilitation had lower acuity, but longer lengths of stay.

Study design, study tools and data collection, participants and data analysis

Study design

We conducted a multi-methods study over a five-month period from March to August 2017 to include observations and semi-structured interviews in each setting.[10] Ward round observations were used to facilitate patient interviews and provide context for their analysis.

Study tools and data collection

A paper-based ward round observation tool (Table S1) and semi-structured interview guide (Table S2) were designed specifically for the study. They were simultaneously developed based on the literature[2] and the research team's industry experience. In this study 'participants' refers to the patients interviewed and not the clinicians observed during the ward rounds. All observations and interviews were conducted by VW (PhD candidate). Interview times ranged between 7 and 23 mins. This did not include the time spent explaining the study or confirming consent documentation.

The observation tool included three categories. The first category observed the health professionals who attended, and if they introduced themselves and their role to the patient. Additionally, specific tasks that each health professional carried out during the round were noted. The second category observed the topics discussed during the round. The health professionals who took part in the conversation were noted, if they involved the patient, and how this occurred. The tool allowed for multiple topic discussions to be observed. The third category was specifically aimed at how the patient participated in the round. This allowed for a summary of what the patient asked during the round and the discussion topics they initiated.

The interview guide included six question topics: participant demographic characteristics; description of a ward round and its purpose; identification of attendees and roles; advantages and disadvantages of the ward round process; health professional and patient collaboration; and additional comments including how the process could be improved. Interviews were digitally audio-recorded, and written notes were taken during the interview to note participants' non-verbal responses. When asked about specific roles such as allied health professionals, the examples of physiotherapist, occupational therapist, social worker were provided as they are the more common allied health professionals in the study setting.

During the observation, the researcher stayed inside the room if a single bedroom, or if it was a multibed room, inside the curtains that were pulled around the bed space. Patients were interviewed following their individual ward round review. This ensured their immediate perceptions were captured, and that patient follow-up was not lost if they were subsequently transferred off the ward for investigations. If the patient was in a multibed room with other patients being reviewed by the same care team, the researcher waited until the team had left the room to conduct the interview. Patients were offered the opportunity to be interviewed at their bedside or in a private area. When a participant required prompting to elicit more information, the researcher used round observations and previous responses to questions to encourage further explanation.

Participants

Convenience sampling was used to invite patients in medical and rehabilitation wards.[11] Participation was voluntary. Nursing Unit Managers (NUMs) and medical officers identified patients that were suitable to participate based on the inclusion and exclusion criteria. Ward patients were eligible if they: had no identified cognitive impairment; were English-speaking; and had a medically stable health status. Surgical or post-operative patients, except those receiving rehabilitation on the rehabilitation wards, were excluded. A member of the research team (VW) approached the patients prior to the ward round, explained the study, and obtained written consent to both observe their ward round with their care team and be interviewed afterwards. Patients were assured anonymity and that responses would remain confidential. The relevant Head of Department gave approval to conduct the research, and verbal consent was obtained from clinicians involved in each round before proceeding.

Recruitment ceased after 14 interviews as data saturation was reached,[12] with participants reporting similar responses from that point. Interestingly, this number is similar to the patient sample reported by Swenne and Skytt (2014) in their study on this topic.[1]

Data analysis

Multi-method analysis[9] was undertaken to integrate and understand the observational and interview data collected during ward round observations and interviews. We used descriptive analysis from the ward round observations to support interview analysis. These included counting the number of times different interactions and events occurred, as well as participant demographics. Thematic analysis of the transcripts identified patterns and developed relationships to help understand issues and topics spoken about by participants.[13,14] The Schwandt, Lincoln and Guba[15] framework for analysis was used as a guide.

Interviews were listened to in their entirety, and observational notes reviewed prior to transcription.[14] Patient interviews were transcribed verbatim and annotated with the interviewer's notes including observational data collected during the round (VW). This allowed for richer understanding and interpretation of the interviews, as emphasis and non-verbal communication were witnessed.[16] Following transcription, the interview was listened to again to ensure accuracy. Manual coding was used as it allowed a parallel process of conceptualizing while developing themes within the data.[14] Interview questions were used to provide structure to the coding.[13] Common words and phrases were first identified by the researcher who conducted the analysis (VW). The concepts were reviewed within the research team to ensure there was a common understanding of the theme. A second member of the research team analyzed and crossed checked a quarter of the material for consistency and reliability (JL) (Figure 1). A third member (AH) moderated any disagreement between coding. Interpretation and implications of themes were discussed by the research team.

Ethics

Ethics approval for the study was granted by a local health district research ethics committee (approval: LNR/13/HAWKE/365) and Macquarie University (5201600910).

Results

A total of 24 patients were invited to participate. Of these, 14 consented to take part in the study. Reasons participants

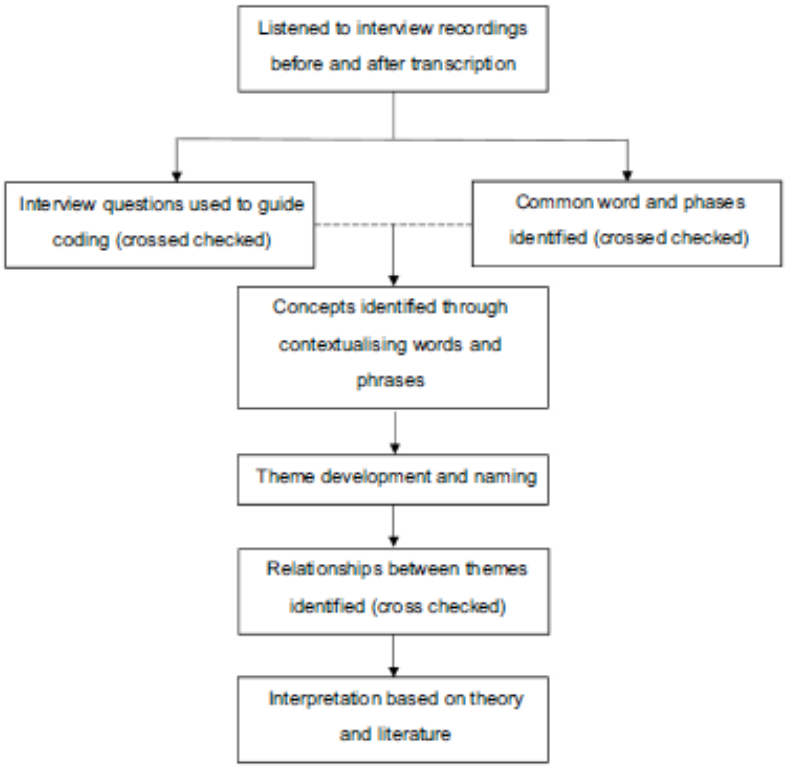


Figure 1 Data analysis process for patient interviews.

declined included: being worried their doctors would find out what they had said; the length of the patient consent form; interview fatigue; and concern at being digitally recorded. All participating patients consented to interviews being conducted at their bedside.

The findings are presented in three parts. First, a summation of ward round observations is provided to give situational context. Demographic data of health professionals who attended rounds, including how they introduced themselves, follows. Finally, the findings from patient interviews are given.

Ward round observations

Of the 14 ward rounds observed, all were conducted in the morning, and apart from one, were the first ward round interaction of the day for the patient.

Attendees

Each round varied in who attended from the clinical team. There were seven participants from acute medical - four from medical ward A and three from medical ward B. There were seven participants from rehabilitation – four from rehabilitation A and three from rehabilitation B. There were eight combinations of health care professionals in attendance (Table 1). The most common attendee was the registrar, who was present at all 14 rounds, followed by the consultant (6 rounds), intern (4 rounds), NUM (3 rounds), and each at one round the bedside nurse and medical student.

Introductions

Health professionals were introduced to patients by name just over half of the time (59%). The most senior medical officer was introduced first (Table 2). The NUM, if present, was the final person introduced. The bedside nurse was not introduced. The consultant always made the introductions when present. Registrars took over this role if they were the most senior medical officer. During one round, the consultant introduced herself and only introduced the other attendees by saying "you know the medical team" (P13).

Roles and responsibilities

Roles and responsibilities were defined by health professional (Table 3). The leader of the round was identified as the individual who made the initial contact with the

Table 1 Health professional attendee combinations on the 14 observed ward rounds

Professionals in attendance	Consultant Registrar Intern	Consultant Registrar Intern NUM*	Consultant Registrar Student doctor	Consultant Registrar Intern NUM Nurse	Consultant Registrar	Consultant Registrar NUM	Registrar Intern	Registrar
Number of rounds	3	2	1	1	1	1	4	1

Note: *NUM is the Nursing Unit Manager.

Table 2 Health professional introductions at ward rounds: frequency and by whom

Health professional	Introductions % (#)	Introduced by
Consultant	78 (7/9)	Themselves
Registrar	57 (8/14)	Consultant; themselves if most senior attendee
Intern	50 (5/10)	Consultant; registrar
NUM	50 (2/4)	Consultant; registrar
Medical student	100 (1/1)	Consultant; registrar
Nurse	0 (0/1)	Not introduced

Abbreviation: NUM, Nursing Unit Manager.

Table 3 Health professionals' roles and responsibilities during the ward round

Health professional	Tasks
Consultant/staff specialist	Lead round discussion Made final decisions
Registrar	Listened to conversation Confirmed details for consultant Scribed Charted medications
Intern/resident	Scribed into computer on wheels Listened and observed
NUM	Listened and observed Took own separate notes
Student doctor	Listened and observed Practiced physical examination
Nurse	Answered medical officer's questions

Abbreviation: NUM, Nursing Unit Manager.

patient, directed the discussion, and made treatment decisions. When the consultant was present, they assumed this role. When the registrar was the most senior attendee, they assumed the role. During all rounds, the leader revisited the patient's medical history, the level of detail depended on how long the patient had been in hospital. All patients were included in the conversation and invited to ask questions. During the round, registrars acted as the conduit between the consultant and intern. They listened and confirmed information for the consultant then either relayed the information to or observed what the intern documented. In some cases, the consultant conferred with the registrar about patient details rather than asking the patient directly, however this varied from patient to patient as opposed to consultant. If the consultant or intern had to leave the room the registrar stepped into their role. All medical officers took active roles in the ward round. The NUM was a passive attendee who took separate notes to those documented in the electronic medical record.

Patient demographic characteristics

Of the 14 patients participating, the age range was 55–89 years with a median age of 73 years (Table 4). People over the age of 50 years residing in the local area represent 43.4% of the population.[17] All patients were in, or had been, in paid employment, with five in health-related occupations and three now retired. All but one patient had been in hospital before. Patients in rehabilitation ward A and B had a longer length of stay. Of the seven patients, five had been ward more than three days. All both acute medical patients had been in between 0 and 3 days. The gender of participants was provided by the NUM or medical officers at the time they identified possible participants. Patient demographics are summarized in Table 4.

Table 4 Patient participant demographics

Patient age (years)	Gender	Occupation	Specialty	Length of stay (days)
79	F	Retired	Rehabilitation	0–3
66	M	Carpenter (retired)	Rehabilitation	>7
87	F	Retired	Rehabilitation	4–7
69	F	Manager for disabled youth (retired)	Rehabilitation	>7
56	M	Chef	Rehabilitation	>14
67	F	Secretary (retired)	Rehabilitation	0–3
63	F	Radiology report transcriber (retired)	Rehabilitation	>14
83	M	Geologist (retired)	Medical	0–3
89	F	Accountant (retired)	Medical	0–3
78	F	Tour guide (retired)	Medical	0–3
86	F	Welfare worker (retired)	Medical	0–3
77	F	Physiotherapist (retired)	Medical	0–3
55	F	Carer	Medical	0–3
63	M	Tradesman	Medical	0–3

Interviews

Responses from the interview data were analyzed by key themes. Findings are presented by question topics and the key themes in each topic identified and presented.

Definition and purpose of ward rounds

Of the 14 patients, 64% (n=9) had heard of the term 'ward round' and were able to provide a description of a round. Most participants described a round as a passive process to meet the needs of the health care team: "it is a combination of the team (doctors and maybe a nurse) walking around and discussing" (P13), or "it is there to meet the needs of the doctor" (P2). Participants did describe a more active process involving patients: "doctors and patients interacting" (P4).

When explaining the purpose of a round, participants highlighted it was based upon the nature of the relationship between the patient and health care professionals and, principally, it being directed by medical officers. There were three key concepts that determine the purpose, which involved the exchange of information: medical officers telling patients of the care plan; patients receiving information; and extra activities, which included providing education for students and ensuring written documentation accurately reflected the clinical context. One patient stated the purpose and process of a round was to "update the patient first and the patient tells them how they feel, and a plan is decided on" (P10). Patients reflected this view, simply describing the round as an opportunity "to keep patients informed" (P13).

Health care team and patient relationship during ward rounds

Attendees and roles

Participants identified health professionals attending the round and their perceived roles. The two key concepts emerging from participant responses were: the presence of senior medical officers providing reassurance and knowledge; and knowing the health professionals' discipline was more valued than their names.

The most frequently identified clinicians attending a round were medical officers, followed by nursing staff. Even when the observed round did not include nurses, participants still included them in the description of a round. No allied health professionals attended the rounds and participants did not include them in the description of attendees.

Most participants (76%) reported clinicians either introducing themselves at the start of a ward round or already knowing them by name from previous introductions. The consultant was the medical officer most likely to be remembered by name and position. It was observed that when the consultant was present, and leading the discussion, participants were less likely to be informed of the rest of the rounding team or be able to recall who the rest of the team were. This view is represented by: "she said 'they're my helpers' but didn't mention their names, there was no need to" (P3). Recognizing clinicians' discipline seemed more relevant to participants than their name. This was illustrated during one interview when a medical officer came into the room to chart medications and the participant said: "well she's a doctor but I still won't ask her her name" (P4).

When asked about the different role's health professionals played during the round, all participants replied they were either senior or junior, or a nurse. Medical officers were identified as either "senior" or "junior". Participants determined senior medical officers lead the conversation and carried out physical examinations. The importance of the senior medical officer present was a consistent theme throughout interviews and is summarized by one participant: "it actually feels nice to have a senior person to come around and not just the junior doctors" (14). Medical officers were again emphasized as the health professionals' participants wanted to see:

> "I do feel reassured when they come rather than just seeing the nurses who when they come, I don't think they'd have the right answers for me, so the doctor is the one who would have the right answers for me". (P7)

This importance of medical officers was reinforced by participants. This was illustrated by one who said: "if Dr X were here, she'd be the one in charge, so she is the one I direct my questions to" (P7). Junior medical officers were assumed to be junior as they documented the conversation on the computer. When a nurse was present their role was passive participation and described as "there to listen." Participants who had previously worked in a health-related field or were chronic care patients were able to articulate the roles in more detail. They described a more comprehensive understanding of the health care team: "his job [junior] is to be familiar with records, to point out to his senior and the nurse what are the important aspects of recent history" (P8). While some participants were able to identify the different roles of the health care team there were also some who either thought they all carried out similar tasks or did not take any notice.

The greatest variety of responses was seen when participants were asked to describe their own role in ward rounds. The key concepts were: taking personal responsibility for understanding the health care system; passive involvement in rounds through listening and "just being"; and active involvement through asking questions and providing information.

Personal responsibility was described as learning how the health care system works. This was reported by people more familiar with the health system ("high users") of the system, such as participants with chronic care disease as well those who worked in the system. These participants displayed an acceptance that the timing of rounds can be unpredictable. As a result, they described being prepared for rounds. This meant being able to respond to questions from the medical team succinctly by considering information that may be required and preparing for questions that may be asked. One participant encompassed a number of different responses in one explanation: "I think it is very important to write down clearly what you want to say. You've got a limited period. If you've got things to say and if it's written down, then it is clear for everybody then" (P8). High users also demonstrated a higher level of confidence in their role particularly around talking to medical officers: Having accurate information was also recognized as important by high users: "Well what I try to do is be as clear as possible. I just think it is so important to the information but I'm not sure I always do" (P12).

Passive involvement in rounds was reported by participants. This was illustrated in two ways. First, when listening to medical officers and waiting for questions to be asked, or when hearing the treatment plan. This behavior was then intertwined or followed by active participation by responding to questions and commenting on the treatment plan.

All but three patients described equal passive and active participation. The three participants, each low users of the health service, stated their role mainly as passive: "to be a guinea pig, to be a patient, to be assessed" (P5), "just a patient" (P14), or "I was just there" (P13).

Patient experience of ward rounds

Participants reported ward rounds both positive and challenging. When describing the overall experience of a ward round three key concepts emerged: the impact of the person's physical and mental wellbeing; interactions with clinicians; and personal responsibility.

The impact of a person's physical and mental health made communicating with medical officers challenging. Participants who reported this issue, overall made more negative comments about rounds. It was felt the medical team did not take their physical health into consideration; this was recollected by one participant unable to turn her neck one way due to a physical condition. However, the medical officers stood on the opposite side to the way the participant could turn: "It's hard when someone is asking you questions, and you can't be looking there" (P7).

Participants also explained they were in hospital because they were sick and not able to comprehend information as well as they would normally. Hence, interactions

with clinicians during rounds revealed the vulnerability some patients felt. Two participants reported feelings of being overwhelmed, in the context of having multiple clinicians present while needing to discuss their medical condition with privacy.

Medical officers being interrupted during rounds influenced how patients communicated with them. Nevertheless, there was a level of acceptance this was part of the hospital environment. Patients with high use of the hospital system identified a greater understanding and acceptance and reported taking personal responsibility. One participant recognized she was the "the one with all the information" (P7) for the medical officers, while another explained that patients "need to assist the system" and be prepared with information. He noted he had learnt over time to "think ahead" (P8). The participant did this by writing down his symptoms, how long he had had them. As a person with a chronic disease he maintained a record of his blood pressure and provided the record to his medical officers in hospital. This assisted him when medical officers asked about his symptoms and meant he did not rely on memory alone.

Participants held a common view of what made them feel valued during a round. The two key interrelated concepts were: communication and time. When positively experienced, participants stated feeling respected and cared for by the health care team. Communication encompassed verbal and non-verbal which included the body language and location of the medical officers.

Participants explained that being listened to by medical officers included in the conversation and subsequently part of the round. This was illustrated by one patient who demonstrated confidence in how the medical officer communicated with her: "I know the doctor will listen to what I have to say" (P7). Another patient took this one step further and felt valued when the medical officer: "repeated to me what I said last night" (P10). Other non-verbal communication included the body language and physical location of the medical officer leading the conversation. As one patient explained: when a medical officer sits on the bed "you sort of feel more relaxed if they sort of relax with you" (P1). The participant who did not feel valued reported "not many doctors" (P2) listen to him or consider his feelings. He explained this from the perspective of past interactions with medical officers.

Two participants who were high users of the health system compared ward rounds previously to now. Both described a shift in collaborating with medical officers: "You know I never thought being a patient has rights, but I do you know, in the past they took away my right." (P6). This participant also said she had become more confident and this had influenced the way she spoke with medical officers. Another participant also reflected on the change: "It has changed from earlier years. You do not need to be in awe of doctors" (P8).

Participating in the round was viewed as a quarantined time with medical officers. Participants valued medical officers taking time to meet with them, especially if the consultant was present. When this occurred, verbal communication was of increasing importance, where medical officers spoke and explained the plan of care. Roles were reversed, and patients listened while medical officers spoke.

Ward round influences between health care professionals and patients

Advantages of ward rounds

Participants were asked what aspects of ward rounds they did and did not like. Participants initially responded that they felt "reassured" and "cared for". The key concepts behind these descriptions were: increased confidence in the treatment plan when health professionals are seen working together; and having an opportunity to see and talk with medical officers. These are detailed in the following paragraphs.

When describing the value of having the health care team visiting together, all but one participant referred to the team as medical officers only. Nurses were acknowledged; however, it was seeing senior and junior medical officers working together that patients reflected on. Seeing multiple health professionals discuss a treatment plan in front of them, and with them, provided participants with confidence. One participant explained she felt she was taken seriously: "My condition is being taken so seriously and that everyone is putting their heads together to come up with the best possible remedy" (P12). Another participant described having confidence that having the team together facilitated discussion and provided an opportunity for clarifying information beyond the immediate round interactions: "Well they then go back and discuss what you said, and they could pick up on something they have missed previously" (P9).

