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Master of Clinical Science

**The patient experience of partnering with healthcare
professionals for hand hygiene compliance: a systematic review
of qualitative literature**

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Student details: Samantha Butenko

Master of Clinical Science

Joanna Briggs Institute

Faculty of Health and Medical Sciences

The University of Adelaide

Australia

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Abstract

Background

Healthcare associated infections pose a significant risk to patients in acute healthcare settings such as hospitals. Increasingly patients are encouraged to be active participants and to partner with healthcare professionals to positively influence their own safety and overall experience throughout their healthcare journey. Patient focused safety initiatives include the empowerment of patients to be active partners with healthcare professionals to influence the hand hygiene behaviors and compliance of the healthcare professionals providing care to them.

Partnering between the patient and healthcare professional within the healthcare context can be considered a general concept involving the empowerment of patients to participate in their care. Terms used to describe patient partnering within healthcare vary and include patient participation, patient centeredness, patient empowerment and patient engagement.

Although patients generally appear to have positive attitudes and intentions about engaging in their safety and partnering in the healthcare setting, their intentions and actual behaviors vary considerably. Patients appear less likely to engage in behaviors that require questioning of the perceived or real authority of healthcare professionals. A patient's intention and subsequent act of partnering with healthcare professionals for hand hygiene compliance by the healthcare professional is influenced by complex internal, external and social factors as well as cultural, behavioral and systematic factors.

Objectives

To identify and synthesize the best available evidence in relation to the experiences of the patient partnering with healthcare professionals in hand hygiene compliance.

To explore the question: What is the experience of partnership between healthcare professionals (doctors and nurses) and patients in relation to hand hygiene compliance in the acute adult hospital setting?

Design

A systematic review of qualitative evidence using the Joanna Briggs Institute meta-aggregative approach to qualitative evidence synthesis.

Inclusion criteria

Participants

This review considered qualitative (critical or interpretive) papers that included adult in-patients and healthcare professionals, defined as a healthcare worker being a doctor or nurse in the acute hospital care setting. Adult was defined as any person aged 18 years or older. It should be noted that consumers in this context are patients and visa versa; the term patient is therefore used throughout this report for consistency.

Phenomena of interest

This review considered studies that investigated the experience of partnership between patients and healthcare professionals in relation to hand hygiene compliance. This review investigated the phenomena of partnering from the perspective of both the patient and the healthcare professional.

The phenomenon of interest was the patient's partnering experience with healthcare professionals within the adult acute healthcare setting and the influence of the associated behaviors and cultures that influence this experience.

Context

This review considered studies that investigated the experience of partnering between patients and healthcare professionals in hand hygiene compliance in the adult acute healthcare setting.

Studies

This review considered studies that focused on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research. As qualitative studies were identified and on appraisal found to be of sufficient quality for inclusion, this review did not seek alternate forms of evidence such as text and opinion.

Search strategy

The search strategy aimed to find both published and unpublished studies from 1990 to May 2015. Studies published in English were considered for inclusion in this review.

Methodological quality

Qualitative papers selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Qualitative Assessment and Review Instrument.

Data extraction

Qualitative data was extracted from papers included in the review using the standardized data extraction tool from the Joanna Briggs Institute Qualitative Assessment and Review Instrument.

Data synthesis

Qualitative research findings were pooled using the Qualitative Assessment and Review Instrument. This involved the aggregation and synthesis of findings to generate categories, which then underwent meta-synthesis to produce synthesized findings. The synthesized findings then were used to provide an evidence base to generate implications for practice and research.

Results

Following the systematic search and critical appraisal process, three studies were included in the review for data extraction and synthesis of findings. The review process resulted in 29 study findings that were aggregated into seven categories. The categories generated two meta-synthesized findings.

The two final synthesized findings are as follows:

Synthesized finding 1: Organizational structures enable partnering between healthcare professionals and patients for hand hygiene compliance; however the cultures, beliefs and behaviors of healthcare professionals and patients do not fully support this partnership.

Synthesized finding 2: Patients have differing levels of knowledge and balance partnering in hand hygiene against its possible detrimental impact on the caring relationship provided by healthcare professionals, out of concern for their wellbeing, health outcomes, treatment and or recovery.

Rating of synthesized findings – ConQual

Recommendations from the systematic review findings presented in this thesis are derived from a list of study findings with illustrations. The recommendations from the findings have been subjected to the ConQual process to establish confidence in their strength and meaningfulness.