The most commonly reported advantage to ward rounds was having the opportunity to see and talk to medical officers, particularly senior doctors. One participant embodied many of the participants' sentiments:

> "Well I like the opportunity to speak to the doctors because you are seeing the nurses you're seeing other people like social workers and occupational therapists and so forth and you know the rehab people but umm the doctors are sort of the one that ahhhh sort of bringing it all together and making sure that what's happening in your area is correct". (P4)

While medical officers were described as providing information, it was equally important to have them visit so participants could inform them: "it lets me voice my opinion" (P6).

Disadvantages of ward rounds

The aspects of ward rounds participants found challenging were linked to how ward rounds could be improved. Key concepts relating to the challenges of rounds are: uncertainty about when the round will take place; confidence to be an active participant; and communication.

Just over half (57%) of participants said not knowing when the round would occur was challenging and something that could be improved. Difficulties in not knowing the time made one participant anxious he was going to miss out on physical therapy. This had been identified as an important part of his treatment plan during the round: "Yeah well I don't know what is happening. I didn't know they were coming today. I've got occupational therapy from 10 am. Now I don't know when they're coming either" (P5). Other participants did not know a specific time but explained they could be "sometime" in the morning. Despite timing being one of the main challenges, high service users were more likely to explain a level of acceptance of this such as: "I know they have to put all the tests together, so you know" (P13), and "time, they probably don't know themselves, they have to be flexible" (P8).

The second and third key concepts were interrelated. Most participant's responses illustrated a level of confidence when interacting with health professionals during the round. However, there were different aspects that made interacting challenging. These varied between participants feeling overwhelmed by the number of health professionals present during the round was commented on by two participants and described by one as:

> "I'm shy so I don't like so many people looking at you. You're not in the best condition you know, no bra on (laughs) they're resting on my stomach (laughs). Anyway, if you're really shy it could be anxious and it is intimidating because you have all these people looking at you and you don't know what is going through their mind" (P13).

This then manifested into not asking questions. As explained by a participant, who described similar feelings multiple times during the interview:

> "I think they could have made a comment like "have you got any questions? You don't really get any opportunities to say any questions but because I knew them [the doctors] I probably should have just asked them, but it would have been nice if someone asked if I had any questions" (P13).

Just under half (43%) of participants mentioned being unable to understand part of the conversations with medical officers, or not knowing what medical officers were talking about between themselves during the round. Of these participants, two said they ask the medical officer to clarify what they meant. Another two participants said it was difficult but not always necessary to know what it means. While for others it led to feeling excluded from conversations. One participant explained:

> "It's when they start using medical terms that you're not familiar with, I just lose them. You've got no idea what they're talking about and yeah, yeah, so that sort of leaves you feeling left out and not sure what is happening" (P5).

What could be done to improve ward rounds?

Participants were asked based on their experience what could be done to improve the ward round process. Initially most participants responded the rounding process was satisfactory, however two key concepts centering around providing patients with information emerged: having a specified time for the round; and being informed in advance of what will be discussed in a round. Three individual suggestions were also made: having a nurse present; humor; and the patient being prepared.

Participants suggested being told when the ward round was to occur would be helpful, illustrated simply by one participant suggestion of "give us a time" (P5). Holding the round in the afternoon was suggested by one participant because the afternoons were not as busy as morning.

Similar to knowing when rounds were to occur, participants suggested being informed ahead of time of discussion topics would allow them to be prepared: "being forewarned about the questions, because it is "difficult to think ahead" (P11). This was echoed by another participant who said, "you could have time to think" (P9). This enabled participants to prepare their own questions during the round.

Other suggestions made by single participants included having a nurse present to improve communication between medical officers and nurses. It was explained that currently the nurse "is kept in the dark" (P10). Another participant suggested that at times "a bit of humor wouldn't hurt" (P11); health professionals could be very serious and less intensity at times would be an improvement.

Participants also described elements that patients could do to improve rounds. These included being aware of your own medical history to "to assist the medical people to make sure the facts are right" (P8). Another participant suggested sitting up allowed for improved communication with health professionals during the round.

Discussion

This study investigated the patient experience of participating in a ward round, the relationship between patients and clinicians, and whether rounds facilitate a collaborative partnership. We summarize the findings as follows: patients value ward rounds as an opportunity to speak with the senior medical officers, however patients with more experience as system users have more engagement with the process. This concise and precise result empirically confirms anecdotal evidence from clinical practice. Our findings support and build upon earlier studies conducted internationally. This suggests commonalities between ward rounds and patient participation amongst different health systems.

Most commonly, observational studies of ward rounds and patient focus groups, surveys and interviews have been undertaken independently of each other.[1,18] From the literature, we identified one study undertaken on an acute medicine ward that both observed ward rounds and interviewed patients about their involvement.[7] Another study conducted in an emergency room observed rounds and conducted patient satisfaction surveys following the round.[19] This study builds on this work by exploring ward rounds from the patient perspective, across both acute medicine and rehabilitation specialties, using both observation and interviews.

The age of study participants demographics is representative of the population. They also represent a health system facing an increasing aging population. Over the years, the culture of patient and medical officer relationships has changed to more collaborative[20] however patients from different generations will naturally interact differently to health professionals. Health professionals cannot take a "one size fits all" approach to patient interactions. Although each patient is an individual with their own experiences, historical patient-health professional relationships can be seen in population groups.[21]

While our study found no meaningful difference between acute medicine and rehabilitation participants, it did reveal a difference between high system users compared with those who are infrequently admitted to hospital. High users described more self-directed engagement with medical officers when participating in treatment planning and asking questions. They spoke with more confidence about their role in the ward round. They also showed a level of acceptance that some challenges of ward rounds relate to the health care system. Participants described experiences and collaborative partnerships as ebbs and flows during the duration of the round. Our findings demonstrate the contrast between what patients perceive and the actual process of a ward round. Nearly all participants described a ward round involving medial officers and nurses. This was despite most of the rounds observed including only medical officers. The perception of what a ward round is may be an ingrained concept from traditional rounds when nurses accompanied medical officers. All but one patient considered that nurses were not necessary on the round. This differed from an earlier study undertaken in Sweden where patients identified it was easier to engage with nurses during the ward round, but nurses and medical officer complimented each other.[1] The opinion that nurses were not required on the round may reflect that participants were generally satisfied with their experience of rounds that only involved only medical officers. Coupled with this was the desire to receive information from medical officers. This finding illustrates

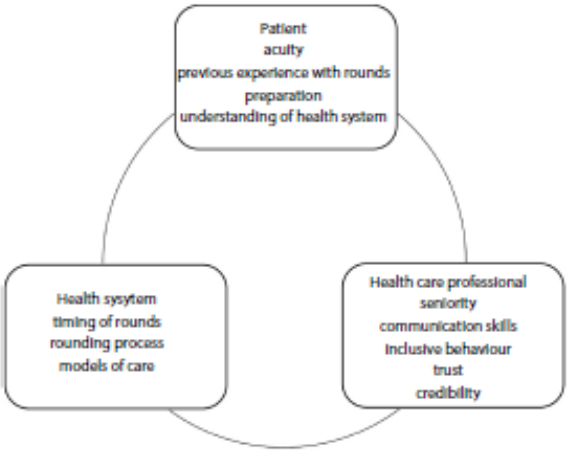


Figure 2 Influences on the patient experience of ward rounds.

three key contributing factors to the patient experience on ward rounds are: medical officers; health system; and the patient's previous experiences of ward rounds (Figure 2). This builds upon Swenne and Skytt[1] study which found time allocation for rounds and physician – patient communication influenced participation. Although this may appear simplistic and obvious, the importance of this point can be overlooked. This taken-for-granted knowledge, empirically revealed here through rigorous research, highlights the interactional effects of the professionals and the system on patient experience. The finding points to the need for research into the impact of efficient and effective ward rounds on patient outcomes, including, for example, reducing length of stay.

Patient-centered care places significant responsibility on medical officers to establish an effective and efficient therapeutic relationship with patients. Confounding this is when professional associations and policy-makers continue to promote rounds that are led by medical officers,[22,23] which can imply the balance of power remains with medical officers.

Our findings showed the presence of senior medical officers strongly influences the patient experience. Patients have the most confidence when information and decisions were delivered by the consultant. Anecdotally this is not an unknown concept; nevertheless, little research into this area was found. One study looking at patient preferences for communication styles found self-confidence and competency in conversation were positive attributes.[24] The experience that consultants have may contribute to more confidence in decision making and delivery of the message. The same study found when medical officers focused on talking to patients as opposed to documenting and reading notes it was reported favorably.[24] In all our rounds involving consultants, they were able to focus their attention on the patient as the junior medical officers were documenting the decisions.

Those more familiar with the hospital system described, and were observed, to have a more collaborative relationship. Patients were more prepared for the round in terms both what was expected for them and what they wanted. This assisted with the efficiency of a round as a key function is to obtain information and plan care through clinician and patient communication.[1] This must happen in a limited space of time. Studies investigating how to prepare health professionals for rounds are plentiful, however there is a paucity exploring how best to prepare patients and evaluate their experience. Ensuring patients are prepared for a ward round will facilitate communication and expectations they have when meeting with their health care team.

Clinical and research implications

It is not uncommon to hear the term "ward round" spoken to and by patients. Our results revealed one third of participants had not heard of the term, or not able to describe the purpose. Therefore, is not unreasonable for patients to feel uncertain about their role in them. This may impact on medical teams' ability to elicit information needed to plan care; patient adherence with treatment; and patient satisfaction. Further exploration into the comparison between male and female, experiences of ward rounds may offer additional insight into the relationship between healthcare self-management and health care team collaboration. Similarly investigating the influence patient age has on how healthcare teams and patients interact may provide additional insight delivering patient-centered care. Further research into how best to prepare patients for a ward round, to meet the needs of the patient and health professional would build upon shared decision making principles.

Methodological considerations

This study was conducted at one facility with a relatively small number of patients. However, the use of multiple methods and multiple wards to triangulate findings, strengthens the study's credibility. Due to the nature of the setting, patients were from a vulnerable population group, so participant selection was biased towards those capable of engaging in and collaborating for shared decision making. Some participants were acutely unwell or frail aged, therefore exploring their responses in more detail which included extending the interview time was not feasible and this should be taken into consideration for future studies.

Conclusion

Our findings indicate there is a level of acceptance that a ward round is just part of being in hospital and of being a patient. However, with deeper exploration, the complexities of being a patient in a ward round are uncovered. There is a high expectation on senior medical officers to be present at rounds to facilitate patient confidence and yet this may not be always possible. The experiences between high users of the healthcare system and infrequent users suggest participating in rounds over the course of multiple hospital admissions allows patients to have more realistic

expectations of this process and increases their engagement and collaboration with the healthcare team for decision making. High system users have learnt to work with rounding process. There is an opportunity for healthcare providers to learn from patients about how they experience ward rounds and so improvements can be developed from both perspectives.

Ethical approval

Northern Sydney Local Health District Human Ethics Committee LNR/13/HAWKE/365.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Swenne CL, Skytt B. The ward round – patient experiences and barriers to participation. *Scand J Caring Sci*. 2014;28(2):297–304. doi:10.1111/scs.12059
2. Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: literature review. *Int J Health Care Qual Assur*. 2016;29(4):364–379. doi:10.1108/IJHCQA-04-2015-0053
3. Australian Commission on Safety and Quality in Health Care. Shared Decision Making; 2018. Available from: https://www.safetyandquality.gov.au/our-work/shared-decision-making/. Accessed August 22, 2018
4. Vahdat S, Hamzehgardeshi L, Hessam S, Hamzehgardeshi Z. Patient involvement in health care decision making: a review. *Iran Red Crescent Med J*. 2014;16(1):e12454. doi:10.5812/ircmj.12454
5. Smith SK, Dixon A, Trevena L, Nutbeam D, McCaffery KJ. Exploring patient involvement in healthcare decision making across different education and functional health literacy groups. *Soc Sci Med*. 2009;69(12):1805–1812. doi:10.1016/j.socscimed.2009.09.056
6. Sweet GS, Wilson HJ. A patient's experience of ward rounds. *Patient Educ Couns*. 2011;84(2):150–151. doi:10.1016/j.pec.2010.08.016
7. Redley B, McTier L, Botti M, et al. Patient participation in inpatient ward rounds on acute inpatient medical wards: a descriptive study. *BMJ Qual Saf*. 2019;28(1):15–23.
8. Baathe F, Ahlborg G Jr, Lagström A, Edgren L, Nilsson K. Physician experiences of patient-centered and team- based ward rounding – an interview based case-study. *J Hosp Adm*. 2014;3(6):127–142. doi:10.5430/jha.v3n6p127
9. Creswell J. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed. Thousand Oaks, CA: SAGE Publications; 2014.
10. O'Leary Z. *The Essential Guide to Doing Research*. London: SAGE; 2009.
11. Robinson OC. Sampling in interview-based qualitative research: a theoretical and practical guide. *Qual Res Psychol*. 2014;11(1):25–41. doi:10.1080/14780887.2013.801543
12. Francis JJ, Johnston M, Robertson C, et al. What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychol Health*. 2010;25(10):1229–1245. doi:10.1080/08870440903194015
13. Maguire M, Delahunt B. Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *AISHE-J*. 2017;8(3):3351–33514.
14. Nowell LS, Norris JM, White DE, Moules NJ. Thematic analysis: strivingto meet the trustworthiness criteria. *Int J Qual Methods*. 2017;16(1):1609406917733847. doi:10.1177/1609406917733847
15. Schwandt TA, Lincoln YS, Guba EG. Judging interpretations: but is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Direction Eval*. 2007;2007(114):11–25. doi:10.1002/(ISSN)1534-875X
16. Denham MA, Onwuegbuzie AJ. Beyond words: using nonverbal communication data in research to enhance thick description and interpretation. *Int J Qual Methods*. 2013;12(1):670–696. doi:10.1177/160940691301200137
17. Australian Bureau of Statistics. 2016 Cenus QuickStats; 2018. Available from: https://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats. Accessed June 17, 2019.
18. O'Leary KJ, Killarney A, Hansen LO, et al. Effect of patient-centred bedside rounds on hospitalised patients' decision control, activation and satisfaction with care. *BMJ Qual Saf*. 2016;25(12):921–928. doi:10.1136/bmjqs-2015-004561
19. Chow MY, Nikolic S, Shetty A, Lai K. Structured interdisciplinary bedside rounds in an Australian tertiary hospital emergency department: patient satisfaction and staff perspectives. *Emergency Med Australas*. 2019;31(3):347–354.
20. Frosch DL, Kaplan RM. Shared decision making in clinical medicine: past research and future directions. *Am J Prev Med*. 1999;17(4):285–294.
21. Ekdahl AW, Andersson L, Wirëhn A-B, Friedrichsen M. Are elderly people with co-morbidities involved adequately in medical decision making when hospitalised? A cross-sectional survey. *BMC Geriatr*. 2011;11(1):46. doi:10.1186/1471-2318-11-46
22. Commission CE. In Safe Hands; 2017. Available from: http://www.cec.health.nsw.gov.au/quality-improvement/team-effectiveness/insafehands. Accessed September 5, 2017.
23. Royal College of Physicians and Royal College of Nursing. *Ward Rounds in Medicine Principals for Best Practice*. London: RCP; 2012.
24. Mazzi MA, Rimondini M, Deveugele M, et al. What do people appreciate in physicians' communication? An international study with focus groups using videotaped medical consultations. *Health Expectations*. 2015;18(5):1215–1226. doi:10.1111/hex.12097

Supplementary materials

Table S1 Ward round observation tool

	Ward round attendees			
A1	*Clinician*	*Introduce by name*	*Introduce role*	*Role during round?*
	☐ consultant	☐	☐	_____
	☐ registrar	☐	☐	_____
	☐ intern	☐	☐	_____
	☐ NUM*	☐	☐	_____
	☐ bedside nurse	☐	☐	_____
	☐ physiotherapist	☐	☐	_____
	☐ occupational therapist	☐	☐	_____
	☐ pharmacist	☐	☐	_____
	☐ speech therapist	☐	☐	_____
	☐ social worker	☐	☐	_____
	☐other_____	☐	☐	_____
	☐other_____	☐	☐	_____

B.	**Discussion points**		
B1	*Topic:*		
	☐ consultant	☐ NUM	☐ physiotherapist
	☐ registrar	☐ bedside nurse	☐ occupational therapist
	☐ intern		☐ pharmacist
	☐ other _____		☐ speech therapist
	☐ other_____		☐ social worker
	Was the patient included in the conversation – yes / no		
	How_____		
	Notes:		
B2	*Topic:*		
	☐ consultant	☐ NUM	☐ physiotherapist
	☐ registrar	☐ bedside nurse	☐ occupational therapist
	☐ intern		☐ pharmacist
	☐ other _____		☐ speech therapist
	☐ other_____		☐ social worker
	Was the patient included in the conversation – yes / no		
	How_____		
	Notes:		
B3	*Topic:*		
	☐ consultant	☐ NUM	☐ physiotherapist
	☐ registrar	☐ bedside nurse	☐ occupational therapist
	☐ intern		☐ pharmacist
	☐ other _____		☐ speech therapist
	☐ other_____		☐ social worker
	Was the patient included in the conversation – yes / no		
	How_____		
	Notes:		

(Continued)

Table S1 (Continued).

B4 *Topic:*

☐ consultant	☐ NUM	☐ physiotherapist
☐ registrar	☐ bedside nurse	☐ occupational therapist
☐ intern		☐ pharmacist
☐ other _____		☐ speech therapist
☐ other _____		☐ social worker

Was the patient included in the conversation – yes / no

How_____

Notes:

C. Patient involvement

C1 *Was the patient given the opportunity to ask questions? – yes / no*

☐ who invited the patient to ask questions?

☐ during ☐ at the end

Did the patient ask any questions?

☐ yes ☐no

C2 *What did the patient ask?*

☐ discharge plans_____

☐ interpretation of results_____

☐ voiced concerns _____

☐ seek clarification on _____

☐ make a request _____

☐ voiced satisfaction_____

☐ other_____

☐ other _____

Note: *NUM – Nursing Unit Manager.

Table S2 Patient interview guide

Demographics	Question
A. Age	A1. What is your age?
B. Occupation	B1. What is your occupation?
Ward round component	**Question**
C. Definition/purpose	C1.Have you ever heard of the term "ward round"? If so, (go to D2) If not (go to D4) C2. Have you been involved in a ward round during your admission? C3.Why do you think we have ward rounds? C4. Can you tell me about your experience with clinicians coming to see you to discuss your care? *Who comes to see you? What happens when they come? Dr/nurse/physio/when/how/where Talk about your medical condition and treatment?*
D. Attendees/roles	D1. Can you recall if they introduce themselves to you? What did they say? *Name/role Dr/nurse/physio* D2. When clinicians come and speak to you, what do they talk about? *Tests/discharge* D3. What role do different clinicians have during the round? *Take notes, examined, took a phone call* D4. What do you your role is during the ward round? *Answer their questions, make sure their information is correct*
E. Advantages/ disadvantage	E1. What do you like about the ward round, or having clinicians come and review your treatment? *Get to speak to the Dr/find out what is happening* E2. What are some of the things you dislike about ward rounds/having clinicians review your treatment? *Too many people/jargon/memory*
F. Patient involvement	F1. During the discussion, do you feel your opinion is valued by the team? Can you give me an example? *Eye contact/ sit down next to me* F2. Do you feel you can ask questions? F3. Have you ever felt excluded from the conversation and decisions being made? Can you give me an example *Writing notes and not looking at me/interruptions*
G. Additional comments	G1. Can you think of any way ward rounds/clinical reviews could be improved? *Specific time/more often/privacy*

Chapter 7: Discussion

Overview of Chapter 7

Chapter 7 explores the relationships between the studies presented in Chapters 2 to 6. The system, health professional, and patient perspectives are discussed within the context of answering the overarching research question "What influences clinicians' and patients' involvement in ward rounds?" (Table 7A).

Table 7A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient's experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

The next chapter, Chapter 8: *Conclusion* answers the overarching research question: "What influences clinicians' and patient's involvement in ward rounds?"

7.1 Introduction

Health professionals may be involved in a variety of activities that discuss treatment planning for patients. However, as this thesis has demonstrated, ward rounds are a longstanding tradition for planning patient care, and educational activity for medical officers. Rounds have been a central part of hospital activity for over 100 years,[16] and historically, have been a medical activity.[53] Although nurses have traditionally attended ward rounds, their presence has decreased due to increased patient acuity and subsequent care activities.[54] The roles undertaken by allied health professionals in ward rounds are usually not as well described as those of medical and nursing.[6] Rounds have traditionally been conducted at the bedside, but have transitioned to conference rooms.[30,34,55] However, there is now a transition back to bedside ward rounds involving all members of the clinical care team.[14] Patient involvement in rounds has varied between being an active participant by engaging with clinicians, to more passive participation, such as being case studies for medical students and junior medical officers practicing physical examinations.[6]

Rounds provide an unique opportunity for research due to their complexity, importance, and transferability across health services worldwide.[16,37] The importance of ward rounds in planning patient care and providing an opportunity for medical education are well known. Their complexity arises from the lack of a single process or standardisation of health professional attendance.[6,37,42] Previous studies have the investigated ward round processes and attendees from a single perspective such as health professionals or patients[40,56-58] or a single rounding process such as SIBR or bedside rounds[5,24,59] The role health services have on health professional involvement has been identified.[29,60] Even so, these earlier studies have considered the influence health services, health professionals, and patient have on ward round contribution in silos. The importance of this thesis is that it draws these perspectives together so the

relationship between them can be explored and contribute to developing the knowledge base and practice improvement of ward rounds.

Studies into ward rounds examine them as individual processes, yet our study in Chapter 4: *Rounding Perspectives,* found that the clinical reality is multiple rounds normally are undertaken on a single ward.[45] Therefore, a new approach to investigating ward rounds as a *suite of processes* rather than *individual processes* recognises the multifaceted delivery of healthcare. Diversity in rounds supports different aspects of patient care and clinical education. Identifying ways rounding processes can complement each other provides a greater understanding of roles and expectations to empower clinicians and, in turn, patient participation.

This chapter will bring together the findings of Chapters 2-6 to explore the relationships between them. Chapter 2: *Literature Review* provided the theoretical foundation for the study. The findings identified variation in the naming conventions, purpose and participants of rounds undertaken in medical specialities. Chapter 3: *Teamwork* explored teamwork characteristics that support ward rounds. Chapter 4: *Rounding Perspectives* compared the theoretical findings of the literature review to their practical application in a hospital environment. Chapter 5: *Interdisciplinary Bedside Rounds* investigated the benefits and challenges of a rounding process, increasingly being implemented globally, from the perspective of frontline clinicians. Lastly, Chapter 6: *Patient Perspectives,* presented patients' experiences of participating in ward rounds.

Each study in this thesis was developed to explore the complex nature of ward rounds from three distinct perspectives: health professionals; patients; and specialties. Together, the

literature review and four studies provide insight into how clinicians and patients currently perceive their involvement in ward rounds. From these studies, four themes converged to answer the overarching research question "What influences clinicians' and patients' involvement in ward rounds?" (Table 7.1). Each of the three components has a different, but interconnected, influence on participation, which is represented in a unique empirically derived model to identify the relationships for influencing factors.

Table 7.1: What influences clinicians' and patients' involvement in ward rounds? Research questions, themes and stakeholders

Research question	Themes	Stakeholders			
		Health Professional	Patient	Specialty	Health Service
RQ1: What ward round processes occur in medical wards, and who participates?	Understanding and recognition of rounding processes Workforce structure challenges Actual or perceived clinicians' and patients' behaviour	✓	✓		✓
RQ2: Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?	Actual or perceived clinicians' and patients' behaviour	✓	✓		
RQ3: How do clinicians describe the ward round processes on their wards?	Understanding and recognition of rounding processes Actual or perceived clinicians' and patients' behaviour Delivering person-centred care	✓		✓	
RQ4: What do clinicians perceive as the benefits and challenges to the interdisciplinary bedside rounds?	Delivering person-centred care Workforce structures Actual or perceived clinicians' and patients' behaviour Understanding and recognition of rounding processes	✓	✓		✓
RQ5: What are the patients' experiences of ward rounds?	Understanding and recognition of rounding processes Workforce structure challenges Actual or perceived clinicians' and patients' behaviour	✓	✓	✓	✓

7.2 Influence of stakeholder groups on ward round participation

This section reveals the impact each of the four stakeholder groups had on health professionals' and patients' involvement in ward rounds. As shown in Table 7.1, there is considerable overlap of the four themes within each stakeholder group. This section will discuss the influence of the four stakeholder groups on ward round participation.

In the early period of the study the health system, referring to the overarching organisation comprised of multiple independent hospital facilities and service, appeared to be an important influencer. This may have been because governing bodies develop policies and patient safety programs. As the studies progressed to exploring experiences of clinicians and patients, they framed their experiences, challenges and benefits of ward rounds and teamwork within the context of their local health service. How the health service implemented and responded to policy and workforce needs was then identified as an influence.

7.2.1 Health service

The health service had the largest influence over health professionals' and patients' involvement in rounds. High quality, safe patient care needs the combined treatment of medical, nursing and allied health clinicians. Nevertheless, planning and communication can be difficult when teams are working disparately across hospitals, wards and specialties.[33] While this thesis confirms collaboration between healthcare professionals is still challenging in the face of a hierarchical system,[50] it demonstrates there are efforts to improve collaboration through processes such as rounding.

Over the five years since this study began, IBRs have become more frequently implemented in Australia and internationally. They are seen as holding the promise of facilitating person-

centred care and collaborative care planning between health professionals and patients, and may in turn improve patient safety.[5,22] Despite this promise, studies into structured bedside rounding have not consistently demonstrated more positive outcomes.

There is significant variation in how IBRs are implemented and the impact they have on patient care.[59] Earlier studies have focused on singular interventions rather than evaluating multiple measures including teamwork, patient safety, and care efficiencies.[21]

In Australia there has been no significant improvement in patient outcomes, such as length of stay;[5,61] while overseas studies have shown a reduction in the length of stay.[62] Structured rounds may improve teamwork and communication between health professionals,[5,63,64] however a recent study observed improvement in either nursing or patient satisfaction remained equivocal.[61] An important component to structured rounding are tools to guide discussion and process. Yet, a commonly used tool or variation of, such a tool known as "ISBAR"[14] (introduction, situation, background, assessment, recommendation) does not include the discussion element which the study in Chapter 5: *Interdisciplinary Bedside Rounds*, found is valued by interdisciplinary teams.[50] Research exploring interdisciplinary bedside rounding without such tools concluded clinicians would benefit from a checklist to improve the rounding structure.[30,65] Modifying the communication tools to include a discussion prompt may facilitate improved shared care planning.

Ward rounds are an opportunity to engage in person-centred care. There are implications for person-centred care as an emerging knowledge field;[66] in particular, research on the implementation of person-centred care within a hospital setting .[66] How person-centred care is operationalised and measured at the time of the ward round is unknown.[3] Defining person-

centred for patients and health professionals remains clouded in ambiguity.[66] Challenges to implementing person-centred care requires change at organisational and workplace culture levels,[66] as well as to staff education.[67] Variation in health professionals perspective of the rounding undertaken can impact delivery of patient care.[45] Health service support through education and orientation can ensure the processes undertaken are identified and understood.[45] High performing services facilitate quality improvement through executive leadership that engages with health professionals and patients; supports innovation; and encourages open communication between all levels of the workforce.[68]

The principle of person-centred care emphasises purposeful interactions between health professionals and patients to enable informed shared decision making.[26] This thesis began with the premise that rounding processes should have the patient at the heart. However, the ability of rounds, such as bedside rounds, to improve person-centred care is uncertain.[59] Empirical studies investigating the relationship between improved person-centred care and bedside rounds have not drawn strong conclusions.[59] Patients reported medical officers spent more time with them during bedside rounds compared to traditional rounds, yet this did not improve patient experience compared to traditional rounds, or rounds carried out away from the bedside.[59] System issues, such as patient volume, and environmental logistics, such as isolation rooms, were considered barriers to medical officers engaging in person-centred care during bedside rounds.[59] These issues should be considered by hospital management when planning the implementation of bedside rounds.[59] Our studies in Chapters 3 and 5 illustrated rounding process needs a foundation of teamwork and shared values, expectations, and effective communication in order to support collaborative care planning and safe quality care.[49,50] Building teams skills in these areas may support teams who are not co-located.[33] However,

achieving effective communication and collaboration is challenged by traditional medical hierarchy and a shared understanding of roles and responsibilities.[6,48,49]

In Chapter 5: *Interdisciplinary Bedside Rounds*, clinicians reported concerns about attending bedside rounds for all their patients.[50] Participants identified workforce and organisational challenges, including the physical layout and subsequent patient allocation, contributed to the ability of nurses and allied health professionals to attend rounds.[50] Study findings indicated that allied health professionals' attendance was challenged by the multiple locations of their patient list.[50] Similarly, ward nurses may be caring for patients under different medical teams, which can affect their ability to attend rounds depending on the time they occur,[60] the type of round, and associated expectations.[45] These health service issues are represented in the model shown in Figure 7.1. It is important that health services recognise that organisational change may be required to support IBRs.[60] Health services can cultivate positive culture change through interdisciplinary collaboration.[69]

A positive organisational culture of interdisciplinary collaboration may require change such reorganising service settings to support ward-based care and supporting collective, interprofessional quality improvement initiatives. This may include providing sanctioned time and resources for interdisciplinary teams to work together to establish shared decision making, and improving communication through focusing on care planning and management.

Figure 7.1: Hierarchy of Influence on Ward Round Participation

7.2.2 Specialty

The literature review for this thesis did not identify studies that compared ward rounds carried out in acute medical and rehabilitation specialties. Comparison studies were found for cardiology and urology specialties,[56] medical and paediatrics specialties,[70] and within acute general medical wards.[63] Comparisons need to be considered within the context of the settings. There are inherent differences between medical and surgical,[56] adult and paediatric[70] specialties compared to medical and rehabilitation specialties. This thesis makes a unique contribution to an emerging field of ward round comparison studies by providing insights into two specialties not previously compared. Moreover, this thesis has shown that neither medical nor rehabilitation specialties had meaningful influence on health professional and patient participation in ward rounds. This was in contrast to Blankenburg, Hilton, Yuan, et al.[70] where the speciality influenced shared decision making during rounds.

In a comparison study between cardiology and urological specialties, both patient groups reported similar intensities of fear when anticipating a ward round.[56] Study findings in Chapter 4: *Rounding Perspectives* revealed patients with chronic disease experienced more satisfaction with rounds.[51] However, in a study by Reddin, Davis and Donald[56] patients with acute surgical conditions had a better ward round experience than chronic medical patients. Satisfaction may have been influenced by the time of day the ward round was undertaken, with surgical patients having a round in the afternoon instead of the morning.[56] A participant in the study (Chapter 6: *Patient Experience*), suggested ward rounds could be improved for patients by holding them in the afternoon when the ward was not so busy.[51] Yet, other research into afternoon ward rounds discovered they contributed to delayed discharges, longer working hours for junior medical officers, and diminished job satisfaction.[71]

The study results revealed speciality did not have any meaningful influence in health professionals' and patients' participation in ward rounds. Clinicians from the rehabilitation wards had a greater shared understanding of rounding processes than their colleagues in acute medicine.[47] However, this did not translate into improved interdisciplinary communication or collaborative teamwork.[45] Acute medical clinicians perceived overall interdisciplinary communication on patient care as more effective than rehabilitation.[45] In exploring communication specifically in the context of an IBRs, both acute medical and rehabilitation clinicians identified similar benefits and challenges.[50] The studies presented in Chapters 3,[49] 5,[50] and 6[51] did not reveal any further differences between clinicians' and patients' ward round participation. While speciality did not influence participation in ward rounds, health professionals and patients should be supported through orientation to the ward's rounding processes, their professional roles and responsibilities, and teamwork expectations.

Therefore, the model in Figure 7.1 does not include speciality as an influencer to ward round participation. The different components within the model are principles that can be applied across different specialties.

7.2.3 Health professionals

Health professionals play a key role in influencing *who* participates, and *how* they take part in ward rounds. The studies undertaken for this thesis confirmed findings from the literature, and expanded on evidence, that despite ward rounds being an everyday activity, underneath the surface lies a complicated and complex web of processes. Chapter 2: *Literature Review,* revealed eight different ward round processes. Within each process the naming conventions can be interchangeable, for example "multidisciplinary" and "interdisciplinary" ward rounds, as well as variation in round attendees.[6] Chapter 4: *Rounding Perspectives* provided evidence

of how these variations can lead to members of an interdisciplinary team having different perspectives of the rounds they participate in, and with whom.[45]

This thesis reveals an important gap between research findings and the practical application of ward rounds. Despite distinct rounding processes being examined in literature, they are not necessarily distinguishable to frontline clinicians. Research indicates a continued need to study ward rounds, the impact of the processes on care planning and how clinicians are supported during them. For example, in a 2019 UK study,[72] recently qualified medical officers frequently conducted rounds without a senior medical officer present, and reported that they felt underprepared to do this.

In Chapter 4: *Rounding Perspectives*, carried out a previously unexplored area of study into the health professionals perspectives into rounding processes across different specialties.[45] It was shown that clinicians did not have a shared understanding of rounding processes undertaken on their wards. Nurses and allied health professionals had different perceptions of what constituted a ward round activity compared to medial officers.[45] Nurses and allied health clinicians on both medical and rehabilitation wards identified the journey board meeting as a ward round, while medical officers did not.[45] While the journey board can be an interdisciplinary activity, it is a patient flow meeting and not a patient care planning process.[45] The journey board is designed as a communication tool for patient information such as referral status to other clinicians, estimated discharge date, and possible delays to discharge.[73] Ward rounds plan care to achieve treatment goals.[6] These examples provide clear illustration of the disconnect between the theoretical and empirical evidence of an intended activity. The relationship between health professionals' disagreement of rounding processes led to

significant disparity in the perception of their own, and their colleagues', attendance at rounds.[45]

In our study in Chapter 5: *Interdisciplinary Bedside Rounds*, 'being on the same page' was one of the main anticipated benefits of interdisciplinary rounds.[50] Participants in our study had varied experience with IBRs. 'Being on the same page' may be aspirational for some clinicians. A 2017 study[40] investigating goal setting during interdisciplinary rounds showed little consistency between clinicians from different professions in a shared understanding of goals. The reality of IBRs facilitating collaboration may not meet the expectations for some clinicians. Health professionals need strong organisational support to facilitate team collaboration and coordination for any rounding process.[50]

Health professionals desire processes that facilitate delivery of person-centred care.[50] They identified this as a benefit of IBRs.[50] A study into values amongst health professionals identified differences in how health disciplines perceive person-centred care.[74] While challenges in delivering person-centred care can carry through the health service levels, nurturing high performing teams may support a shared understanding amongst professionals. Working through attributes of effective teamwork with clinicians may facilitate improved collaboration.[79] In turn, this may support a shared understanding of rounding goals such as person-centred care,[46] and participation in ward rounds.

Delivering safe patient care can be improved through interdisciplinary teamwork and participation in ward rounds.[5,75] Addressing an identified gap in literature, including allied health professionals in all our clinician participant studies,[45,49,50] brings attention to the disconnect between medical, nursing and allied health professions. An example of this is the

inconsistent perception of rounds undertaken on each health professionals ward, and who attends and participates, or not, in them.[45]

Earlier research has focused on teamwork within a process or activity.[76] Chapter 3: *Teamwork*, presented dimensions of effective teams.[77] Also the chapter developed a uniquely adapted framework (Table 3.2) that links teamwork characteristics with the practical application of supporting ward rounds.[49] This adapted framework draws together examples of ward round teamwork characteristics from international evidence.

Team, system, environment assessment tools and education are examples of strategies used to assist teams when implementing structured rounding.[14,78] Expanding on these and recognising the finding in Chapter 2: *Literature Review* that identified multiple rounding processes,[6] could include a team quality improvement activity to identify effective team dimensions within the context of ward rounds (Table 7.1). The tool uses the dimensions of teamwork that have been demonstrated to be effective in developing and sustaining teamwork.[75] Establishing a shared understanding of team roles and responsibilities provides clear expectations for members and may facilitate a shift from any actual, or perceived, hierarchy within the team. It provides an opportunity to discuss leadership which can also be an opportunity to move away from the traditional medical leadership. Facilitating an exercise whereby team members collectively reflect upon and complete the sheet is a strategy by which to make explicit people's (mis)understandings and expectations. The benefit of facilitating teams to identify examples and expected values within their own rounds provides team members with ownership of the process. Quality improvement activities are more sustainable with the support of the health service.[68] The dimensions of teamwork can be adapted to any rounding process. Importantly

the guide supports teams to transition from theory based to teamwork to exploring it in the frontline ward round.

Table 7.2: Effective Team Characteristics Within Our Ward Round

Effective Team Characteristics Within Our Ward Round		
Dimensions of effective teams[74]	**Examples for ward rounds**	**Our team's examples**
Leadership	• Introduce healthcare team to the patient and initiate conversation between patient and health professionals [6] • Facilitate shared decision making	
Backup behaviour	• Understanding of each other's roles during the round to ensure task allocation and responsibilities are delivered appropriately [51]	
Adaptability	• The team is responsive to treatment plans as patients' needs change [48] • Facilitated when there is effective team communication and shared goals [77]	
Team orientation	• "Being on the same page"[31] • A shared mental model to facilitate patient centred care and mutual agreement in treatment goals	
Mutual performance monitoring	• Team monitoring occurs through feedback which supports team learning and professional development [39] • Organisational monitoring occurs through policy makers and governing bodies developing guidelines and principles for interdisciplinary ward rounds [5176]	

Supporting effective rounding processes is strengthened when preceded by effective teamwork that, in turn, can sustain different team activities.[76] The study into teamwork characteristics that support rounds (Chapter 3) found all three health disciplines valued similar characteristics necessary for effective rounding and participation.[49] Yet, these characteristics do not automatically transfer into positive experiences or perceptions of participation in interdisciplinary rounding.[50] For example, in Chapter 5: *Interdisciplinary Bedside Rounds*, nurses and allied health professionals reported feeling hesitant about contributing to patient care planning as it may not be received well by medical officers.[48] In contrast medical officers valued interdisciplinary input into care planning.[50]

Medical officers recognise rounds as being a routine part of patient care planning.[6] Nurses and allied health professionals recognise the benefits of attending rounds, but perceive them as an activity additional to routine patient care.[50] In a previous study nurses considered attending rounds optional.[60] This is not unexpected as rounds observed for this thesis were medically driven.[51] This may affect clinicians' prioritisation of participating in rounds.

Although IBRs facilitate team collaboration,[50] medical officers and nurses are primarily the professionals involved.[6] The study in Chapter 6: *Patient Experience* observed 14 bedside rounds, of which only three included a nurse, and none involved allied health clinicians.[51] There is limited research on allied health professionals involvement in ward rounds.[6,51] The inclusion of allied health professionals in the research showed similarities between them and nurses when identifying benefits and challenges to IBRs. Nurses and allied health professionals understand why and how they could contribute to rounds.[50] Yet, influencing their hesitation to contribute is a perception that medical officers will not ask for, or consider if given, their clinical opinions. This is in contrast to medical officers in the study in Chapter 5: *Interdisciplinary Bedside*

Rounds who valued interdisciplinary representation.[50] Another factor contributing to low attendance rates for nurses and allied health professionals was their limited capacity due to the increasing demands of patient care.[50,60]

The literature review in Chapter 2 identified patient care planning and clinician's education as purposes for ward rounds.[6] In contrast, no clinicians in the research reported education as a benefit or challenge of rounding.[50] More recent research identifies "patient education" as a critical role of the ward round.[56] Even so, patient education was not identified as a purpose in studies undertaken as part of this thesis.

Studies have shown health professionals value processes that support team collaboration and person-centred care. While the desire is there, the challenge is in achieving it. As represented in the model (Figure 7.1), factors influencing participation are both top-down (health service) and horizontal (health professionals themselves). How health services organise and locate workforces logistically contributes to the physical ability of clinicians to attend and participate in rounds.[50] Yet, redesigning health services to support person-centred care, such as in ward-based teams, requires time and planning to ensure governance and operational systems are effective.[79] Health services need to support health professionals to work within current organisational structures.