Conclusions

This review highlights the complexity of the patient experience of partnering with healthcare professionals for hand hygiene compliance. The experiences reported indicated that there is a disparity between the intent and promotion of partnering for hand hygiene compliance within healthcare facilities and healthcare professionals, and the actual patient's acceptance, participation, partnership and experience, and the implementation of this initiative. This disconnect between intent and action appears to be influenced by a number of factors including organizational structures as well as drivers such as cultural beliefs and behavior.

Implications for practice

Recognizing the unique objective and subjective needs of and influencers on patients' and healthcare professionals' hand hygiene partnering experiences in the acute hospital setting is vital to improving the journey, pathways, facilitators, barriers and interactions of these individuals and groups.

Implications for research

Further qualitative studies should be undertaken in the area of partnering for hand hygiene in the acute care setting, both from the patients' and healthcare professionals' perspectives.

Research should include seeking to understand patient confidence levels and barriers and facilitators that affect patient intention and actions to partner for hand hygiene in the acute healthcare setting.

Keywords

hand hygiene, compliance, patient participation, empowerment, patient engagement, patient centeredness, partnership, patient safety practices, health literacy, healthcare professional, healthcare worker.

Declaration

I, Samantha Butenko, certify that this work contains no material that has been accepted for the award of any other degree or diploma in any university or any other tertiary institution, and, to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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Samantha Butenko

Date

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Chapter 1: Introduction

Healthcare associated infections cause patient morbidity and mortality and are associated with significant human and financial costs. The World Health Organization documented that 'overall estimates indicate that more than 1.4 million patients worldwide in developed and developing countries are affected at any time'.^{1(p6)} There are around 200,000 healthcare associated infections (HAIs) in Australian acute healthcare facilities each year.² This makes HAIs the most common complication affecting patients in hospital.² As well as causing unnecessary pain and suffering for patients and their families, these adverse events prolong hospital stays and are costly to the health system.²

Transmission of infectious organisms occurs in a number of ways, including by contact (direct and indirect), droplet, airborne and vector borne routes.² It is important for healthcare professionals and patients to understand how organisms are spread and how to minimize the risks associated with the spread of infectious organisms in the healthcare setting.²

Increasingly, patients are being encouraged to be empowered and partner with healthcare professionals in the provision of healthcare delivery.¹ Partnering between patients and healthcare professionals is considered a positive initiative that can assist with risk mitigation relating to adverse patient events, including HAIs.^{1,2} Patient empowerment and partnering is also thought to enrich the patient experience by encouraging patients to express their preferences and concerns to healthcare professionals.²

Hand hygiene is well documented as one the most important infection prevention and control interventions aimed at decreasing the risk of infection.^{1,2} However the practice of hand hygiene continues to have varying levels of compliance by healthcare professionals. International data reports range from 5% to 89%, with an overall average of 38.7%¹ in Australia as at 2016, indicating an overall compliance rate of 83.9%.³ Various safety and hand hygiene campaigns are being run to inform patients of the importance of them partnering with healthcare professionals for hand hygiene compliance and partnering in their care.^{1,2} Patients are increasingly being

encouraged and empowered to speak up to healthcare professionals in relation to hand hygiene compliance.^{1,2,4}

This thesis explores the patient experience of partnering with healthcare professionals for hand hygiene compliance. Aspects relating to the investigation of this topic include: how do patients feel, do patients want to partner, is the experience positive or negative, and what are the behavioral and cultural influencers? The stated question for the systematic review and thesis is: “What is the experience of partnership between healthcare professionals (doctors and nurses) and patients in relation to hand hygiene compliance in the acute adult hospital setting?”

The existing evidence is explored in relation to the phenomenon of patients partnering with healthcare professionals for hand hygiene compliance to address questions regarding the role of the patient as an equal active partner and influencer in the hand hygiene practice of healthcare professionals. Other concepts explored include the actions and behaviors that encourage patients to be active, empowered participants in the care of healthcare professionals as opposed to passive recipients. There are complex behavioral and cultural influences that underpin the intentions, actions and interactions between patients and healthcare professionals.

There appears to be a paucity of available published research literature regarding the patient experience of partnering with healthcare professionals for compliance with hand hygiene in the adult acute healthcare setting. However the available literature does examine current behaviors and cultures within healthcare, and raises the question: is it plausible to expect patients to speak up and partner with healthcare professionals in their care? Additionally, what challenges does partnering present arising from established behavioral and cultural influences on the patient and carer relationship and roles?