The influence of organisational culture also requires consideration. Culture within healthcare services and teams can be complex and historical. To support operational change, leaders of the health service need to explore and acknowledge clinicians' different cultural experiences with interdisciplinary attitudes, respect, and standards of conduct.[50] Working with interdisciplinary teams to understand how such experiences influence teamwork, nurtures the

positive aspects and identifies opportunities for improvement. Culture within interdisciplinary teams must foster a sense of feeling valued and transparency in role expectations, including participating in rounds for improved patient care.[49]

7.2.4 Patients

Patient perspectives of ward rounds remain an under-researched area.[56] Just as health professionals find rounding processes complex, patients expressed uncertainty about the process.[51] Clinicians often "learn on the job",[72] and our results in Chapter 6: *Patient Experience* revealed patients who were high users of the health system similarly navigated ward rounds through experience.[51] This unique finding expands on what is already known about the factors that contribute on patient participation in rounds which include: age; communication skills and confidence; and an understanding of their disease.[32] Although patients and health professionals approach ward rounds from two different perspectives, the influences on their involvement are similar: knowing their own role; knowing the process in terms of when the round will occur; and recognising the round as a crucial part of care planning.

Participants in the study of patient experience showed those who utilised the health system frequently had more exposure to ward rounds, and were more comfortable with the process, their role, and expectations.[51] However, this understanding was described as self-taught rather than driven or supported by the health organisation or clinicians.[51] For example, being physically present at the round was influenced by patients' knowledge of when the round was to occur. There was a sense they would miss speaking to the doctors if they were in engaged in another activity such as showering,[51] thus preventing their input into their care planning, or receiving the answers they needed for peace of mind or personal plans.

The health literacy of a person must be considered when there are any clinician-patient interactions. Individual health literacy is defined as a person having the skills and knowledge to understand and appraise information in order to make decisions about their health, including any actions needed.[80] Environmental health literacy means policies, processes, information and providers within the health system impact the way in which service users obtain and understand information and access services.[80]

Ward rounds are a key activity for patients to discuss care planning and address any concerns with their healthcare team. Therefore, the capacity for a patient to engage with clinicians and understand the communication can improve as health literacy improves.[80] When an individual has a satisfactory level of health literacy they are able to take responsibility for their own health.[81] Earlier studies found determinants of unsatisfactory health literacy included: socioeconomic status; education level; physical limitations;[82] and primary language spoken.[83]

Patients can support themselves by asking questions when they are unsure of information, and by involving family members or carers in ward rounds (if that is the patient's choice). Patients can also provide valuable education opportunities and should be encouraged to be involved in education for themselves and to health professionals.[80] Health services can support patients by seeking their feedback on the information patients receive to ensure key messages have been communicated. [80]

Optimising patient involvement in ward rounds could mirror the way structured rounding supports interdisciplinary clinician involvement. Just as clinicians prepare for rounds, this too could be encouraged for patients. While the use of communication tools such as ISBAR and safety checklists improve ward round efficiency and processes,[62] they do not provide a

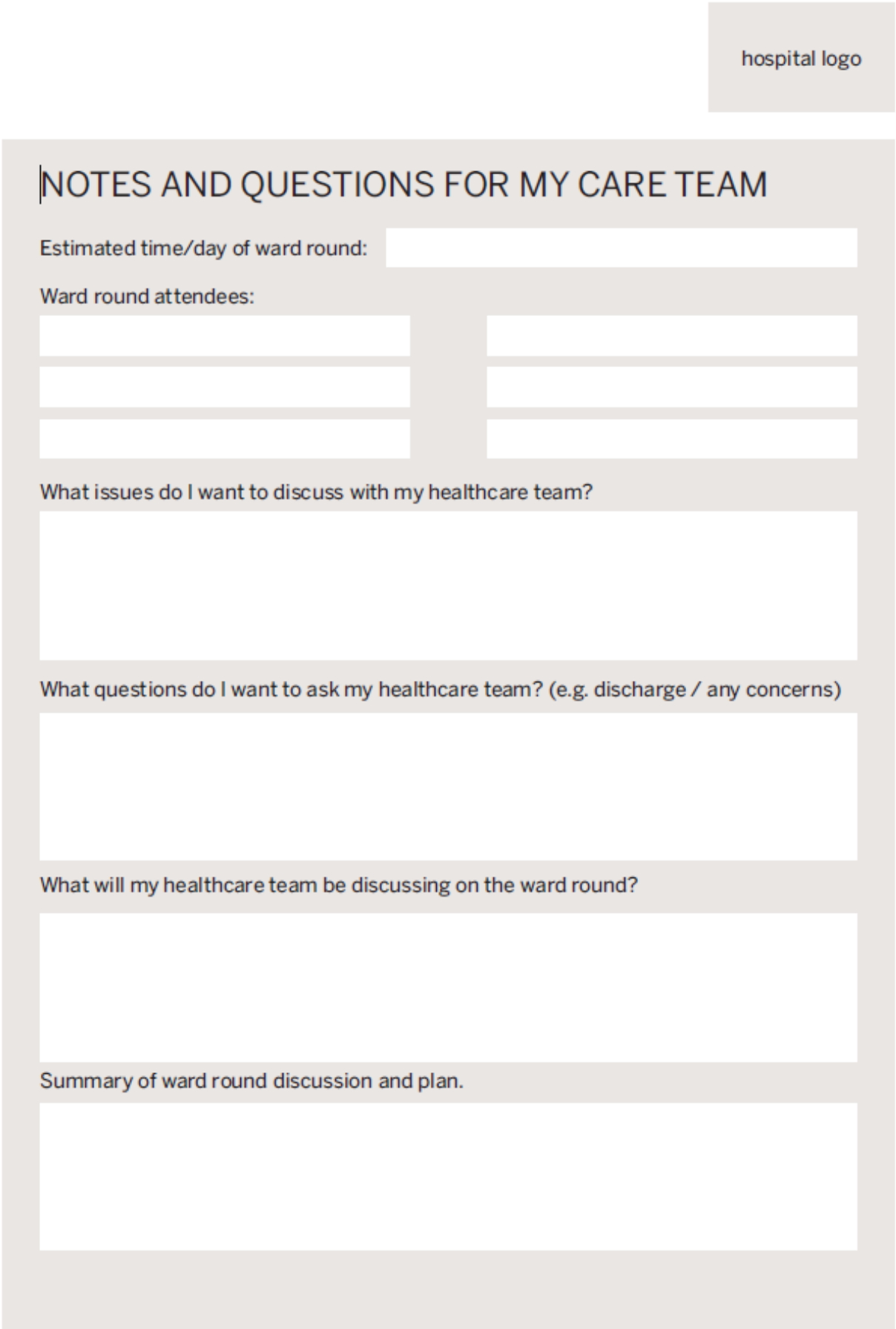
checklist for patients to ensure their questions and inquiries are discussed. Moreover, they do not prepare the patient for when, or if, they are asked for information. The development of a suite of tools for patients may improve the quality and efficiency of communication between patients and clinicians. To help patients participate, they need to be taught *how* to be involved. In Chapter 6: *Patient Experience*, patients involved in the study suggested being prepared for the round would improve their ward round experience.[51] Being prepared encompassed two key ideas: knowing what time the rounds will occur, and knowing ahead of the round what will be discussed.[51]

Patients who are given the opportunity to ask questions are given more control of communication between themselves and clinicians.[84] A study by Farberg, Lin, Kuhn, Flanders and Kim[84] showed a hospital provided notepad improved patient experience and communication with health professionals. The first page of the notepad listed three questions: 1. What is the reason for my hospitalisation?; 2. What tests are planned for today?; and 3. What medications will I be on? Additional patient questions were written on the back of the page.[84]

Expanding on the idea of a communication tool for patients could be to include a ward round-specific communication tool to optimise this dedicated time with the care team; to this end, a 'patient ward round note pad' tool is proposed (Figure 7.2). To facilitate person-centred care, a member of the care team could support the patient by providing the time the ward round was going to occur and give an indication of what was going to be discussed. Transparency in what will be discussed allows patients time to prepare their responses as well as their own questions. This also allows time to think about any questions they have, making time spent on the ward round more targeted and effective. Rephrasing the questions may also facilitate patient directed conversations. Just as health professionals document notes from the ward round, patients could

also be given a summary of the discussion, decisions and care plan. Additionally, there is opportunity to explore the level of information patients would like included. For example, information such as diagnosis, medications, and prognosis may enable them to participate in the round. This also provides the patient with a contemporaneous record of their care prior to receiving a discharge summary. Patient communication tools can be co-designed with patients to ensure they are easy to understand and meet patients' needs.[78]

Figure 7.2: Patient ward round notepad



The research found patients perceived their own role in the round in two areas: self-advocacy through active participation; and passive involvement by responding to questions as opposed to asking them.[51] If nurses are unable to attend rounds, their absence may leave patients feeling vulnerable if no other advocate is available. Effective advocacy is known to improve patient safety.[85]

Despite the findings in Chapter 6: *Patient Experience*, where all but one respondent reported a nurse was not required on a ward round,[51] the role of patient advocacy has always been a central part of nursing practice.[86] In Chapter 5: *Interdisciplinary Bedside Rounds*, nurses reported patient advocacy as their role in IBRs, but were unable to fulfil this role due to time pressures with routine patient care.[50] Time pressures have been a barrier to nurse advocacy historically to present day.[86]

Where a nurse is not able to fulfil the patient advocate role other opportunities or challenges may present. The vulnerability of the patient needs first to be considered: in particular, that the patient consents to taking more responsibility for their participation in the rounds and is emotionally, physically and cognitively able to do so. If this is the case, then quality improvement opportunities may consist of patients being "taught" what to expect during ward rounds and skilled so they can participate. Peer education and support has been successfully utilised in areas of disease management such as diabetes[87] and self-care behaviours.[88] This has been positively associated with engagement and improved health when patients teach other patients about disease management.[88] Within the palliative care setting, patient volunteers carry out different tasks including patient advocacy and provide practical informational support.[89] In the hospital setting, palliative care patient volunteers facilitate communication between the patient and care team.[89] Translating what is known from palliative care and this current study

to teaching patients how to prepare for, and communicate with health professionals during rounds, is an opportunity for improved patient care, and future research. One advantage of this approach is that it does not place additional tasks on health professionals, who already face the challenges with rising patient care needs.[50]

A co-designed quality improvement project exploring the appropriateness of peer education may assist health services to determine their viability. The initiative may initially be trialled on a single patient population within a ward. Consideration could include: who would carry out peer education, how peer educators would be trained, and which patient populations would be suitable to receive education. Using a PDSA approach would allow the measurement and redesign of the intervention to assess the efficacy of peer education prior to spreading the intervention to other populations or wards (or choosing not to proceed).[52]

Spreading of quality improvement initiatives can include family and carers.[90] Just as patient experience of ward rounds increases their confidence and understanding of the rounding process,[51] a similar outcome has been found for family and carers' ability to raise safety concerns.[90] Having family members or carers facilitate communication between patients and health professionals contributes to safe and acceptable patient care.[90] Thus, providing carers with a structured format for ward round communication invites them to raise concerns or share information.[90] The 'Patient ward round note pad' is a tool that could also be used by carers to this goal. Education should be offered to family and carers in a similar way to that provided to patients.

The research demonstrates patients are wanting to be involved in ward rounds. Their ability to achieve this is either hampered or enhanced by top-down influences from the health service

and health professionals, who determine the type of rounding process and how they are carried out. The process, if re-engineered could encourage tailoring ward rounds to patient preference which underpins person-centred care. Horizontal influence also occurs where patient-related factors can affect their own willingness and ability to participate (Figure 7.1).

7.3 Hierarchy of influence on ward round participation

The research has resulted in the development of a unique empirically based model representing the factors that influence participation in ward rounds. This is an important new contribution of this research and adds to the emerging evidence base. The research identified three influencing factors on clinicians' and patients' participation in ward rounds: the health system; health professionals; and patients. The hierarchy of influence is modelled below, with the degree of influence represented by size of each circle (Figure 7.1).

The health service has the most significant influence on health professionals' and patients' participation in ward rounds, represented by the largest circle. The influence can be both a positive and negative. The model shows that the health service has the greatest influence on a culture of safety and quality; work processes; and interprofessional organisation. The health service has a direct influence on ward round processes undertaken. Clinicians are directly influenced by the health service through encouraging or inhibiting interdisciplinary team culture and staff orientation to rounding processes and expectations. Similarly, the health service directly influences patients through processes embedded in practice and forming, or not, a culture of patient-centred care. In turn, these influences affect the (in)ability and (un)willingness of health professionals and patients to participate in ward rounds.

Health professionals have the second largest influence on their own, and patients' participation in ward rounds, represented by the mid-sized circle in the model. Although health professionals are influenced by the health service, they also contribute to their own team processes, culture and understanding of roles and expectations. These elements have a direct effect on patient-centred care. In turn, team structures and culture influence how both themselves and patient participate in rounds.

Patients have the least influence on their own participation in ward rounds, represented by the smallest circle in the model. While patient participation is influenced by both the health service and health professionals, they do have some control over their involvement, represented by the circular arrow inside the circle. The culture of patient-centred care, and the level of participation patients desire, directly influences their participation in ward rounds.

Influence can be two-way. Health professionals can take ownership of team culture and process that affect the health service. How teams choose to work can positively or negatively affect other processes within the health service. Patient experience feedback can and does influence health service processes and systems, and also professionals' behaviour. Therefore, the influences on clinicians' and patients' is a complex and continuous loop of: culture; processes; workforce organisation; expectations; and approach to patient-centred care.

7.4 Conclusion

Health services, policy makers and leaders lay the foundation for health professional and patient participation in ward rounds. The relationship between the health service, professionals, and patients is interwoven. The health service establishes policies and procedures that guide care planning activities. The busy and unpredictable nature of the hospital environment can

influence how and when rounds can be conducted, and who can attend. The organisation's quality improvement culture may affect the readiness of health professionals and patients to consider how rounds might be improved. When health professionals engage in rounds, it can be based on their own interpretation of a rounding process rather than a shared understanding. Colleagues may need one another's support to identify rounding opportunities. Patients need assistance, via tools and education, to develop the skills to participate. The empirically derived model is a unique contribution of this research and adds to the emerging evidence base. The next and final chapter, Conclusion, presents the answers to the overarching research question and identifies opportunities for future research.

Chapter 8: Conclusion

Overview of Chapter 8

The previous chapter integrated the individual studies' discussions to present a broad perspective on ward round participation from three key stakeholders in healthcare: the service; health professionals; and patients. The Conclusion chapter defines the answers to each of the research sub-questions and the overarching research question. In addition, study limitations are acknowledged and opportunities for future research are presented.

Table 8A Chapter summary of the research overview

Chapter	Investigation perspective	Topic of research
Chapter 1	Introduction	The rationale for the study.
Chapter 2	System perspective	Literature review: What ward round processes occur in medical wards, and who participates?
Chapter 3	Health professional perspective	Characteristics of effective interdisciplinary teamwork to support ward rounds.
Chapter 4		Clinicians' perceptions of rounding processes and effectiveness of clinical communication.
Chapter 5		Interdisicplinary teams perceptions of the benefits and challenges of interdisciplinary ward rounds.
Chapter 6	Patient perspective	Patient's experience of ward rounds.
Chapter 7	Discussion	Exploring the relationship between the system, health professional and patient perspectives on ward rounds.
Chapter 8	Conclusion	What influences clinicians' and patients' involvement in ward rounds?

8.1 Overview

This series of studies has examined the complex nature of ward rounds and considered the impact on and behaviour of clinicians and patients. This seemingly "everyday process" is undertaken globally, yet the complexities of the clinicians' and patients' experience have remained anecdotal rather than empirical. This thesis explored the challenges of working in an environment where healthcare professionals work within multiple parallel processes. Exploring shared understanding of rounds between health professionals and patients across two specialties within one hospital is important as neither population is static in its movements. Health professionals move between specialties and wards just as patients move from the acute setting to rehabilitation. There is variation in rounds in both name and how they are carried out[6] and so it is important that each speciality, or ward, sets clear expectations of their rounding processes. These findings contribute to this area of research by identifying and responding to gaps between a theoretical understanding of ward rounds and their practical application.

This thesis discussed the relationship between the influence of health services, health professionals, and patients on ward round contribution and attendance. Previously these "influencers" have been considered in silos; however, this thesis drew them together to explore the impact they have on each other. This revealed how patients navigate rounding processes in order to participate, actively or passively, in their own treatment planning. In the following section, the research questions identified in Chapter 1: *Introduction*, are revisited. The findings are presented in relation to literature discussing ward round processes, and health professional and patient experiences within acute medical and rehabilitation settings.

8.2 Rationale, contribution and research questions

Analysis of medical and rehabilitation ward round processes revealed gaps relating to defining rounding process; the perceptions and practice health professionals have of the rounds they undertake; and how patients experience them. The studies in this thesis sought to address these gaps. Taking a combined perspective of the health system, health professional and patient provides a unique contribution to understanding the relationship between theory and practice in the field of rounding processes. Studies investigating ward rounds commonly express the caveat they are difficult to define.[6,19] Similarly, there is a lack of standardisation and guidance on how health professionals participate in them.[37,91] The Introduction chapter presented a framework for the study. Chapter 2: *Literature Review*, outlined evidence of the complex nature of rounding processes and research opportunities that led to this study. Chapters 3 to 6 presented each research sub-question as unique studies. For each study, the background, rationale, methodology, findings and conclusions were outlined, and the associated research sub-question answered. Each study revealed important insights into how health professionals and clinicians perceive ward rounds, and how this influences their involvement. Chapter 7: *Discussion* brought individual studies together to discuss the topic as a whole.

Our studies have provided four valuable and unique contributions to the ward round knowledge base. First, this research examined variation in naming and conceptualising of rounds in the literature, identifying the confusion and disparity that exists. Second, this research revealed differences in health professionals' understanding, expectations and practice of rounding within the medical and rehabilitation inpatient settings. Third, this research presented empirical evidence for previously anecdotal concepts around patient and health professional communication during ward rounds. Fourth, this thesis brought together the health system, health professional, and patient perspectives on ward round participation. This has identified a

co-dependent relationship between them that influences how clinicians and patients experience ward rounds.

To achieve these contributions required asking clinicians and patients to explore their own practice and experiences of ward rounds and interdisciplinary teamwork. For patients, the study occurred at a time of either acute illness or following an episode of illness. An exploratory multi-method methodology[48] was employed. One overarching research question was explored: What influences clinicians' and patients' involvement in ward rounds?

Five sub-questions were:

RQ1: Which ward round processes occur in medical and rehabilitation wards, and who participates?

RQ2: Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?

RQ3: How do clinicians describe the ward round processes on their wards?

RQ4: What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?

RQ5: What are patients' experiences of ward rounds?

Each of these sub-questions formed a single study. The decision to approach each sub-question individually ensured appropriate methodology was used to address each research question effectively. Additionally, specific outputs resulted from each study (Table 8.1).

Table 8.1 Research overview

Research questions	Methods	Participants	Thesis chapter
Overarching research question: What influences clinicians' and patients' involvement in ward rounds?			**Chapter 1 Introduction:** presents the rationale and research question for the study
RQ1: What ward round processes occur in medical wards, and who participates?	Narrative literature review		**Chapter 2 Literature review** Comprised of the publication: Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *International Journal of Health Care Quality Assurance* 2016;29(4):364-379.
RQ2: Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?	Survey	77 clinicians • 11 medical officers • 46 nurses • 20 allied health clinicians	**Chapter 3 Teamwork** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring attributes of effective interdisciplinary teamwork to support ward rounds. *International Journal of Health Care Quality Assurance.* Accepted for publication February 2020.
RQ3: How do clinicians describe	Survey	77 clinicians	**Chapter 4 Rounding Perspectives**

Research questions	Methods	Participants	Thesis chapter
the ward round processes on their wards?		• 11 medical officers • 46 nurses • 20 allied health clinicians	Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11.
RQ4: What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?	Survey	77 clinicians • 11 medical officers • 46 nurses • 20 allied health clinicians	**Chapter 5 Interdisciplinary Bedside Rounds** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare.* 2019;12:1023-1032.
RQ5: What are the patient experiences of ward rounds?	Observation Face-to-face Interview	• 14 ward rounds • 14 patients	**Chapter 6 Patient Experience** Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019; 13:1415-1429.
Overarching research question: What influences			**Chapter 7 Discussion:** presents the relationship between the five studies.

Research questions	Methods	Participants	Thesis chapter
clinicians' and patients' involvement in ward rounds?			**Chapter 8 Conclusion**

8.3 Answers to research questions

The following sections present the answers to sub-questions before considering the overarching research question.

8.3.1 Which ward round processes occur in medical wards, and who participates?

The literature review[6] revealed the multi-process system that underpins the ward round. The complexity does not solely lie in the number of processes identified but also the naming conventions, and attendees. Eight different rounding processes were identified: general ward round, multidisciplinary, consultant, teaching, post-take, traditional, working, and review of the ward. One process could be referred to by different names, for example, consultant or attending round however the principles were similar. For all the rounds identified in the literature review, three different purposes were revealed: to plan patient care; educate clinicians; and a combination of planning and education. Planning care, providing and receiving education was primarily referred to as a medical activity.

The findings showed variation in the attendees and their roles in each rounding process. Medical officers attended all but one of the rounds. Nurses were the next most likely attendees followed by allied health professionals. Pharmacists were the most commonly nominated allied health professional present. Patients were rarely described as participants despite being the

focus of rounding activities. Roles were more explicitly described when they were held by medical officers. Nursing roles were less defined and centred around patient advocacy and case presentation. Allied health professionals carried out discharge planning responsibilities. Patients' roles were to discuss treatment goals, discharge plans, and raise concerns with the healthcare team.

The findings reflect the variation in processes undertaken within healthcare environments. It is expected that health professionals working on a ward would undertake more than one rounding process. To ensure ward rounds meet the needs and expectations of health professionals and patients, a shared understanding of processes and purpose of each is necessary. Building upon earlier studies into healthcare perception of the IBRs, the inclusion of allied health professionals in our study added to the literature by identifying consistencies between nursing and allied health interdisciplinary teamwork during rounds.[50]

8.3.2 Which characteristics of teamwork enable and challenge interdisciplinary ward rounds?

Despite the number of different rounding processes and attendee combinations, ward rounds have teamwork as a commonality. High functioning teams are essential to highly effective ward rounds.[24]

There was agreement within the interdisciplinary team on the characteristics that support and challenge teamwork. Enablers of teamwork were effective communication, shared understanding of patient goals, and of each other's roles. The challenges were: ineffective interdisciplinary communication; individual personal characteristics (communication styles, perceived respect and feeling valued); and lack of understanding about roles and

responsibilities, and organisational structure. Additional challenges reflect those identified in the study investigating the benefits and challenges to IBRs, being: time due to increase patient acuity which affects communication styles and staff morale; disagreement in treatment planning and a medically dominated approach; and lack of leadership.

Positive experiences of teamwork were described when health professionals felt valued, patient safety was the focus of care, there was structured communication, and good leadership. A shared understanding of factors that contribute to, or hinder, effective teamwork can be carried through into team-based ward rounds.

8.3.3 How do clinicians describe the ward round processes on their wards?

To understand the activity of ward rounds, clinicians were asked to identify the rounds they undertook, who attended them, and how effective communication was about patient care.[45] In both specialties there was more consistency between intradisciplinary than interdisciplinary team members, for example nurses and allied health professionals in acute medicine nominated IBRs whereas medical officers did not.[47] There was little agreement amongst the interdisciplinary teams on the type of rounding processes undertaken on their wards, for example in acute medicine no single round was nominated by all health disciplines.[47]

Clinicians working in medical and rehabilitation specialties each nominated eight rounding processes undertaken on their wards. However, despite being provided definitions of each process, there was still disparity in the types of rounds identified and chosen and by whom. Within the medical wards, eight rounds were chosen however there was no single process nominated by all three disciplines. In rehabilitation, eight rounding processes were also nominated. Adding to this confusion, many participants nominated more than one type of

round. Unlike clinicians working in medical specialties, multidisciplinary and consultant rounds were nominated by all rehabilitation health disciplines. There were similarities between nurses and allied health professionals. In contrast to medical officers, both nursing and allied health disciplines identified the morning patient flow meeting (the journey board) as a ward round.

There was disparity in who attended rounds. Each health professional reported their own attendance and that of their colleagues. The findings did show rounds remain a medically dominated activity. The medical officer was the most common discipline to be nominated as routinely attending rounds. Just over half of allied health clinicians self-reported attending rounds despite medical officers reporting allied health clinicians did not routinely attend.

The findings showed that across and within healthcare teams there is little standardisation in the way health professionals perceived rounding processes. This can influence expectations health professionals have of rounds, as individual staff members and collectively as a health service, if they are being measured against rounds defined in academic literature and not practice. This in turn can impact on health professionals knowing when they need to attend rounds and how best to prepare for care planning that will occur. To have input into decision making and contribute to rounds clinicians need to be prepared and understand their roles and responsibilities.[33]

Despite the inconsistencies, there was overall satisfaction with communication around patient care. This may reflect that ward rounds are not the only form of patient care planning activity Others include corridor conversations, and documentation both formal and informal.[45] Yet, communication and care planning are a leading cause for system breakdowns in adverse events

in NSW public hospitals.[92] If communication is already perceived as effective and meeting clinicians needs, there may be no impetus to change the status quo.

8.3.4 What do clinicians perceive as the benefits and challenges to interdisciplinary bedside rounds?

There was a relationship between the benefits and challenges identified despite each having a different orientation. Benefits were patient-focused and showed a desire to put the patient at the centre of care delivery. There was recognition that interdisciplinary teamwork supported person-centred care. Benefits included: effective communication between the healthcare team and with the patient; efficient workflow supported by improved communication and care planning; and increased morale through collaborative teamwork.

Challenges were considered more from an organisation or service perspective. From each benefit recognised, there was a counter-barrier. Clinicians identified one benefit was having the whole team present to discuss the advantages of an IBR, yet increased discussion was perceived as a challenge to time management. Allied health reported parallel processes already in place to plan patient care that negated the need for IBRs, for example case conferences and journey board.[50] Nurses and allied health professionals both nominated the journey board as a rounding process while medical officers did not.[45]

Medical officers stated they desired interdisciplinary collaboration. Yet, nurses and allied health professionals were reluctant to provide information, based on the experience of it being undervalued. Although structured communication tools can facilitate the delivery of information,[62] they are competing against an underlying hierarchical healthcare culture.[6,49,50]

The desire to participate in IBRs is evident but challenges are often very tangible and may thus be more influential. IBRs may require system changes to workflow practices. Cultural changes may be needed to facilitate collaboration and a sense of value amongst ward round participants.

8.3.5 What are patients' experiences of ward rounds?

Our findings showed one third of patients interviewed were unable to describe a ward round. Nevertheless, it is a phrase heard by patients on wards throughout hospitals to explain when the healthcare team will be attending them on the ward. There was little difference between the experiences of patients from the medical and rehabilitation specialties. Patients revealed a desire to be involved in rounds and recognised it as a collaborative partnership between themselves and health professionals. Patients wanted to speak to the most senior medical officer in the healthcare team, as they were perceived as the decision makers.

Most patients believed it was not necessary to have nurses and allied health clinicians present during the round. This may be a result of nurses not routinely attending rounds.[51] This can unwittingly contribute to nursing and allied health clinicians' concerns about a medical hierarchy influencing ward round participation. There is a focus on IBRs and interdisciplinary teamwork by health professionals –interdisciplinary understanding of roles and responsibilities is an important characteristic of a teamwork.[49] Interdisciplinary rounds bring together health professionals who each have a different care focus.[54] Investigating how well health professional roles are understood by patients may help to provide patients with confidence when discussing their care with a range of disciplines. The benefits of having the different health professionals present on rounds may not be understood by patients. Identifying how different professionals contribute to patient care beyond the ward round activity may enhance patients' understanding of their care processes.

Patients from rehabilitation wards had a longer length of stay than those in acute medicine, although this did not have any influence of the patient's contribution to their ward rounds.[51] However, patients with chronic care conditions who used hospital services more frequently than those with acute conditions revealed differences in their understanding and approach to ward rounds. High users of the health system were "self-taught" in how to navigate ward rounds, what to expect and how to have their own needs met. This understanding and self-managing behaviour was achieved over multiple admissions and exposure to a variety of ward rounds. This finding adds to a scant body of literature investigating patient self-management during inpatient stays. While chronic disease patients are known to benefit from inpatient education programs,[93] clinicians remain concerned that patients' usual self-management skills, including self-advocacy, are disrupted by hospital routines and restrictions.[94] Our findings indicate that patients who frequently experience inpatient episodes of care may be better equipped to take a greater role in their own inpatient care.

Contributing factors to a patient's participation of ward rounds are the patient themselves and their previous experience of rounds. Through experience patients learn how to communicate with medical officers and build confidence in taking more control in the discussion. Education on the purpose of ward rounds empowers patient participation. Just as clinicians are encouraged to prepare for rounds,[14] patients and family could benefit from learning how they can be involved, including which questions they may be asked and which they want to ask. This could ensure greater equity between patients who are frequent users of the health system and those who are not.

8.3.6 Overarching research question: what influences clinicians' and patients' involvement in ward rounds?

The overarching research question asked: what influences clinicians' and patients' involvement in ward rounds? Using a triangulated exploration, this thesis analysed influencing factors on ward round contribution from a unique perspective: the impact of multiple rounding processes; clinicians' perspectives; and patients' perspectives. The analysis provided both system and operational insights into ward rounds.

Three key influences shape clinicians' and patients' ability and willingness to be involved in ward rounds. These are: the health service; health professionals; and patients. Five themes emerged as contributing factors that influence participation: understanding and recognition of rounding processes; culture; behaviour; person-centred care; and organisational challenges.

The health service influences both health professionals and patient involvement. The flow on effects of service level decisions directs how health professionals conduct ward rounds. This can be at process level to organisation and workforce behaviour. However, clinicians also have a level of control on their own willingness and ability to participate in rounds despite organisational challenges. Patients have the least amount of influence of ward round involvement. Even so, patients can also have a level of control over their willingness to be involved. Empowering patients' early involvement in rounds (rather than waiting for them to learn over time) may be supported by a health service that supports clear rounding process guidelines and culture, and interdisciplinary teamwork to facilitate shared decision making. When given the opportunity and the experience, patients demonstrate a desire and ability to be involved in ward rounds.

8.4 Limitations

Some of the limitations of this study relate to the site chosen. This study was conducted a time of significant change for the participating health organisation. The original research and data collection were begun, based on the implementation of SIBR. Unforeseen circumstances resulted in the SIBR project not moving forward within our study timeframe. This changed the focus being a pre and post implementation study of SIBR, to one that considered influencing factors to health professionals and patient involvement in rounds. This change in direction enabled a more global view of ward rounds and the systems and processes that support them. The study recognises that more than one rounding process may be undertaken on a ward.

The study was conducted at a single site. Health services have different patient demographics. It is possible patient experiences identified in this study may differ to those cared for in other health services. Exploring this potential limitation may contribute valuable information in the field of health literacy.

While the clinician survey had a high response rate, the number of patients involved was small. Nevertheless, there was equal representation of participant groups across the four wards involved in the study. However, if patients were frail-aged, or acutely unwell, deeper exploration into their experiences of ward rounds was limited by their capacity to participate. The ability and confidence for people to engage with health professionals improves as health literacy improves. Patients in the study were not asked their level of education or level of health literacy which may have influenced the findings.

Unfortunately, the exact number of papers excluded at each review point in the initial literature is unavailable. Nevertheless, the study has been peer-reviewed and published in an internationally recognised healthcare journal which indicates the rigour of the review.

8.5 Avenues for further research

The results of this series of studies indicate a need for further research into person-centred rounding. Paradoxically, healthcare is moving towards more person-centre care, yet patients have the least power over their involvement in rounds. Rounds continue to be medically led. Facilitating a more interdisciplinary team discussion could be incorporated into communication tools such as ISBAR by adding "discussion" as a prompt. Care teams can collaborate to identify the dimensions of teamwork they value in ward rounds using activities such as the "Effective Team Characteristics Within Our Ward Round" tool. Providing standardised definitions of ward rounds and care models undertaken could provide a common language for health professionals within a health service. Turning the conversation around to invite the patient to speak first during a round, or even to lead the discussion is an approach that some patients may prefer. Exploring patient empowerment tools such as a patient ward round note pad may provide benefits for patients, families, and clinicians. Investigating strategies for educating patients and their carers on ward rounds such as using peer education may facilitate patient involvement. Nevertheless, research on patient-led ward rounds in medical and rehabilitation units is lacking, presenting an opportunity to study this concept and practice of including patients further. Influencing factors on ward round participation requires further investigation across a range of hospital specialties and patient cohorts.

Beyond the established interdisciplinary team, there is value in exploring the challenges new and consultative team members experience integrating into established rounding processes.

Nurses and allied health professionals reported that attending rounds impedes their ability to provide routine patient care.[48] Exploring the intersection between routine care and ward round care planning may provide opportunities to encourage interdisciplinary attendance. The 'Hierarchy of Influence on Ward Round Participation' model could be used for developing more collaborative approaches to person-centred care during ward rounds.

8.6 Conclusion

This study investigated the influences on clinicians' and patients' participation in ward rounds. The thesis contributes to our understanding of how clinicians and patients perceive, engage in, and are hindered or supported by the health service in the care planning activity of a ward round. Important contributions have been made to the research evidence base including identifying the challenges between theoretical and practical clinical context of ward rounds processes; and preferred patient communication process with health professionals. The model derived, a 'Hierarchy of Influence on Ward Round Participation' shows the influencing factors on clinicians' and patients' participation in ward rounds. Insights gained from this study may assist healthcare policy-makers, executives and frontline professionals to identify how clinicians and patients can be more effectively supported to ensure high quality care.

Appendices

Appendix 1 Peer reviewed conference abstracts and oral presentation title pages

Appendix 1A	"Ward rounds: opportunities for integrating person-centred care"
Appendix 1B	"What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?"
Appendix 1C	"Breaking sown silos starts at the bedside"

Appendix 2 Peer reviewed conference abstracts and poster presentations

Appendix 2A	"Benefits and Challenges of Interdisciplinary Bedside Rounds: Reducing Silos"
Appendix 2B	"Patient-Clinician Communication During Ward Rounds."
Appendix 2C	"Interdisciplinary Communication: Exploring Clinicians' and patients' Perceptions of Roles During Rounds."
Appendix 2D	"Evaluating the recruitment strategies for a complex multidisciplinary quality improvement project"
Appendix 2E	"How many rounding processes can a medical ward have?"
Appendix 2F	"A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round."

Appendix 1A Ward rounds: opportunities for integrating person-centred care

Walton V; Hogden A; Long JC; Johnson J; Greenfield D, 2019, "Ward rounds: opportunities for integrating person-centred care", *2nd Asia Pacific Conference on Integrated Care: Achieving better value for people and populations* Melbourne, Australia, 11-13 November 2019.

Ward rounds: opportunities for integrating person-centred care.

Introduction

Ward rounds present an opportunity for patients to be involved in their treatment planning. However, often this opportunity is not realized, thereby missing a vital opportunity to deliver integrated person-centred care. Multiple factors influence whether person-centred care rounds are achieved, including: being invited into the discussion through clinician questions; clinicians' language use; and the physical capacity of patients to discuss their care. The study aim was to explore patient experiences of rounds to identify how rounds facilitate and integrate patient-centred care and reveal potential for improvement from the patients' perspective.

Methods

A multi-method study across two inpatient specialties was conducted in a metropolitan hospital in Sydney, Australia. Staff from two acute medical and two rehabilitation units participated. Ward rounds were observed, and then semi-structured interviews were conducted with patients from each round observed. The focus of the observations were processes and patterns of communication. Interview questions included: description and purpose of ward rounds, attendees and roles; advantages and disadvantages of rounding processes; collaboration

between the healthcare team and patient; and suggestions on how rounding processes could be improved. Descriptive and thematic analysis of observations and interviews were undertaken.

Results

Similar experiences of ward rounds were described by the 14 participants observed and interviewed. Participants described rounds as an opportunity for patients and doctors to interact but designed to meet the needs of the healthcare team. Those with chronic conditions or frequent admissions described greater satisfaction with rounds as they had learnt how to prepare for rounds and discussions. This experience enabled participating patients to engage in greater conversation with the medical officers about their medical condition and goals. Just under half (43%) of participants reported not understanding the doctors' medical terminology which restricted their ability to participate in conversations. Participants acknowledged hospitals were busy environments and unpredictable but did suggest preparing patients for the discussion and providing a time for rounds would be beneficial to reduce anxiety around the unknown.

Discussions

Although ward rounds are an opportunity to deliver person-centred care, patient experiences expose the challenges for healthcare teams to deliver it. Patient uncertainty around rounding expectations results an imbalance in the clinician–patient relationship. Uncertainty can impact on patients' abilities to participate, in turn affecting their satisfaction.

Conclusion

Clinicians influence person-centred care during rounds through language and relationship building. Patients become more independent and take on responsibility during the round the

more exposure they have to them. Providing patients with knowledge on what to expect during a round facilitates inclusion in conversation and leads to more person-centred rounds.

Lessons learned

Patients can offer unique insights in how to integrate the "person-centred" aspect into rounds.

Limitations

Participants were frail aged or acutely unwell which meant greater exploration into their responses and longer interview times were not appropriate.

Suggestions for future research

Exploring patient experiences can shape how ward rounds can be more person-centred. Understanding perspectives of both patients and clinicians can lead to more collaborative care planning processes.

Ward rounds: opportunities for integrating person-centred care

Walton, V.,[1] Hogden, A., [1] Long, JC.,[2] Johnson, J.,[3] and Greenfield, D.[1]

[1]Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia
[2]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[3]Center for Healthcare Studies, Northwestern University, Chicago, United States

TASMANIAN SCHOOL OF BUSINESS & ECONOMICS

Australian Institute of Health Service Management

Appendix 1B What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?

Walton V; Hogden A; Long JC; Johnson J; Greenfield D, 2019, "What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?", *2nd Asia Pacific Conference on Integrated Care: Achieving better value for people and populations* Melbourne, Australia, 11-13 November 2019.

What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?

Introduction

Integrated care is supported by teams with transparent communication processes, good strong leadership, and common goals to deliver person-centred care. Ward rounds are a setting where effective teamwork facilitates safe treatment planning and care delivery. The study aim is to explore characteristics of interdisciplinary teams that support person-centred care during ward rounds.

Methods

The study was conducted in a teaching hospital in metropolitan Sydney, Australia. A survey was administered to frontline clinicians working in two medical and two rehabilitation wards. Questions were developed from research literature and the industry experience of the study team. Multichoice and free text questions targeted enablers and challenges to effective teamwork, and exemplars of positive teamwork. Descriptive and thematic analyses were conducted.

Results

Seventy-seven clinicians participated (93% response rate - 34% from acute medical and 66% from rehabilitation specialties). Nursing represented 60% of participants, allied health clinicians 26%, and medical officers 14%. Findings across the two specialties were similar. Participants reported:

Enablers of teamwork

The three most commonly nominated enablers were: effective communication, a shared understanding of patient goals, and the clinical roles within the team. The greatest difference between the specialties was the use of a medically-led model: 40% of medical officers from rehabilitation nominated this as an enabler compared to none from acute medicine. No additional enablers were nominated by clinicians.

Challenges to teamwork

The three most frequently nominated challenges were: ineffective interdisciplinary communication; individual personalities; lack of understanding about roles and responsibilities. Additional challenges were nominated in the free text section. These were grouped into three themes: time pressures, interdisciplinary team communication, and team morale. Second, disagreements in treatment planning. Third, a lack of leadership from senior team members.

Positive experiences of teamwork

There was consistency between clinicians' experiences. Themes were: a specific plan that was communicated clearly; feeling valued; understanding interdisciplinary roles and expectations; a defined and effective leader; and patient-focused care.

Discussions

Team characteristics that support person-centred interdisciplinary ward rounds are common across all health disciplines. To ensure safe planning with patients during ward rounds, teams must first be able to work together to communicate effectively. Understanding one another's roles and responsibilities ensures the right people at the right time are contributing and planning during rounds. Feeling valued empowers people to speak freely in a ward round, which facilitates patient safety.