Professional background

Having worked as a nurse for the last 30 years, with the last 18 years in the area of infection prevention and control, I have witnessed the growing emphasis and promotion of hand hygiene as a cornerstone of infection prevention and control practice. Early in my career, I witnessed the advent of HIV AIDS and the introduction of a very structured set of infection control practices, referred to as Universal

precautions. Universal precautions developed further into a two-tier approach, namely, standard and additional precautions, with additional precautions more recently referred to as transmission based precautions.²

The constant amongst these refinements to the terms and approaches to infection control practice was hand washing.^{1,2} However even this most fundamental infection prevention and control practice continues to evolve, with the more recent reference to the practice of cleaning and washing hands being hand hygiene. Hand hygiene refers to the use of either soap and water or, more commonly, waterless products such as alcohol based rubs and gels.¹

The practice of infection prevention and control has continued to evolve, and like other practices in healthcare, attention has turned to the provision of patient centered care and partnering with patients.^{1,2} As a senior infection control nurse, I have continued to witness varying levels of hand hygiene compliance amongst healthcare professionals and an apparent reluctance of patients to challenge and speak up, despite various campaigns and policies encouraging this behavior.¹ This has prompted me to seek to understand the apparent disconnect between recommended hand hygiene policies, the rhetoric of partnering for hand hygiene compliance, and the associated behaviors actions and experiences seen in clinical practice.

Relationship between the topic and my work interests

Infection control is a core component of the provision of quality healthcare and is ultimately about people.² Successful interventions aimed at minimizing the risks associated with HAIs must consider both the human and system based factors, and involve the patient at every level of their healthcare journey.^{1,2} The practice of hand hygiene by healthcare professionals is one of the core recommendations of the discipline of infection prevention and control, and is a key practice as part of standard and transmission based precautions.^{1,2}

The practice of hand hygiene by healthcare professionals such as doctors and nurses can be found in historical information from the 1800s.⁵ Notable examples of the promotion of hand hygiene, albeit not always successfully, include the experiences of Dr Ignaz Semmelweis, a Hungarian physician, who in the 1840s proposed that hand washing could drastically reduce the number of women dying

after childbirth.^{5,6} He introduced hand washing rules (medical staff were instructed to wash their hands with calcium chloride before visiting patients) in the maternity ward, and maternal deaths were drastically reduced, with Semmelweis becoming known as the savior of mothers.^{7,8}

Another historical account of hand hygiene in healthcare relates to one of the nursing pioneers of the 1800s, Florence Nightingale.⁵ Nightingale was credited with recommending that the first requirement in a hospital is that it should do the sick no harm.⁵ Florence Nightingale's publication from 1860, *Notes on Nursing*, also states, "Every nurse ought to be careful to wash her hands very frequently during the day."^{9(p29)}

Healthcare associated infections pose a significant risk to patients in healthcare settings; patient safety and infection prevention and control campaigns and interventions aim to mitigate this risk.^{1,2} Safety initiatives and best practice guidelines include a focus on promoting compliance by healthcare professionals with recommended healthcare practices and a patient centered approach to care.¹ Patient centered approaches to care encompass strategies designed to empower patients and the promotion of patients as active partners in their care.^{1,2}

Overview of topic

Hand hygiene

Hand hygiene aims to reduce the number of microorganisms on the hands and refers to the application of a waterless antimicrobial agent (e.g. alcohol based hand rub) to the surface of the hands, or the use of soap/solutions (plain or antimicrobial) and water (if the hands are visibly soiled), followed by patting dry with single-use towels.²

Hand hygiene plays an integral role in the reduction of the risk of HAIs and the spread of microorganisms, as many infectious agents can be transmitted by the human touch.^{1,2} The prevailing responsibility to undertake the practice of hand hygiene in healthcare settings has been assigned to healthcare professionals, i.e. nursing, medical and allied health staff.¹ Although reliant on individual compliance, hand hygiene sits within an organizational context as one of the, if not the leading, preventative measures to mitigate the risks of HAIs.^{1,2}

Healthcare associated infections

Hospitals and healthcare facilities could be described as somewhat perilous places given the grouping of large numbers of susceptible people being cared for by multiple staff in an ever increasingly complex healthcare landscape. Risks to patients in healthcare settings include the risk of HAIs.^{1,2} Despite the apparent risks, patients expect and hope that interactions with healthcare professionals and the care provided within healthcare facilities is safe, effective and caring.¹⁰

The incidence of HAIs in healthcare facilities is a well documented and recognized risk for patients.¹ Healthcare associated infections have a major impact on patient healthcare outcomes as well as healthcare facilities, with adverse outcomes including prolonged length of hospital stay, disability, increased microbial resistance, financial burden, emotional distress and deaths.^{1,2} Healthcare associated infections in developed countries affect 5-15% of hospitalized patients and can affect 9-37% of patients admitted to intensive care units.¹

Empowerment and partnering for hand hygiene

Empowerment is defined by the World Health Organization (WHO) as “a process in which patients understand their role, are given the knowledge and skills by their healthcare provider to perform a task in an environment that recognizes community and cultural differences and encourages patient participation”.^{1(p190)} There appears to be no set definition regarding partnering, with a wide variation in terms used to indicate the inclusion of patients in the care provided by healthcare professionals. Terms used to describe patient partnership include: patient participation, consumer participation, patient centeredness, patient empowerment, patient partnership, patient safety practice and patient engagement.¹ Empowerment, participation and partnering with patients require an understanding of the patient’s and healthcare professional’s background, culture, behavior and perception of roles.¹ Given the variation in terminology, partnering will be used as the preferred term throughout this thesis.

Partnering between patients and healthcare professionals for hand hygiene compliance is considered an important component of healthcare practice and is promoted and encouraged as a patient safety measure.¹ Programs for patient and staff empowerment relating to hand hygiene improvement can be categorized into educational (including online learning), motivational (reminders/posters) and role

modelling within the context of a multimodal approach.¹ Partnering for hand hygiene compliance with healthcare professionals in the adult acute care setting includes the expectation that patients will speak up and ask healthcare professionals to perform hand hygiene during their health care encounter.

Overview of research methods

The methodological basis for this thesis was the Joanna Briggs Institute (JBI) method for qualitative synthesis. Meta-aggregation is the preferred approach to qualitative synthesis where the aim is to generate knowledge to inform policy or practice as compared with the generation of mid-level theory common to realist synthesis or meta-ethnography.¹¹ In particular, meta-aggregation enables the formulation of final synthesized findings as lines of action from which to base recommendations for research and practice arising from this research. Illustrations from studies support the findings, which are classified using the ConQual approach.¹² The application of ConQual aims to classify qualitative study findings with consideration of criteria relating to type of data, and dependability and credibility of findings in order to establish a measurable rating of confidence in the findings.¹²

This thesis integrates the *a priori*, peer reviewed, published protocol outlining the methods to be employed for this systematic review. This systematic review and this thesis therefore incorporates the initial research protocol, search strategy, critical appraisal of selected studies, data extraction and meta-aggregation of the qualitative evidence.¹³

Statement of objectives

The aim of undertaking this systematic review was to identify, critically review and synthesize evidence on the experiences of the patient partnering with healthcare professionals for hand hygiene compliance in the acute care setting. It is hoped that the evidence will facilitate further understanding of patient and healthcare professional behaviors, attitudes and feelings relating to the act of partnering for hand hygiene and the relationship between cultural and behavioral factors, with the overall aim of improving patient experiences, care and safety.

Summary of the thesis structure

The structure of the thesis follows the structure and format used in the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information

(JBI-SUMARI) software,¹¹ and includes an introductory chapter that locates the review within the broad field of study, and provides an overview of the methodology associated with the specific type of review.

This thesis is presented in five chapters, as follows:

Chapter 1: Introduction, including a historical background and overview of the topic, as well as a high level explanation of the key concepts of hand hygiene, HAIs and partnership, an overview of the methods, a statement of objective, key definitions and a summary of the thesis structure.

Chapter 2: Background, including an introductory paragraph providing an overview of the sections on the three main concepts of HAIs, hand hygiene and partnering for hand hygiene. This chapter provides the context to the core concepts relating to the patient's and healthcare professional's experience for compliance with hand hygiene in the acute care setting.

Chapter 3: Methodology and methods, including the methodology and methods utilized in the systematic review within the thesis. This chapter provides information on the process including the review question and objective, background, criteria for considering studies for the review and review methods, overview of evidence synthesis as well as discussion of the methodological basis of the chosen approach, i.e. meta-analysis and aggregative synthesis.

Chapter 4: Results, including results from the systematic review including the PRISMA flowchart of the study selection process, description of studies, findings, categories and final synthesized findings.

Chapter 5: Discussion and conclusions, including general discussion and implications for practice and research and the overall conclusion. The concluding chapter presents the central thesis of the work and provides a colluding argument and overall position offered to the field as a result of the review.