Conclusions

Ward rounds require interdisciplinary teams to come together for the common goal of planning safe, quality care. Commonalities in enablers and challenges between intra- and interdisciplinary teams and specialties suggest teamwork characteristics are interchangeable across ward settings. Building resilient teams through shared values, leadership, respect, and confidence can support integrated person-centred care within the ward round environment.

Lessons learned

Commonalities in enablers and challenges between intra- and interdisciplinary teams and specialties suggest teamwork characteristics are interchangeable across ward settings.

Limitations

The study was at single site which is an exemplar of other acute care settings.

Suggestions for future research

Exploring the delivery of person-centred care during other processes such as education rounds would identify any commonalities.

What supports interdisciplinary teamwork during ward rounds to deliver person-centred care?

Walton, V.,[1] Hogden, A., [1] Long, JC.,[2] Johnson, J.,[3] and Greenfield, D.[1]

[1]Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia
[2]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[3]Center for Healthcare Studies, Northwestern University, Chicago, United States

TASMANIAN SCHOOL OF BUSINESS & ECONOMICS

Australian Institute of Health Service Management

Appendix 1C Breaking sown silos starts at the bedside

Walton V; Hogden A; Long JC; Johnson J; Greenfield D, 2018, "Breaking sown silos starts at the bedside", *35th International Safety and Quality Conference: Learning at the system level to improve quality and safety*, International Society for Quality in Health Care, Kuala Lumpur, Malaysia, 23-26 September.

BREAKING DOWN SILOS STARTS AT THE BEDSIDE.

Objective: Ward rounds are an opportunity for clinicians and patients to interact and plan patient care. A literature review identified eight types of rounding processes, with varied aims and representation from clinical professions. This study examined which of the eight types of rounds clinicians chose as most similar to their own ward's process; which team members attended rounds; and overall effectiveness of team communication.

Method: Surveys were conducted with medical officers, nurses and allied health clinicians from acute medical and rehabilitation specialties. Definitions of rounding processes were provided for consistency. Effective communication was self-defined by respondents. Survey findings were derived using descriptive and comparative analysis.

Results: The response rate was 93% (77/83 invited participants), with 34% from acute medicine and 66% from rehabilitation. Nursing represented 60% of participants, allied health clinicians 26%, and medical officers 14%.

Rounding processes: Within each speciality, the interprofessional team had different understandings of the rounding processes that occurred. However, between health professional disciplines there was more consistency. While each participant only chose one or two

processes, there was no agreement in acute medicine across all three professional groups. All eight processes were selected, showing an apparent lack of agreed process and purpose of rounds. Health professionals from the rehabilitation speciality also nominated all eight rounding processes. Two types of rounds – multidisciplinary and consultant – were nominated by all three professional groups.

Attendance at rounds: There was considerable variation in the perceptions of attendance. Clinicians reported their own attendance at rounds at a much higher rate compared to the perceptions their colleagues had of that discipline. No difference was found between acute medicine and rehabilitation despite the former nominating two common processes. Medical officer attendance was the most consistently reported compared to nursing and allied health clinicians.

Communication: Overall, respondents from both specialties reported 'effective' interdisciplinary communication around care planning. Medical officers were more positive about communication with nurses and allied health clinicians than they were with medical officers. Only four rehabilitation respondents reported episodes of 'ineffective' communication.

Conclusion: No single rounding process meets the needs of patient care planning and healthcare team members. Variation in process identification can lead to clinicians being unaware who attends rounds, affecting the interdisciplinary team's perceptions of when and why patients are reviewed. Investigating ward based interdisciplinary teams will provide opportunities to improve clinicians' shared understanding of interdisciplinary care and delivery

needs so that round attendance and communication can be more structured and consistently planned, to quality of care provided to patients.

BREAKING DOWN SILOS STARTS AT THE BEDSIDE

Walton, V.,[1] Hogden, A., [3] Long, JC.,[1] Johnson, J.,[2] and Greenfield, D.[3]

[1] Australian Institute of Health Innovation, Macquarie University, Sydney, Australia

[2] Center for Healthcare Studies, Northwestern University, Chicago, United States

[3] Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia

Appendix 2A Benefits and Challenges of Interdisciplinary Bedside Rounds: Reducing Silos

Walton V; Hogden A; Long JC; Johnson J; Greenfield D, 2018, "Benefits and challenges of interdisciplinary bedside rounds: reducing silos", *35th International Safety and Quality Conference: Heads, Hearts and Hands "Weaving the Fabric of Quality and Safety*, International Society for Quality in Health Care, Kuala Lumpur, Malaysia, 23-26 September.

BENEFITS AND CHALLENGES OF INTERDISCIPLINARY BEDSIDE ROUNDS: REDUCING SILOS.

Objective: Clinician representation at bedside rounds varies in membership and attendance leading to disconnection in interdisciplinary teamwork. This study explores clinicians' perceptions of benefits and challenges to interdisciplinary bedside rounds (IBRs).

Method: Medical, nursing and allied health professionals from acute medical and rehabilitation specialties were surveyed. Definitions of the rounds were provided, with responses in free text. A thematic approach to analysis was undertaken.

Results: A response rate of 93% was achieved, with 77/83 clinicians completing the survey. Response rate varied across professions (acute medicine, 34%; rehabilitation, 66%; nursing, 60; allied health professionals, 26%; medical officers, 14%).

Respondents identified more individual benefits than challenges to IBRs. While there were differences between professional groups about IBRs, benefits and challenges were consistent across specialties and clinicians. Benefits were: 'being on the same page'; 'patient focus'; and

‘holistic care planning’. ‘Being on the same page’ was the most common theme. Respondents described improved communication between the interdisciplinary team and with the patient. This led to more cohesive teamwork and improved workflow efficiencies. Receiving information about patients in “real time” was important to staff, leading to more consistent and accurate information exchange. Respondents perceived ‘patient focus’ as patients feeling cared for and having confidence from seeing a united care team. Patients and family members were viewed as better informed when receiving information about their progress from all team members concurrently, with issues and questions addressed together as a team. ‘Holistic care planning’ focused on interdisciplinary input into patient’s care plan and discharge planning, with plans more likely to be current and relevant. Nursing and allied health clinicians reported satisfaction in being involved in planning care.

Challenges to IBRs were: ‘time’; ‘workforce’; and ‘patient factors’. Fourteen respondents reported no disadvantages to IBRs. ‘Time’ was the main challenge, with the view put forward that having multiple clinical opinions could increase discussion time. Respondents questioned whether IBRs were necessary, as time was already spent in parallel processes such as case conferences and journey boards. Clinicians attending IBRs, but not involved in the care of every patient, said some discussions may be irrelevant, leading to loss of clinical time. ‘Workforce’ related to the practicality of attending IBRs. Clinicians covering multiple wards indicated difficulty consistently being present, while finding an agreed timeslot was considered challenging. Moreover, working in a hierarchical workforce lead to some respondents feeling undervalued, with a reluctance to express opinions. ‘Patient factors’ included barriers to patient inclusion such as patient anxiety due having multiple clinicians at the bedside in a small environment.

Conclusion: IBRs break down silos by encouraging clinicians to learn the role each team member has in patient care. IBRs are an opportunity to improve teamwork challenged by traditional hierarchical practices. Consistency in participants' perceptions, and awareness of the benefits and challenges of IBRs provides a platform to address clinicians' concerns while promoting the positive aspects of this care model.

BENEFITS AND CHALLENGES OF INTERDISCIPLINARY BEDSIDE ROUNDS:REDUCING SILOS

MACQUARIE University
SYDNEY · AUSTRALIA

ISQUA18-1230

Walton, V.,[1] Hogden, A.,[1] Long, JC.,[1] Johnson, J.,[2] and Greenfield, D.[3]
[1] Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[2] Center for Healthcare Studies, Northwestern University, Chicago, United States
[3] Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia

OBJECTIVE

Clinician representation at bedside rounds varies in membership and attendance potentially leading to disconnection in interdisciplinary teamwork.

This study explores clinicians' perceptions of benefits and challenges to interdisciplinary bedside rounds (IBRs).

METHOD

Medical, nursing and allied health professionals working in acute medical and rehabilitation specialities were surveyed. Participants were provided a definition of an IBR[1] and asked to nominate up to five challenges and benefits. Responses were free text. A thematic analysis was used to code and group responses t develop concepts and themes.

FINDINGS

- Response rate was 93% (77/83) (Table 1)
- More individual benefits were nominated than challenges but three key themes apiece were identified
- Benefits and challenges were interrelated
- Benefits focused around patient centred care
- Challenges focused on more process issues

Table 1: Health survey participation

HEALTH PROFESSIONAL	N (%)
Nursing	46 (60)
Allied health professional	20 (26)
Medical officers	11 (14)

Benefits

Table 2: Benefits of IBRs

THEMES	KEY ELEMENTS
Being on the same page	• Direct team communication • A more cohesive health care team • Medical officers accessible to other clinicians • Improved teamwork
Focusing on patients	• Patient confidence in seeing team working together • Patient and family better informed • Individualised care
Holistic care planning	• Improved discharge planning • Interdisciplinary information • Current and relevant plan

Challenges

Table 3: Challenges of IBRs

THEMES	KEY ELEMENTS
Time	• Takes clinical time from other patients • Multiple opinions will increase discussion time • Case conference and journey board are parallel processes to IBRs • Competing priorities
Teamwork	• Logistics of coordinating teams • Team structures not uniform • Some discussions and patient irrelevant to different clinicians • Perception of hierarchical communication
Patients' factors	• Uncomfortable for patients • Too many around bed space

CONCLUSION

Clinicians' understanding of the benefits and challenges of IBRs promotes opportunities for building stronger teamwork to improve patient care. IBRs help clinicians to break down silos by encouraging them to learn the role each team member has, and improve their collaboration for patient care planning. Moreover, IBRs create opportunity to improve teamwork that is challenged by traditional hierarchical practices. Thus, understanding clinicians' perceptions of the benefits and challenges of IBRs provides a platform to address clinicians' concerns while promoting the positive aspects of this care model.

Contact details: Victoria Walton
Email: victoria.walton@hdr.mq.edu.au

Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: literature review. Int J Health Care Qual Assur. 2016;29:364-79.

Appendix 2B Patient-Clinician Communication During Ward Rounds

Walton V; Hogden A; Long, JC; Johnson J; Greenfield D, 2017, "Patient-Clinician Communication During Ward Rounds", *International Conference on Communication in Healthcare & Health Literacy Annual Research Conference*, Academy of Communication in Healthcare, Baltimore, United States, 8 – 11 October 2017.

PATIENT-CLINICIAN COMMUNICATION DURING WARD ROUNDS

Introduction

Hospital rounding processes provide patients with an opportunity to interact and plan care with physicians, nurses, and allied health clinicians. This study identified rounding processes, the roles of patients and clinicians, and the influence these have on patient-clinician communication.

Methods

A literature search using the following search terms was undertaken: face-to-face ward rounds in medical units; peer-reviewed journals and government publications written in English; full text articles; and published 2000-14. Articles were analysed for: round classification; clinicians' and patients' involvement; and patient-clinician communication during rounds.

Results

From 39 studies, eight classifications of rounds were identified: ward; multidisciplinary; consultant; teaching; post-take; traditional; review of the ward; and working rounds. Two of these processes were found to promote patient involvement in rounds and facilitate patient-clinician communication: multidisciplinary and ward rounds.

Studies of multidisciplinary rounds revealed patient communication only from the perspective of clinicians. Communication between patients and clinicians was inferred from this role description. Patients took active roles by identifying their treatment goals and participating in discharge planning. Clinicians encouraged patients to raise concerns with the team during the round.

Studies of ward rounds explored communication from the patients' perspective. Patients reported difficulty in understanding and interpreting conversations with physicians. The use of medical jargon was reported to be confusing, with concern that physicians talked about patients rather than directly with them. Having a nurse present was important to patients to convey information from physicians into easily understood language.

Discussion

Rounding processes have evolved to meet the needs of clinicians as care providers, educators and teachers. However, only two processes appear to meet the communication needs of patients. Recognising how different processes affect interaction between patients and clinicians prompts development of communication strategies to promote the patient voice during rounds.

Implication

Developing patient-centred communication strategies during rounding processes could improve patient-clinician communication and empower patient involvement in their healthcare.

PATIENT-CLINICIAN COMMUNICATION DURING WARD ROUNDS

Abstract ID: 584

MACQUARIE University

Walton, V.,[1] Hogden, A.,[1] Long, JC.,[1] Johnson, J.,[2] and Greenfield, D.[3]

[1]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[2]Center for Healthcare Studies, Northwestern University, Chicago, United States
[3]Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia

OBJECTIVE:
Hospital rounding processes provide patients with an opportunity to interact and plan care with physicians, nurses, and allied health clinicians. Patients report increased an improved experience and willingness to participate in rounds when clinicians actively include them[1].

This study identified rounding processes, the roles of patients and clinicians, and the influence these have on patient-clinician communication.

METHOD:
A literature search was undertaken of academic works published 2000-2014.

Articles were analysed for: round classification; clinician and patient involvement; and patient-clinician communication during rounds.

RESULTS:
From 39 studies, eight classifications of rounds were identified[1] (Table 1). **Two of these processes were found to promote patient involvement in rounds, and facilitate patient-clinician communication: multidisciplinary and ward rounds.** Ward rounds reported communication from the patient's perspective. The multidisciplinary round reported patient communication from the clinician perspective.

Table 1: Round identification and descriptions

Round	Description
Ward	A generic round that plan patient care and provide teaching but has no specific process
Multidisciplinary	Key clinicians involved in the patient's care meet with the patient and plan of care
Consultant	Led by a senior medical officer to plan care or/and provide education to junior medical officers.
Teaching	Junior medical staff are tested on their understanding and knowledge of patient conditions
Post-take	The consultant reviews new patients admitted overnight or during the day
Traditional	Clinicians (may or may not include interdisciplinary representation) to plan care and teach
Working	The medical team review patient's condition, progress and plan their care
Review of ward	Led by Nursing Unit Manager and attended by nursing and allied health clinicians with no specific process defined.

WARD ROUND
Reported from the patient's perspective:
- Difficulty interpreting discussions with physicians
- Confusing medical jargon
- Physicians talk about patients, not to patients
- Having a nurse present was important, for interpretation of medical information into layman's language

MULTIDISCILINARY
Reported from the clinician's perspective:
- Rounds facilitated patient participation in care planning - treatment goals and discharge plans
- Multidisciplinary team presence encouraged patients to ask questions

DISCUSSION:
Rounding processes have evolved to meet the needs of clinicians as care providers, educators and teachers. However, only two processes appear to meet the communication needs of patients. Clinician and patient interactions will differ depending on the rounding processes, but they need to be considered during all rounding processes. This will encourage and support the patient's voice during their healthcare journey.

IMPLICATION:
Developing patient-centred communication strategies during rounding processes could improve patient-clinician communication, and empower patient involvement in their healthcare.

1 Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds: participants, roles and perceptions. Literature review. International Journal of Health Care Quality Assurance. 2016;29(4):366-376.

Contact details: Victoria Walton
Email: victoria.walton@hdr.mq.edu.au

ICCH&HARC
October 8-11, 2017

Appendix 2C Interdisciplinary Communication: Exploring Clinicians' and patients' Perceptions of Roles During Rounds

Walton V; Hogden A; Johnson J; Greenfield D, 2017, "Interdisciplinary Communication: Exploring Clinicians' and patients' Perceptions of Roles During Rounds", *34th International Safety and Quality Conference: Learning at the system level to improve quality and safety*, International Society for Quality in Health Care, London, England.

INTERDISCIPLINARY COMMUNICATION: EXPLORING CLINICIANS' AND PATIENTS' PERCEPTIONS OF ROLES DURING ROUNDS.

Objective: Understanding team member's roles in a rounding process ensures patient and clinician knowledge is utilised in care planning. This study explored perceptions health professionals and patients have of each other's role during rounding processes.

Method: A literature search was undertaken, using inclusion criteria including: face-to-face ward rounds in medical units; peer-reviewed journals and government publications written in English; full text articles; and published 2000-14. Each article was analysed for round classification and interprofessional descriptions of roles.

Results: A total of 39 papers met the study criteria. Eight different classifications of rounds were identified: ward; multidisciplinary; consultant; teaching; post-take; traditional; working; and review of the ward. Only the ward and multidisciplinary rounds provided insight into the opinions clinicians and patients have of each other's involvement during rounds.

Ward rounds: Doctors acknowledged benefits to including nurses, but lack of physical space made inclusion difficult. Other clinical disciplines were not seen as beneficial. Doctors reported concerns at having family members present, as it may increase the round duration although nurses believed it facilitated communication. Nurses believed they should be included but considered themselves disempowered by doctors. They were also unsure how allied health clinicians would contribute. Allied health clinicians described feeling disempowered by doctors. Patients found doctors' use of medical jargon confusing and were concerned when doctors talk about them rather than directly to them. The number of attendees during the round could be intimidating, and there was uncertainty about the roles of all participants. Having a nurse present was important to patients to convey information from doctors into easily understood language. Patients considered it easier to connect with nurses than with doctors.

Multidisciplinary rounds: Doctors and nurses believed using structured communication tools improved collaboration and reduced disagreements in care planning. Doctors had greater trust in nursing knowledge as information presented in a standardised framework. Both thought including a pharmacist improved pharmacology knowledge. Nurses found inclusion of allied health clinicians beneficial, to care and discharge planning. It enabled learning and understanding skills of different team members. Allied health clinicians described a lack of respect from doctors, but overall collaboration between disciplines during rounds provided a supportive environment. Patients were described as being engaged with health professionals by taking a more active role in care planning.

Conclusion: Despite progress towards more collaborative care, medicine remains the most recognised professional group in a ward round. While nurses, allied health clinicians, and patients desire involvement the traditional hierarchy and responsibility remains challenging.

Appropriate inclusion in care planning is value giving to clinicians as it recognises skill and treatment options. Patients involvement precipitates a more positive experience and willingness to participate in treatment plans. Gaining an understanding of each other's roles, expectations, and contribution to care planning offers an opportunity for efficient and quality care delivery.

ISQUA17-2306

INTERDISCIPLINARY COMMUNICATION: EXPLORING CLINICIAN AND PATIENT PERCEPTIONS OF ROLES DURING ROUNDS.

MACQUARIE University

Welton, V.,[1] Hogden, A.,[1] Johnson, J.,[2] and Greenfield, D.[3]
[1]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[2]Center for Healthcare Studies, Northwestern University, Chicago, United States
[3]Australian Institute of Health Service Management, University of Tasmania, Sydney, Australia

OBJECTIVE

Understanding team members' roles in a rounding process ensures patient and clinician knowledge is utilised in care planning. **This study explored the perceptions clinicians and patients have of each other's role during rounds.**

METHOD

A literature search was undertaken, using inclusion criteria including: face-to-face ward rounds in medical units; peer-reviewed journals and government publications written in English; full text articles; and published 2000-14. Articles were analysed for round classification, and interdisciplinary descriptions and opinions of team member's roles.

FINDINGS

39 papers

Rounding processes identified

Ward | Interdisciplinary | Consultant | Teaching | Post-take | Traditional | Working | Review of ward

Analysis of each rounding process for descriptions of interdisciplinary opinions on each other's roles and involvement during rounds

Ward rounds

Doctors:
- Saw benefits to having nurses present but not allied health clinicians
- Not enough physical space for all clinicians
- Having family present may increase round duration

Nurses:
- Feel disempowered by medical officers
- Uncertain how allied health clinicians would contribute
- Family should be present

Allied health clinicians:
- Feel disempowered by doctors

Patients:
- Find medical officers using jargon confusing
- Concerned that doctors talk about them rather than to them
- Intimidated by multiple attendees
- Uncertainty at the roles of all attendees
- Nursing required to translate discussion into layman's language
- Easier to connect with nurses

Interdisciplinary rounds

Doctors:
- Using a structured communication tool improves collaboration
- Trusted information presented by nurses in a standardised framework
- Pharmacist provides specialises knowledge on pharmacology
- Patients take an active role in care planning

Nurses:
- Using a structured communication tool improves collaboration between team members
- Pharmacist provides specialises knowledge on pharmacology
- Inclusion of allied health clinicians important to understand different roles and skills in care planning

Allied health clinicians:
- Feel a lack of respect from doctors but overall collaboration can improve interdisciplinary support

DISCUSSION

- Gaining understanding of each other's roles, expectations, and contribution to care planning assists efficient and quality care delivery.
- Nurses, allied health clinicians and patients desire more involvement in rounds, but this is challenged by a traditional medical hierarchy.
- **Wide-ranging skills of clinicians can enhance treatment plans, while involving patients in rounds increases their positive experiences and willingness to participate in treatment plans.**

2017 LONDON

Contact details: Victoria Welton
Email: victoria.welton@hdr.mq.edu.au

Appendix 2D Evaluating the recruitment strategies for a complex multidisciplinary quality improvement project

Walton V; Hogden A; Johnson J; Greenfield D, 2015, "Evaluating the recruitment strategies for a complex multidisciplinary quality improvement project", *32nd International Safety and Quality Conference: Building Quality and Safety into the Healthcare System*, Doha, Qatar 4 – 7 October 2015.