Chapter 2: Background

Introduction

Throughout history hospitals and the practice of healthcare have presented patients with not only the opportunity of recovery from illness and disease, but also considerable associated risks. Risks such as infection adversely affect a patient's recovery and at times their very survival.^{1,5}

The presence and treatment of infection and illness in humans has historically been linked with superstitions, magical cures and illness being associated with punishment from a higher being.⁵ With the advent of modern science came a greater understanding of the mechanisms behind the development of illness and the process of infection. However despite this knowledge, the risks associated with HAIs remain apparent in healthcare facilities today.¹ Healthcare associated infections, also known as nosocomial infections, refer to infections that are acquired in or associated with healthcare facilities and that occur due to healthcare interventions.² Healthcare associated infections incur considerable economic costs as well as significant patient morbidity and mortality.¹

Healthcare associated infections are linked to extended length of stay in hospitals for patients and can necessitate more complex and costly treatments.² The WHO reports that "overall estimates indicate that more than 1.4 million patients worldwide in developed and developing countries are affected at any time".^{1(p6)} In developed countries, HAIs impact 5-15% of hospitalized patients and can affect 9-37% of those admitted to intensive care units.¹ In Australia, there are around 200,000 HAIs each year, making HAIs the most common complication affecting patients in hospital.²

Despite risks associated with healthcare and hospitals, patients expect and hope that interactions and the care provided within healthcare facilities is safe, effective and caring. To mitigate the risks posed by HAIs in healthcare settings, patient safety and infection prevention and control programs and strategies are promoted and recommended as part of best practice guidelines and standards.^{1,2,10} The practice of performing hand hygiene by healthcare professionals is a key component of many infection prevention and control programs aimed at improving patient safety and reducing the incidence and prevalence HAIs in healthcare settings.^{1,2}

The action of performing hand hygiene by healthcare professionals as a risk mitigation strategy for the minimization of the risk of HAIs has been advocated since the 1800s.^{1,6} Hand hygiene is recognized as an essential practice for healthcare professionals as part of standard and transmission based precautions.^{1,2} Despite this evidence-based knowledge and advocacy of hand hygiene practices for healthcare professionals, persistent issues relating to compliance, practice and behaviors by healthcare professionals remain apparent in healthcare today.¹ Hand hygiene compliance by healthcare professionals varies across countries, healthcare settings and professional disciplines.^{1,2}

Patients have a vested interest in their healthcare professionals performing hand hygiene, as most patients desire the best possible outcomes, including absence of preventable infections related to their healthcare encounter.¹ Innovative approaches to improving hand hygiene practices of healthcare professionals now include the empowerment of and partnering with hospitalized patients. This strategy involves patients speaking up to healthcare professionals and asking them to perform hand hygiene.¹ This transition to an active participatory role is believed to necessitate cultural and behavioral shifts on the part of the patient and healthcare professionals, and challenging existing beliefs and roles of the patient and care provider.^{1,14}

There is policy level support for inclusion of patients in hand hygiene campaigns and the promotion of the active involvement of patients as partners with healthcare professionals to influence their hand hygiene practices.^{1,2} Various patient safety campaigns include a patient empowerment or partnering component and this extends to hand hygiene campaigns including the WHO First Global Patient Safety Challenge Clean Care is Safer Care¹ and the Centre for Disease Control (CDC) Guideline for Hand Hygiene in Health care Settings.¹⁵

However there is a notable paucity of qualitative evidence relating to the phenomena of the patient experience when partnering with healthcare professionals for hand hygiene compliance. It could be suggested that this lack of available data regarding the lived experience of the patient when partnering with healthcare professionals for hand hygiene compliance is an important missing piece of information relating to this intervention.

The motivation for this review and thesis is therefore to synthesize the available

qualitative evidence to understand the possible connections between the core concepts of: a) hospital acquired infection, b) hand hygiene, and c) partnering, from the experiential perspective of healthcare professionals and patients not captured in quantitative research. Qualitative synthesis may help inform contextual practices of partnering for hand hygiene, and point to further research that is required to understand the behaviors and cultures surrounding this intervention.

Concept 1: Healthcare associated infections

History of the germ theory and link to HAIs

The risks associated with HAIs is not a new phenomenon, having been recorded throughout history. Healthcare associated infections and the risks to patients are still present in modern day healthcare facilities.^{1,2} In the 1600s (1677), microorganisms were reportedly discovered when tiny organisms which were called animalcules were seen through a simple microscope by a non-medical draper named Antoni van Leeuwenhoek.¹⁶ At the time there was no connection drawn between these organisms and the development of disease.