EVALUATING THE RECRUITMENT STRATEGIES FOR A COMPLEX MULTIDISCIPLINARY QUALITY IMPROVEMENT PROJECT

Objective: Engaging participants from multidisciplinary healthcare teams is an important and challenging phase in implementing a successful quality improvement study. The study aims were to identify and evaluate the effectiveness of recruitment strategies used for a complex quality improvement project.

Method: A retrospective analysis of secondary data consisting of field notes, emails and activities used during survey participant recruitment. Data were categorised under the professional group, associated roles, and communication strategies. Cross comparison of the strategies, episodes numbers, and profession was undertaken. The effectiveness of the strategies was evaluated using lead-time and data collected. The study setting was two wards from a large metropolitan teaching hospital in Sydney, Australia investigating the implementation of structured multidisciplinary ward rounds.

Results: The communication strategies, number of activities and lead-time necessary to engage different healthcare professionals varied considerably (Table 1).

Table 1: People and communication strategies used in the process of recruiting survey participants

PROFESSION	COMMUNICATION STRATEGIES (# times each strategy performed)							LEAD-TIME	DATA COLLECTED
	Email	Phone	Page	Fax	Face-to-face	Site visit	Total # of activities	# weeks*	# surveys completed/ # people invited
Allied Health	21	-	-	-	-	2	**23**	2	8/9 (89%)
Nursing	5	2	-	-	1	4	**12**	4	12/30 (40%)
Medical	34	7	5	1	4	6	**57**	28	6/21 (29%)
TOTAL	**60**	**9**	**5**	**1**	**5**	**12**	**92**	**-**	**26/60 (43%)**

*Time taken from carrying out first strategy to conclusion of data collection. Process taken simultaneously across three professions

The recruitment process varied by profession. Allied health recruitment was made through the director who consulted with clinicians. Contact details of potential participants were then given to the researcher, who made direct contact via email. An additional clinician joined after hearing about the study from colleagues. Although the recruitment process required only two communication strategies, the number of activities was the second highest at 23. The lead-time was the shortest and the response rate of 89%.

Nursing recruitment was made with the director who contacted unit managers. They suggested participants and site visits. During the site visit, the unit managers continued to provide facilitation to encourage participation. The process utilised four different communication strategies that led to 12 activities; the lowest number of the professional groups. The lead-time was two weeks longer than allied health and resulted in a response rate of 40%.

Medical officers were the most resource intensive group across strategies, number of activities and time. Contact was made with the director who nominated participants. The researcher

confirmed contact details with administration staff. Nominees were contacted using six different strategies, leading to 57 activities. The lead-time was 28 weeks, which was significantly longer than for other professions. The response rate was 29%.

Conclusion: Identifying and working with key contacts in each professional group facilitates successful engagement. The process of inviting survey participants can be linear or require constant adaptation. Making changes to a research plan requires motivation time and patience. Recognising and working through challenges with support ensures they are overcome.

ISQUA15-1483

EVALUATING THE RECRUITMENT STRATEGIES FOR A COMPLEX MULTIDISCIPLINARY QUALITY IMPROVEMENT PROJECT

Walton, V.,[1] Hogden, A.,[1] Johnson, J.[2] and Greenfield, D.[1]
[1]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[2]Center for Healthcare Studies, Northwestern University, Chicago, United States

Background and objective

Engaging participants from multidisciplinary healthcare teams is an important and challenging phase in implementing a successful quality improvement study.

The study aims were to identify and evaluate the effectiveness of recruitment strategies used for a complex quality improvement project.

Methods

A retrospective analysis of secondary data consisting of field notes, emails and activities used during survey participant recruitment.

Table 1 summarises the different communication tools used to engage invitees. It illustrates the total activities undertaken and the effectiveness of the strategies.

Findings

The recruitment process varied by profession (Table 1).

Table 1. People and communication strategies used in the process of recruiting survey participants.

Outcome	Participants		
	Allied Health	Nursing	Medical
Recruitment process	Director recruited participants	Director contacted unit managers, who recruited participants	Director nominated participants; researcher contacted participants
Number of communication strategies	2	4	6
Total activities	23	12	57
Lead-time	Shortest	Middle	Longest
Response rate (%)	89	40	29

*Time taken from carrying out first strategy to conclusion of data collection. Process taken simultaneously across three professions.

The researcher had the most direct contact with allied health clinicians. Contact details of potential participants were then given to the researcher, who made direct contact via email. An additional clinician joined after hearing about the study from colleagues.

Nursing recruitment was made with the director who contacted unit managers. They suggested participants and site visits. During the site visit, the unit managers continued to provide facilitation to encourage participation.

Medical officers were the most resource intensive group across strategies, number of activities and time. Contact was made with the director who nominated participants. The researcher confirmed contact details with administration staff.

Conclusion

Identifying and working with key contacts in each professional group facilitates successful engagement. The process of inviting survey participants can be linear or require constant adaptation. Making changes to a research plan requires motivation, time and patience. Recognising and working through challenges with support ensures they are overcome.

Contact details: Victoria Walton
Email: victoria.walton@students.mq.edu.au

Appendix 2E How many rounding processes can a medical ward have?

Walton V; Hogden A; Johnson J; Greenfield D, 2015, 'How many rounding processes can a medical ward have?' *32nd International Safety and Quality Conference: Building Quality and Safety into the Healthcare System*, Doha, Qatar 4 – 7 October 2015

HOW MANY ROUNDING PROCESSES CAN A MEDICAL WARD HAVE?

Objective: Ward rounds enable healthcare teams to coordinate patient care and provide a platform for clinician education. The study aims to explore different processes for ward rounds undertaken in acute care medical wards.

Method: A literature search was undertaken of works published between 2000 and 2014. Study inclusion criteria were face-to-face ward rounds undertaken in medical units, peer reviewed journals and government publications written in English, available as full text articles. Each article was reviewed and categorised by how it was defined and the purpose of the 'round'.

Results: A total of 39 papers met the study criteria. The results identified eight different classifications of rounds. The three most common were the: 'ward'; 'multidisciplinary'; and 'consultant' rounds. The purpose of all eight round processes could be grouped into three themes (Table 1).

Table 1: Round classifications and associated purpose

Category of round (n=39)	Purpose of round			
	Planning care	Education	Planning care	Not specified
Ward round (n=21)	7		13	1
Multidisciplinary (n=10)	7		3	
Consultant (n=5)	2		3	
Teaching (n=4)		4		
Post–take (n=2)			2	
Traditional (n=2)		1	1	
Working (n=2)	2			
Review of ward (n=1)				1

The ‘ward round’ had no single agreed definition, and some papers included a caveat on the difficulty of describing it. The purposes were: planning care; education; and combination of planning care and education. The ‘ward round’ was a most generically described process and included elements of all the remaining seven classifications.

The ‘multidisciplinary round’ used the terms ‘multidisciplinary’ and ‘interdisciplinary’ interchangeably indicating round participants. The purpose was primarily planning care, with education described as incidental rather than planned.

The ‘consultant round’ used the terms ‘consultant’ and ‘attending’ interchangeably to describe a round led by the senior medical officer. The themes were planning care and education. Within the ‘consultant round’ the provision of education was described as either interwoven into the care planning or conducted only after care planning was completed.

The ‘teaching round’ indicated its purpose simply within its name. The purpose was to provide education to junior medical officers on disease knowledge, identification, and management. The ‘post-take round’ described the timing of the activity with the consultant reviewing new patients admitted overnight or during the day. The purpose was identified as both planning care and education. Information about the description or purpose of the remaining three rounds was not available. The ‘traditional round’ was carried out for care planning and education. The purpose of the ‘working round’ was care planning. The ‘review of the ward’ described the attendees only but no purpose for it was given.

Conclusion:

This research provides a comprehensive summary of different rounds undertaken in acute adult medical units and, to the best of our knowledge, is the first of its kind. The complexities of the clinical environment are illustrated by numerous rounding processes. Variances within each process add further ambiguity. Clinicians need to move between care planning and education. Patients must also adapt to being both an active member and an ‘educational subject’. Alternating between the two within one round may affect clinicians’ and patients’ interactions and impact on therapeutic relationships. Patient safety relies on effective communication between team members and patients to mitigate risk. This can be achieved through clinical teams working together to deliver cohesive and coordinated care.

ISQua ID 15-2156

HOW MANY ROUNDING PROCESSES CAN A MEDICAL WARD HAVE?

MACQUARIE University

Walton, V.,[1] Hogden, A.,[1] Johnson, J.[2] and Greenfield, D.[1]
[1]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[2]Center for Healthcare Studies, Northwestern University, Chicago, United States

OBJECTIVES

Ward rounds enable healthcare teams to coordinate patient care, and provide a platform for clinician education. The study aims to explore different processes for ward rounds undertaken in acute care medical wards.

METHOD

A literature search was undertaken of academic works published between 2000 and 2014. Each article was reviewed and categorised: by the name or description of the round; and the purpose of the round.

FINDINGS

A total of 39 papers met the study criteria. The results identified eight different classifications of rounds (Table 1). Some papers described multiple rounds. The three most common were the: 'ward'; 'multidisciplinary'; and 'consultant' rounds.

Table 1 Round classifications

Category of round	# of papers
Ward round	21
Multidisciplinary	10
Consultant	5
Teaching	4
Post-take	2
Traditional	2
Working	2
Review of ward	1

- The 'ward round' had no single agreed definition, and some papers included a caveat on the difficulty of describing it.
- The 'multidisciplinary round' used the terms 'multidisciplinary' and 'interdisciplinary' interchangeably indicating round participants.
- The 'consultant round' used the terms 'consultant' and 'attending' interchangeably to describe a round led by the senior medical officer.

The purpose of all eight rounds could be grouped into three themes (Table 2).

- The majority of rounds had the combined purpose of planning patient care and providing education to clinicians.
- The 'ward ', 'multidisciplinary', and 'consultant' rounds all performed the planning of patient care and education.
- Rounds that included education were more likely to be targeted at medical officers.

Table 2 Purpose of rounds

Purpose of round	# of papers
Planning care and education	22
Planning care	18
Education	5
Not specified	2

CONCLUSION

Clinicians use rounds to move between care planning and education. Patients within a round must adapt to being both an active member and an 'educational subject'. Alternating between the two within one round may affect clinician and patient interactions and impact on therapeutic relationships. When all participants understand the purpose of the round communication between team members and patients is more effective. A shared understanding is important to deliver care that is cohesive and coordinated.

Contact details: Victoria Walton
Email: victoria.walton@students.mq.edu.au

Appendix 2F A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round

Walton V; Greenfield D; Johnson J, 2014, 'A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round' *31st International Safety and Quality Conference: Quality and Safety along the Health and Social Care Continuum,* Rio de Janeiro, Brazil 5 – 8 October 2014

A PROTOCOL TO INVESTIGATE HOW CLINICIANS AND PATIENTS IN A MULTIDISCIPLINARY WARD ROUND DEFINE ROLES AND INTERACT WITH EACH OTHER.

Objective: To present a protocol to investigate the relationships of team members within multidisciplinary ward rounds (MDWR) by examining the roles of team members, their interactions and the effects on patient care development.

Method: The study will consist of five phases cumulating in an evaluation of clinicians' and patients' teamwork before and after the implementation of a MDWR. The study will include both qualitative and quantitative data with literature reviews providing the foundation for each phase.

Table 1: Research objectives, methods and participants

Phase	Research question	Methodology	Source
1: Teamwork on a ward prior to the implementation of structured MDWR.	How do clinicians currently function as a team and the effectiveness of the existing teamwork	Survey Interviews	Doctors Nurses Allied health staff
2: Clinician interactions during a MDWR	How do clinicians describe their role, and the roles of their colleagues with a MDWR?	Survey Observations	Doctors Nurses Allied health staff Patients
3: What involvement do patients have in a MDWR?	How do clinicians interact with the patient during a MDWR?	Interviews Observations	Doctors Nurses Allied health staff Patients
4: Do MDWR improve patient outcomes?	Do MDWR have an impact on clinical indicators?	Audit	Medical Records Key Performance Indicators
5: Evaluation of clinicians' and patients' teamwork pre and post the implementation of MDWRs.	Do MDWRs improve the effectiveness of teamwork?	Results of the above	Doctors Nurses Allied health staff Patients Medical Records KPIs

Conclusion: This protocol provides a framework which examines how clinicians and patients define their roles and responsibilities during the transition from traditional wards to MDWRs. The ward round is an important component of the way clinicians plan patient care within a hospital setting. There are many different ward round structures however internationally and

within Australia, hospitals are moving towards implementing the MDWR. The MDWR involves the different disciplines caring for the patient meeting at the bedside to collaboratively discuss and formulate a management plan. The patient is also encouraged to take an active role in the MDWR. The success of a MDWR relies on clinicians working as a team therefore understanding how different disciplines interact with each other is vital.

Literature has focused predominantly on medical and nursing interactions with limited literature studying the interactions of allied health staff and very limited studies into the perceptions of allied health staff role in the MDWR. Studies examining the role of the patient during ward rounds are often conducted in the context of comparing bedside rounds to case conferences where the latter may not actually involve the patient being present.

The research will take place in a metropolitan acute care hospital in Australia that is implementing the roll out of MDWRs. Data will be studied across three specialties and across three clinical disciplinary groups as well as patients. The framework has the potential to be modified to different hospital specialties and units by assisting clinicians to identify and clarify roles in order to encourage communication within the team. When clinicians have defined roles, the goals of teamwork can be defined and are more likely to be met which will improve the patient journey. Research into what patients understand of their role in the MDWR will assist with the structure of the round to ensure both the needs of the team and the patient are met within the constraints of the hospital setting resulting in a safer patient journey.

A protocol to investigate how clinicians and patients define roles and interact in a multidisciplinary ward round

ISQUA14-2079

Victoria Walton, David Greenfield and Julie Johnson
Centre for Clinical Governance Research, Australian Institute of Health Innovation

Objective

The aim of this study is to present a protocol to investigate the relationships of team members within multidisciplinary ward rounds (MDWR). The study examines the roles of team members, their interactions and the effects on patient care development (Figure 1.).

Method

Table 1 illustrates the five phases of the study. A literature review will provide the foundation for each phase of quantitative and qualitative data collection, analysis and interpretation. Data will be reviewed across three specialties and across three clinical disciplinary groups as well as patients.

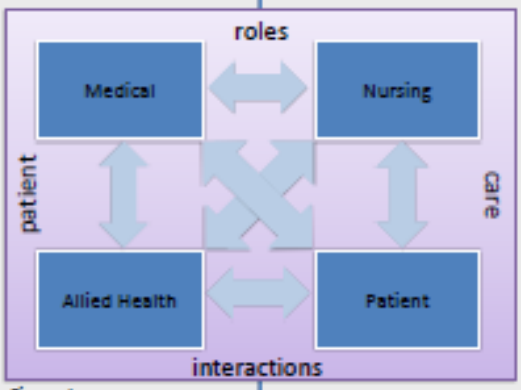


Figure 1

Implications

Research into what patients understand of their role in the MDWR will assist with the structure of the round. This information can be used to see if the needs of the team and the patient are met within the constraints of the hospital setting, resulting in a safer patient journey.

Conclusion

Literature has focused predominantly on medical and nursing interactions. Limited studies report the interactions with or perceptions of allied health professionals in the MDWR. When clinicians have defined roles, the goals of teamwork are more likely to be met which will improve the patient journey.

Phase	Research question	Methodology	Source
Teamwork prior to the implementation of structured MDWR	How do clinicians currently function as a team and what is the effectiveness of the existing teamwork?	Survey Interviews	Doctors Nurses Allied Health
Clinician interactions during MDWR	How do clinicians describe their role, and the roles of their colleagues with a MDWR?	Survey Observations	Doctors Nurses Allied Health Patients
Involvement of patients in MDWR	How do clinicians interact with the patient during a MDWR?	Interviews Observations	Doctors Nurses Allied Health Patients
Relationship between MDWR and patient outcomes	Do MDWR have an impact on clinical indicators?	Audit	Medical Records Key performance indicators (KPI)
Evaluation of teamwork pre and post the implementation of MDWR	Do MDWR improve the effectiveness of teamwork?	Triangulation of results from phases 1-4	Doctors Nurses Allied Health Patients Health records KPIs

Table 1. Research phases and associated methodology

Contact details
Victoria Walton
Email: v.walton@student.unsw.edu.au

References
1. NSW Department of Health 2011 *Multidisciplinary Ward Rounds: A Resource.*
2. Royal College of Physicians and Royal College of Nursing 2012. *Ward Rounds in medicine: principals for best practice.* London: RCP

References

1. Soliman A, Riyaz S, Said E, Hale M, Mills A, Kapur K. Improving the quality of care for medical inpatients by placing a higher priority on ward rounds.*Clinical Medicine.* 2013;13(6):534-538. doi:10.7861/clinmedicine.13-6-534.
2. O'Leary KJ, Ritter CD, Wheeler H, Szekendi MK, Brinton TS, Williams MV. Teamwork on inpatient medical units: Assessing attitudes and barriers.*Quality and Safety in Health Care.* 2010;19(2):117-121. doi:10.1136/qshc.2008.028795.
3. Redley B, McTier L, Botti M, et al. Patient participation in inpatient ward rounds on acute inpatient medical wards: A descriptive study. *BMJ Quality and Safety.* 2019;28(1):15-23. doi: http://dx.doi.org/10.1136/bmjqs-2017-007292.
4. O'Leary KJ, Boudreau YN, Creden AJ, Slade ME, Williams MV. Assessment of teamwork during structured interdisciplinary rounds on medical units. *Journal of Hospital Medicine.* 2012;7(9):679-683. doi:10.1002/jhm.1970.
5. Clay-Williams R, Plumb J, Luscombe GM, et al. Improving teamwork and patient outcomes with daily structured interdisciplinary bedside rounds: A multimethod evaluation. *Journal of Hospital Medicine.* 2018;13(5):311-317. doi:10.12788/jhm.2850.
6. Walton V, Hogden A, Johnson J, Greenfield D. Ward rounds, participants, roles and perceptions: Literature review. *International Journal of Health Care Quality Assurance.* 2016;29(4):364-379. doi:doi:10.1108/IJHCQA-04-2015-0053.
7. Körner M. Interprofessional teamwork in medical rehabilitation: A comparison of multidisciplinary and interdisciplinary team approach. *Clinical Rehabilitation.* 2010;24(8):745-755. doi:10.1177/0269215510367538.
8. Körner M, Bütof S, Müller C, Zimmermann L, Becker S, Bengel J. Interprofessional teamwork and team interventions in chronic care: A systematic review. *Journal of Interprofessional Care.* 2016;30(1):15-28. doi:10.3109/13561820.2015.1051616.
9. Pope C, Mays N. Qualitative research in health care (3rd ed.). In: Mays P, ed.: Blackwell Publishing BMJ Books; 2006. Accessed 20 October 2019.
10. Garling. P. Overview special commission of inquiry into acute care services in NSW. https://www.dpc.nsw.gov.au/assets/dpc-nsw-gov-au/publications/Acute-Care-Services-in-NSW-hospitals-listing-437/7d979f4786/Overview-Special-Commission-of-Inquiry-into-Acute-Care-Services-in-NSW.pdf. Published 2008. Accessed October 10,2019.
11. Dwyer SC, Buckle JL. The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods.* 2009;8(1):54-63. doi: 10.1177/160940690900800105.
12. NSW Health Medical Assessment Units in NSW. Agency for Clinical Innovation. https://www.aci.health.nsw.gov.au/networks/acute-care-taskforce/mau-nsw. Published 2019.Accessed April 1,2019.
13. The Royal Australasian College of Physicians. Australasian faculty of rehabilitation medicine. https://www.racp.edu.au/about/college-structure/australasian-faculty-of-rehabilitation-medicine. Published 2019. Accessed July, 7 2019.
14. NSW Health. Clinical Excellence Commission - In Safe Hands. http://www.cec.health.nsw.gov.au/quality-improvement/team-effectiveness/insafehands. Published 2016. Accessed November, 16 2016.
15. Bradfield OM. Ward rounds: The next focus for quality improvement? *Australian Health Review.* 2010;34(2):193-196. doi:http://dx.doi.org/10.1071/AH09797.