It was not until the second half of the 1800s that Louis Pasteur (1822-95) developed a germ theory, which proposed that many diseases were caused by the presence and actions of microorganism or germs within the body.⁵ During this point in history, another notable name was connected to the practice of infection prevention and control – Ignaz Semmelweis. Semmelweis was a Hungarian physician who proposed in 1847 that improving hand hygiene practices could drastically reduce the number of women dying after childbirth.^{7,8}

Between 1854 and 1856 during the Crimean War, the science of hospital infection and cross infection was developing. Florence Nightingale transformed a British military hospital located in Scutari, now known as Istanbul, from a place of horrendous standards with high mortality rates, to one that was efficiently and smoothly run.¹⁷ The legacy of Nightingale's work contributed to the revolution of practices relating to the prevention of infection in hospitals in the United Kingdom.¹⁸

Further understanding of the germ theory and need for sterility to minimize the risks associated with HAI emerged from the work of Joseph Lister, a professor of surgery in Glasgow.⁵ In 1867, Lister presented work on surgical sterility, which led to a reduction in the risk of infection in surgery.¹⁹ Building on the work of Lister, Dr

William W. Keen (1837–1932), an American surgeon, also demonstrated the importance of infection control and this led to the development and implementation of Keens Surgical Set-up.^{5,19} This set up standardized practices related to creating a clean theater environment, sterility of instruments as well as patient and wound site preparation and healthcare professionals hand hygiene with soap and water followed by a sublimate solution.¹⁹

In 1891 there was further improvement on the listerian practices, with heat sterilization of instruments being initiated.¹⁹ This was followed by the introduction of the use of sterile gowns and caps in 1883 and surgical masks in 1897.¹⁹ The use of rubber gloves became widespread after 1890 when William Stewart Halsted (1852-1922) commissioned the Goodyear rubber company to fashion gloves for his nurse to protect her hands from the mercuric chloride solutions used to disinfect the instruments.¹⁹

During the 20th century, as scientific knowledge expanded, so did the advancement of techniques to reduce HAIs through infection control practices, including the use of prophylactic antibiotic drugs, heat sterilization of instruments and microbial barriers.¹⁹ By the mid-20th century, some surgeons, microbiologists and infectious disease physicians had focused their studies on the epidemiology and control of HAIs.^{5,19}

During the 1950s, penicillin resistant *Staphylococcus aureus* infections were identified in hospital nurseries, highlighting the importance of techniques to prevent hospital infections that were not reliant upon antibiotic therapies.¹⁹ During the 1960s, hospital-based infection control efforts had been established in scattered hospitals throughout the US and during the 1970s the number of hospitals with HAI control programs increased substantially. By the early 1990s HAI control programs were established in virtually every US hospital.¹⁹

HAI still a modern day risk for healthcare settings

The spread of microorganisms between patients within modern day healthcare facilities and the subsequent risk of infection is well documented and still presents a significant risk to patient safety.¹ Healthcare associated infections are a worldwide issue in healthcare, leading to pain and suffering for patients and their families; these adverse events prolong hospital stays and are costly to the health system.²

The WHO data on rates of HAIs in developed countries, with rates in the US at 4.5%, UK and Ireland 7.6%, Scotland 9.5%, Norway 5.1%, Greece 8.6% and Canada 10.5%, all indicate the seemingly intractable nature of HAIs.¹ In Australia, acute healthcare facilities report around 200,000 HAIs each year.²

Healthcare associated infections are a serious complication associated with healthcare, and it has been reported that these infections are the fifth leading cause of death in acute hospitals and that one third of these infections is preventable.²⁰ Additionally, there is an increasing number of infections being caused by multi resistant organisms, such as methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant *Enterococcus* (VRE) and other emerging multi resistant organisms, that are associated with poorer outcomes for patients and high financial costs associated with prolonged treatment.¹

Healthcare associated infections present not only significant costs in terms of patient pain and suffering, but also in dollar terms, with figures reported to be the billions of euros and dollars.¹ A recent study in Europe reported hospital-wide prevalence rates of HAI of 4.6-9.3%, which translates to an estimated five million HAIs contributing to 135,00 deaths per year and representing around 25 million extra days of hospital stay, with a corresponding economic burden of 13-24 billion euros.¹ In 2002, the US also had an estimated HAI incidence rate of 4.5%, corresponding to 9.3 infections per 1000 patient days and 1.7 million affected patients, with an annual economic cost of US\$6.5 billion.¹

Infection prevention and control programs and campaigns and the associated recommended interventions and practices have been developed to mitigate the risks and costs of infection to patients.^{1,2} Infection prevention and control programs within healthcare settings aim to improve patient safety and healthcare outcomes. Programs for reducing HAIs increasingly consider both human and systemic factors associated with the transmission of infectious agents and require an understanding of transmission within healthcare settings.²

How infection is spread and the “chain of infection”:

The development of an infection usually encompasses a number of contributing factors, and there are various models that describe the links or components that contribute to a patient developing an infection. One particular model describes three

major contributing factors, often referred to as the “chain of infection”^{2(p18)} (see Figure 1). The chain of infection includes a source or reservoir of infectious agents, a susceptible host (patients and staff represent both sources of infection agents and susceptible hosts) as well as a mode of transmission for microorganisms.² The chain of infection also informs where risk mitigation strategies can be targeted, such as interrupting the mode of transmission by compliance with hand hygiene practices. This model forms the basis for infection prevention control practices as it identifies major contributing factors to the development of infection as well as critical control points for preventative actions and interventions.²

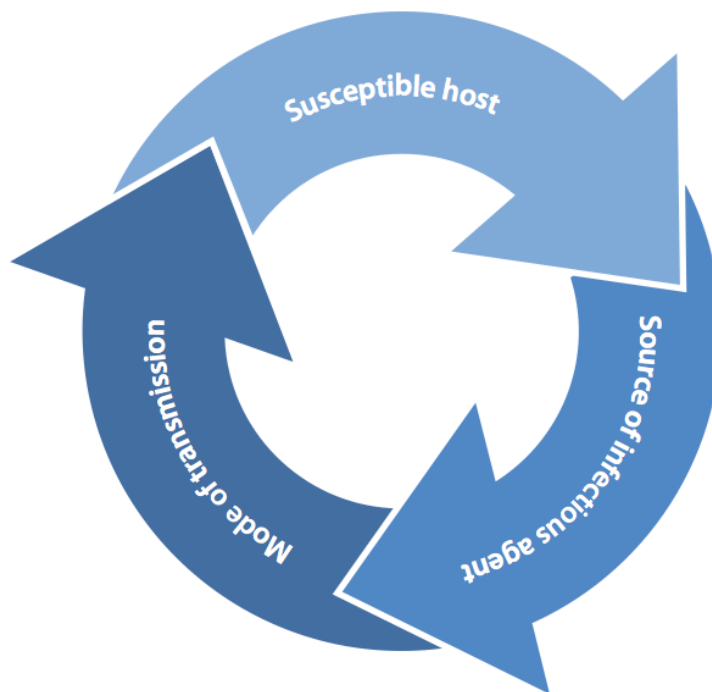


Figure 1: The “chain of infection”^{2(p18)}

Infection prevention and control

Infection control guidelines advocate that “infection prevention and control is everybody’s business”^{2(p7)} and that the responsibility for the success of an infection control program applies to everybody working in and visiting a healthcare facility including administrators, staff, patients and carers.²

Core infection prevention and control actions include the implementation of standard precautions and transmission based precautions (formally known as additional precautions). Standard precautions are defined as work practices aimed at minimizing the risk of transmission of infection (predominantly via blood/body fluids via contact) and apply to the care of all patients, regardless of their known or perceived infection risks.² Transmission based precautions are implemented when standard precautions alone may be insufficient to interrupt the transmission of infectious agents (predominantly used for contact, droplet, airborne transmission and significant organisms) and these precautions are tailored to the specific mode of transmission of the infectious organisms.²

New emerging threats HAIs and antibiotic resistant organisms

New and emerging risks to patients relating to HAI involving the emergence of antibiotic resistant bacteria may hark back to healthcare in the pre antibiotic era when infections led to significant morbidity and mortality. Antibiotics developed since the 1950s have provided a revolution in patient care and the treatment of infection.⁵ However these powerful drugs have also been accompanied by the appearance of resistant strains of microorganisms.²¹ The work of Howard Florey and Alexander Fleming, which led to the discovery and development of Penicillin in the 1940s onwards, was accompanied with a note of caution from Fleming himself, who cautioned the potential for resistance to penicillin if used too little or too much.²³

The period between 1950 and 1970 has been described as the golden era of discovery and use of antibiotics, with the years since the 1980s representing the lean years relating to the development of new antibiotics and the escalating development of microbial resistance.²¹ Alarming, CDC reports that in the US, at least two million people become infected with antibiotic resistant bacteria and at least 23,000 die each year as a result of these infections.²²

In the pre antibiotic era, medical experts such as Semmelweis advocated hand washing as a way of avoiding infection.⁷ Early warnings from Dr Howard Florey who developed penicillin relating to antibiotic resistance and Semmelweis's advocacy for hand hygiene as principals for infection prevention and control may once again be considered *de rigueur* for modern day healthcare providers and facilities.²³

Concept 2: Hand hygiene

Hand hygiene (excluding pre surgical hand scrubbing) represents a general term applying to processes aiming to reduce the number of microorganisms on hands.² This includes the application of a waterless antimicrobial agent (e.g. alcohol based hand rub) to the surface of the hands, the use of soap/solution (plain or antimicrobial) and water (if hands are visibly soiled), followed by patting dry with single use towels.²