16. Perversi P, Yearwood J, Bellucci E, et al. Exploring reasoning mechanisms in ward rounds: A critical realist multiple case study. *BMC Health Services Research.* 2018;18(1). doi:10.1186/s12913-018-3446-6.
17. Baathe F, Ahlborg Jr G, Lagström A, Edgren L, Nilsson K. Physician experiences of patient-centered and team- based ward rounding – an interview based case-study.*Journal of Hospital Administration.* 2014;3(6):127-142. doi:10.5430/jha.v3n6p127.
18. Swenne CL, Skytt B. The ward round – patient experiences and barriers to participation.*Scandinavian Journal of Caring Sciences.* 2014;28(2):297-304. doi:10.1111/scs.12059.
19. Parissopoulos S, Timmins F, Daly L. Re-exploring the ritual of the ward round.*Nursing in Critical Care.* 2013;18(5):219-221. doi:10.1111/nicc.12042.
20. NSW Department of Health. Multidiciplinary Ward Rounds A Resource. https://www.health.nsw.gov.au/nursing/projects/Publications/multidiciplinary-ward-rou.pdf. Published 2011.Accessed March 10, 2015.
21. O'Leary KJ, Johnson JK, Manojlovich M, Goldstein JD, Lee J, Williams MV. Redesigning systems to improve teamwork and quality for hospitalized patients (reset): Study protocol evaluating the effect of mentored implementation to redesign clinical microsystems. *BMC Health Services Research.* 2019;19(1). doi:10.1186/s12913-019-4116-z.
22. Huynh E, Basic D, Gonzales R, Shanley C. Structured interdisciplinary bedside rounds do not reduce length of hospital stay and 28-day re-admission rate among older people hospitalised with acute illness: An australian study. *Australian Health Review.* 2017;41(6):599. doi:10.1071/ah16019.
23. Gausvik C, Lautar A, Miller L, Pallerla H, Schlaudecker J. Structured nursing communication on interdisciplinary acute care teams improves perceptions of safety, efficiency, understanding of care plan and teamwork as well as job satisfaction.*Journal of Multidisciplinary Healthcare.* 2015;8:33-37. doi:10.2147/JMDH.S72623.
24. Stein J, Payne C, Methvin A, et al. Reorganizing a hospital ward as an accountable care unit.*Journal of Hospital Medicine.* 2015;10(1):36-40. doi:10.1002/jhm.2284.
25. Müller M, Jürgens J, Redaèlli M, Klingberg K, Hautz WE, Stock S. Impact of the communication and patient hand-off tool sbar on patient safety: A systematic review. *BMJ Open.* 2018;8(8). doi:10.1136/bmjopen-2018-022202.
26. O'Leary KJ, Killarney A, Hansen LO, et al. Effect of patient-centred bedside rounds on hospitalised patients' decision control, activation and satisfaction with care.*BMJ Quality & Safety.* 2016;25(12):921-928. doi:10.1136/bmjqs-2015-004561.
27. Bhamidipati VS, Elliott DJ, Justice EM, Belleh E, Sonnad SS, Robinson EJ. Structure and outcomes of interdisciplinary rounds in hospitalized medicine patients: A systematic review and suggested taxonomy. *Journal of Hospital Medicine.* 2016;11(7):513-523. doi:10.1002/jhm.2575.
28. Gonzalo JD, Kuperman E, Lehman E, Haidet P. Bedside interprofessional rounds: Perceptions of benefits and barriers by internal medicine nursing staff, attending physicians, and housestaff physicians. *Journal of Hospital Medicine.* 2014;9(10):646-651. doi:10.1002/jhm.2245.
29. Chew BH, Tang CJ, Lim WS, Yap JKY, Zhou W, Liaw SY. Interprofessional bedside rounds: Nurse-physician collaboration and perceived barriers in an asian hospital.*Journal of Interprofessional Care.* 2019:1-3. doi:10.1080/13561820.2019.1566218.

30. Luthy C, Francis Gerstel P, Pugliesi A, Piguet V, Allaz A-F, Cedraschi C. Bedside or not bedside: Evaluation of patient satisfaction in intensive medical rehabilitation wards. *Plos One.* 2017;12(2). doi:10.1371/journal.pone.0170474.
31. Malec A, Mørk A, Hoffman R, Carlson E. The care team visit: Approaching interdisciplinary rounds with renewed focus. *Journal of Nursing Care Quality.* 2018;33(2):135-142. doi: 10.1097/NCQ.0000000000000279.
32. Redley B, McTier L, Botti M, et al. Patient participation in inpatient ward rounds on acute inpatient medical wards: A descriptive study. *BMJ Quality & Safety.* 2019;28(1):15-23. doi:doi.org/10.1136/bmjqs-2017-007292.
33. Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare.*Postgraduate Medical Journal.* 2014;90(1061):149-154. doi:10.1136/postgradmedj-2012-131168.
34. New PW. Survey of patients' preference for the location of rehabilitation ward rounds.*Journal of Rehabilitation Medicine.* 2008;40(8):678-680. doi:10.2340/16501977-0224.
35. NSW Health. ACI-rehabilitation-implementation-toolkit. Agency for Clinical Innovation.https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0008/190871/ACI-Rehabilitation-Implementation-Toolkit.pdf. Published 2013. Accessed March 3, 2019.
36. Monaghan J, Channell K, McDowell D, Sharma A. Improving patient and carer communication, multidisciplinary team working and goal-setting in stroke rehabilitation. *Clinical Rehabilitation.* 2005;19(2):194-199. doi:10.1191/0269215505cr837oa.
37. Wölfel T, Beltermann E, Lottspeich C, Vietz E, Fischer MR, Schmidmaier R. Medical ward round competence in internal medicine - an interview study towards an interprofessional development of an entrustable professional activity (epa). *BMC Medical Education.* 2016;16:174. doi:10.1186/s12909-016-0697-y.
38. Zwarenstein M, Rice K, Gotlib-Conn L, Kenaszchuk C, Reeves S. Disengaged: A qualitative study of communication and collaboration between physicians and other professions on general internal medicine wards. *BMC Health Services Research.* 2013;13(1):1-9. doi:10.1186/1472-6963-13-494.
39. Moroney N, Knowles C. Innovation and teamwork: Introducing multidisciplinary team ward rounds. *Nursing Management (Harrow, London, England: 1994).* 2006;13(1):28-31 24p. doi:10.7748/nm2006.04.13.1.28.c2047.
40. Prystajecky M, Lee T, Abonyi S, Perry R, Ward H. A case study of healthcare providers' goals during interprofessional rounds. *Journal Interprofessional Care.* 2017;31(4):463-469. doi:10.1080/13561820.2017.1306497.
41. Schmelter V, März E, Adolf C, et al. Ward rounds in internal medicine:Validation of an entrustable professional activity (epa) observation checklist. *GMS Journal Medical Education.* 2018;35(2). doi:10.3205/zma001164.
42. Powell N, Bruce CG, Redfern O. Teaching a 'good' ward round. *Clinical Medicine Journal.* 2015;15(2):135-138. doi:10.7861/clinmedicine.15-2-135.
43. Hale G, McNab D. Developing a ward round checklist to improve patient safety. *BMJ Quality Improvement Reports.* 2015;4(1). doi:10.1136/bmjquality.u204775.w2440.
44. Bååthe F, Ahlborg Jr G, Edgren L, Lagström A, Nilsson K. Uncovering paradoxes from physicians' experiences of patient-centered ward-round. *Leadership in Health Services.* 2016;29(2):168-184. doi:10.5430/jha.v3n6p127.
45. Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Clinicians' perceptions of rounding processes and effectiveness of clinical communication. *Journal of Evaluation in Clinical Practice.* 2019;1-11. doi:10.1111/jep.13248.

46. Chow MY, Nikolic S, Shetty A, Lai K. Structured interdisciplinary bedside rounds in an australian tertiary hospital emergency department: Patient satisfaction and staff perspectives. *Emergency Medicine Australasia.* 2019;31(3):347-354. doi:10.1111/1742-6723.13160.
47. Solvang PK, Hanisch H, Reinhardt JD. The rehabilitation research matrix: Producing knowledge at micro, meso, and macro levels. *Disability and Rehabilitation.* 2017;39(19):1983-1989. doi:10.1080/09638288.2016.1212115.
48. Creswell J. *Research design: Qualitative, quantitative, and mixed methods approaches.* 4th ed. Thousand Oaks, CA: SAGE Publications; 2014.
49. Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Exploring interdisciplinary teamwork to support effective ward rounds *International Journal of Health Care Quality Assurance.* Accepted for publication February 2020.
50. Walton V, Hogden A, Long JC, Johnson J, Greenfield D. How do interprofessional healthcare teams perceive the benefits and challenges of an interdisciplinary ward round? *Journal of Multidisciplinary Healthcare.* 2019;12:1023-1032. doi:10.2147/JMDH.S226330.
51. Walton V, Hogden A, Long JC, Johnson J, Greenfield D. Patients, health professionals, and the health system: Influencers on patients' participation in ward rounds. *Patient Preference and Adherence.* 2019;Volume 13:1415-1429. doi:10.2147/ppa.s211073.
52. Greenhalgh T, Papoutsi C. Spreading and scaling up innovation and improvement. *BMJ.* 2019;365:l2068. doi: 10.1136/bmj.l2068.
53. Nikendei C, Kraus B, Schrauth M, Briem S, Jünger J. Ward rounds: How prepared are future doctors? *Medical Teacher.* 2008;30(1):88-91. doi:10.1080/01421590701753468
54. Royal College of Physicians and Royal College of Nursing. Ward rounds in medicine principals for best practice. https://www.rcplondon.ac.uk/projects/outputs/ward-rounds-medicine-principles-best practice#targetText=Ward%20rounds%20play%20a%20crucial,way%20ward%20rounds%20are%20conducted Published 2012. Accessed November, 24 2015.
55. Najafi N, Monash B, Mourad M, et al. Improving attending rounds: Qualitative reflections from multidisciplinary providers. *Hospital Practice.* 2015;43(3):186-190. doi:10.1080/21548331.2015.1043181.
56. Reddin G, Davis NF, Donald KM. Ward stories: Lessons learned from patient perception of the ward round.*Irish Journal of Medical Science.* 2019. doi:10.1007/s11845-019-01975-z.
57. Ratelle J, Henkin S, Chon T, Christopherson M, Halvorsen A, Worden L. Improving nurse-physician teamwork through interprofessional bedside rounding. *Journal of Multidisciplinary Healthcare.* 2016:201. doi:10.2147/jmdh.s106644.
58. Enslev Jensen B, Found PA, Williams SJ, Walley P. Improving the efficiency and effectiveness of ward rounds. *International Journal of Quality and Service Sciences.* 2016;8(3):279-297. doi:doi:10.1108/IJQSS-05-2016-0039.
59. Ratelle JT, Sawatsky AP, Kashiwagi DT, et al. Implementing bedside rounds to improve patient-centred outcomes: A systematic review. *BMJ Quality & Safety.* 2019;28(4):317-326. doi:10.1136/bmjqs-2017-007778.
60. Tang CJ, Zhou WT, Chan SW-C, Liaw SY. Interprofessional collaboration between junior doctors and nurses in the general ward setting: A qualitative exploratory study.*Journal of Nursing Management.* 2018;26(1):11-18. doi:doi:10.1111/jonm.12503.
61. Jala S, Giaccari S, Passer M, et al. "In safe hands" – a costly integrated care program with limited benefits in stroke unit care. *Journal of Clinical Neuroscience.* 2019;59:84-88. doi:10.1016/j.jocn.2018.10.135.

62. Abraham J, Kannampallil TG, Patel VL, Patel B, Almoosa KF. Impact of structured rounding tools on time allocation during multidisciplinary rounds: An observational study. *Journal of Medical Internet Research: Human Factors.* 2016;3(2):e29. doi:10.2196/humanfactors.6642.
63. Redley B, Campbell D, Stockman K, Barnes S. A mixed methods quality evaluation of structured interprofessional medical ward rounds.*International Medicine Journal.* 2019. doi:10.1111/imj.14330.
64. O'Leary KJ, Haviley C, Slade ME, Shah HM, Lee J, Williams MV. Improving teamwork: Impact of structured interdisciplinary rounds on a hospitalist unit. *Journal of Hospital Medicine.* 2011;6(2):88-93. doi:10.1002/jhm.714.
65. Gilliland. N, Catherwood N, Chen. S, Browne. P, Wilson. J, . HB. Ward round template: Enhancing patient safety on ward rounds. *BMJ Open Quality.* 2018;7. doi:10.1136/bmjoq-2017-000170.
66. Dellenborg L, Wikström E, Andersson Erichsen A. Factors that may promote the learning of person-centred care: An ethnographic study of an implementation programme for healthcare professionals in a medical emergency ward in sweden. *Advances in Health Sciences Education.* 2019;24(2):353-381. doi:10.1007/s10459-018-09869-y.
67. Levison W, Lesser CS, Epstein RM. Developing physician communication skills for patient-centered care. *Health Affairs.* 2010;29(7):1310-1318. doi:10.1377/hlthaff.2009.0450.
68. Fulop NJ, Ramsay AIG. How organisations contribute to improving the quality of healthcare. *BMJ.* 2019;365:l1773. doi:https://doi.org/10.1136/bmj.l1773.
69. Bradley EH, Brewster AL, McNatt Z, et al. How guiding coalitions promote positive culture change in hospitals: A longitudinal mixed methods interventional study. *BMJ Quality & Safety.* 2018;27(3):218-225. doi:10.1136/bmjqs-2017-006574.
70. Blankenburg R, Hilton JF, Yuan P, et al. Shared decision-making during inpatient rounds: Opportunities for improvement in patient engagement and communication. *Journal of Hospital Medicine.* 2018;13(7):453-461. doi:10.12788/jhm.2909.
71. Carpenter A, Vora SM, Kestenbaum S, et al. Afternoon ward rounds: Bad for patients, bad for doctors?*Future Healthcare Journal.* 2019;6(2):118-122. doi:10.7861/futurehosp.6-2-118.
72. Pearce J, Govan S, Harlinska A, Tremain R, Gajebasia S, Redman M. Workforce: Newly graduated doctors' experiences of conducting medical ward rounds alone: A regional cross-sectional study. *Future Healthcare Journal.* 2019;6(1):47-51. doi:10.7861/futurehosp.6-1-47.
73. Tariq A, Baysari M, Pedersen CH, et al. Examining barriers to healthcare providers' adoption of a hospital-wide electronic patient journey board. *International Journal of Medical Informatics.* 2018;114:18-26.
74. Grace S, Innes E, Joffe B, East L, Coutts R, Nancarrow S. Identifying common values among seven health professions: An interprofessional analysis. *Journal of InterprofessionalCare.* 2017;31(3):325-334. doi:10.1080/13561820.2017.1288091.
75. Cutler S, Morecroft C, Carey P, Kennedy T. Are interprofessional healthcare teams meeting patient expectations? An exploration of the perceptions of patients and informal caregivers. *Journal of InterprofessionalCare.* 2019;33(1):1-10. doi:10.1080/13561820.2018.1514373.
76. Nancarrow SA, Booth A, Ariss S, Smith T, Enderby P, Roots A. Ten principles of good interdisciplinary team work.*Human Resources for Health.* 2013;11(1):19. doi:10.1186/1478-4491-11-19.

77. Salas E, Sims DE, Burke CS. Is there a “big five” in teamwork? *Small Group Research.* 2005;36(5):555-599. doi:https://doi.org/10.1177%2F1046496405277134
78. Cao V, Tan LD, Horn F, et al. Patient-centered structured interdisciplinary bedside rounds in the medical icu. *Critical Care Medicine.* 2018;46(1). doi: 10.1097/CCM.0000000000002807.
79. Eljiz K, Greenfield D, Derrett A, Radmore S. Health system redesign: Changing thoughts, values, and behaviours for the co-production of a safety culture. *The International Journal of Health Planning and Management.* 2019. doi:10.1002/hpm.2798.
80. Australian Commission on Safety and Quality in Health Care. *National statement on health literacy - taking action to improve safety and quality.* https://www.safetyandquality.gov.au/publications-and-resources/resource-library/national-statement-health-literacy-taking-action-improve-safety-and-quality Published 2014. Accessed February, 23 2020.
81. Sørensen K, Van Den Broucke S, Fullam J, et al. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health.* 2012;12(1):80. doi:https://doi.org/10.1186/1471-2458-12-80.
82. Garcia-Codina O, Juvinyà-Canal D, Amil-Bujan P, et al. Determinants of health literacy in the general population: Results of the catalan health survey. *BMC Public Health.* 2019;19(1). doi: https://doi.org/10.1186/s12889-019-7381-1.
83. Jacobson HE, Hund L, Soto Mas F. Predictors of english health literacy among u.S. Hispanic immigrants: The importance of language, bilingualism and sociolinguistic environment. *Literacy and Numeracy Studies.* 2016;24(1):43-64. doi: https://dx.doi.org/10.5130%2Flns.v24i1.4900.
84. Farberg AS, Lin AM, Kuhn L, Flanders SA, Kim CS. Dear doctor: A tool to facilitate patient-centered communication. *Journal of Hospital Medicine.* 2013;8(10):553-558. doi:10.1002/jhm.2073.
85. Hanks RG. The medical-surgical nurse perspective of advocate role. *Nursing Forum.* 2010;45(2):97-107. doi:10.1111/j.1744-6198.2010.00170.x.
86. Water T, Ford K, Spence D, Rasmussen S. Patient advocacy by nurses – past, present and future. *Contemporary Nurse.* 2016;52(6):696-709. doi:10.1080/10376178.2016.1235981.
87. Gatlin TK, Serafica R, Johnson M. Systematic review of peer education intervention programmes among individuals with type 2 diabetes. *Journal of Clinical Nursing.* 2017;26(23-24):4212-4222. doi:10.1111/jocn.13991.
88. Madmoli M, Khodadadi M, Ahmadi F, Niksefat M. A systematic review on the impact of peer education on self-care behaviors of patients.*International Journal of Health and Biological Sciences.* 2019;2(1):1-5. Available at http://www.ijhbs.com/index.php/ijhbs/article/view/7/7.
89. Claxton-Oldfield S, Blacklock K. Hospice palliative care volunteers as program and patient/family advocates. *American Journal of Hospice and Palliative Care.* 2017;34(9):844-848. doi:10.1177/1049909116659464.
90. Merner B, Hill S, Taylor M. “I’m trying to stop things before they happen”: Carers’ contributions to patient safety in hospitals. *Qualitative Health Research.* 2019;29(10):1508-1518. doi:10.1177/1049732319841021.
91. Thörne K, Andersson-Gäre B, Hult H, Abrandt-Dahlgren M. Co-producing interprofessional round work: Designing spaces for patient partnership. *Qual Manag Health Care.* 2017;26(2):70-82. doi:10.1097/QMH.0000000000000133.

92. NSW Health. Clinicial Excellence Commission. Clinical Incident Management. http://www.cec.health.nsw.gov.au/clinical-incident-management.2019 Accessed 21, August 2019.
93. Hosseini HM, Pai DR, Ofak DR. Copd: Does inpatient education impact hospital costs and length of stay? *Hospital Topics.* 2019;97(4):165-175. doi: 10.1080/00185868.2019.1677540.
94. Hogden A, Short A, Taylor R, Dugdale P, Nugus P, Greenfield D. Health coaching and motivational interviewing: Evaluating the chronic disease self-management toolbox as a resource for person-centered healthcare. *Person Centered Medicine.* 2012;2(3):520-530. doi:http://dx.doi.org/10.5750/ijpcm.v2i3.256.