Hand washing in healthcare aims to remove dirt, organic material and microbial contamination from hands as a result of contact with patients or the environment.¹ Hand washing requires the use of water and soap/detergents to dissolve and remove soiling from hands. Soaps used for hand washing can either be a plain non-antimicrobial soap or a soap product that contains an antiseptic agent.¹

The use of alcohol based hand hygiene (ABHH) products (liquid, gel or foam type rubs) is recommended in healthcare when hands are not visibly soiled.^{1,2} Most alcohol based hand antiseptics contain ethanol, isopropanol or a combination of the two (60-80% alcohol being most effective) as well as skin conditioning agents.¹ Alcohols have rapid germicidal properties and exert an antimicrobial activity due to their ability to denature proteins and are reported to remove organisms more effectively and with less irritation than hand washing with soap and water.¹ Additionally, ABHH products require less time to use and having them available at the patients bedside has been reported to increase hand hygiene compliance by healthcare professionals.¹

Hand hygiene guidelines for healthcare professionals in healthcare settings

As previously described, of the chain of infection model as a conceptual framework for infection prevention and control identifies key elements that are required for the transmission of infectious agents in healthcare settings.² The practice of hand hygiene by healthcare professionals plays a key role in interrupting the chain of infection, especially at the point of the mode of transmission. Interrupting the mode of transmission of infectious organisms reduces the risk of HAIs in patients.^{1,2}

Worldwide, hand hygiene campaigns and guidelines have been growing in profile and promotion. Internationally, the WHO provides clear guidelines and standards relating to hand hygiene in healthcare.¹ From 2005 to 2009, the WHO also launched

a number of patient safety campaigns, which included recommendations for hand hygiene practices for healthcare professionals.¹

In 2005, the WHO introduced the first Global Patient Safety Challenge “Clean Care is Safer Care” (CCiSC) as part of its world alliance for patient safety.¹ In 2006, the advanced draft guidelines on hand hygiene in healthcare were published and a suite of implementation tools were developed and tested. In 2008, the first Global Hand Washing Day was observed on October 15 and in 2009 the WHO Patient Safety Initiative was established with the associated guidelines and tools on hand hygiene for the “SAVE LIVES: Clean Your Hands” campaign.¹

The My 5 Moments for Hand Hygiene was promoted by the WHO as part of the WHO Guidelines on Hand Hygiene in Healthcare 2009.¹ The Five Moments for Hand Hygiene represent the zones, critical sites and associated indications for hand hygiene as per the guidelines.¹ The aim of the My 5 Moments for Hand Hygiene was to provide a model that could be adopted across settings, countries and contexts.¹

The 2009 WHO hand hygiene guidelines note that alcohol based hand rubs “are the only known means for rapidly and effectively inactivating a wide array of potentially harmful microorganisms on hands”.^{1(p49)} The use of these products in healthcare was recommended as a way to facilitate optimal hand hygiene compliance due to ease and speed of access as well as cost benefits.¹

During the 2000s, the CDC published revised guidelines for hand hygiene with recommendations to use alcohol based hand rubs for decontamination of hands between each patient contact (of non-soiling type) and the use of liquid soap and water for cleaning visibly contaminated or soiled hands.¹⁵ The Healthcare Infection Control Practice Advisory Committee (HICPAC) guidelines indicated there was good evidence that direct patient contact resulted in hand contamination by pathogens and that studies showed the superiority of 70% alcohol/alcohol based antiseptic hand rubs compared with medicated and non medicate soap.¹⁵

The HICPAC guidelines for hand washing practices in hospitals primarily advocated hand washing with non antimicrobial soaps while washing with antimicrobial soap was advised before and after performing invasive procedures or during care for high

risk patients.¹⁵ Alcohol-based solutions were recommended only in situations where sinks were not available. In 1995, the HICPAC guidelines advocated the use of antimicrobial soap or a waterless antiseptic agent for cleaning hands upon leaving the rooms of patients infected with multidrug resistant pathogens.¹

In Australia, key documents that either govern or guide infection prevention and control healthcare practice include the Australian Commission on Safety and Quality in Healthcare National Safety and Quality Health Service Standards,¹⁰ the Australian Guidelines for the Prevention and Control of Infection in Healthcare and Hand Hygiene Australia (HHA).^{2,3}

The My 5 Moments for Hand Hygiene

Hand Hygiene Australia recognizes that improving hand hygiene among healthcare professionals is currently the single most effective intervention to reduce the risk of hospital acquired infections in Australian hospitals.³ Hand Hygiene Australia promotes the WHO Five Moments for Hand Hygiene which are considered the critical times when hand hygiene should be performed".³

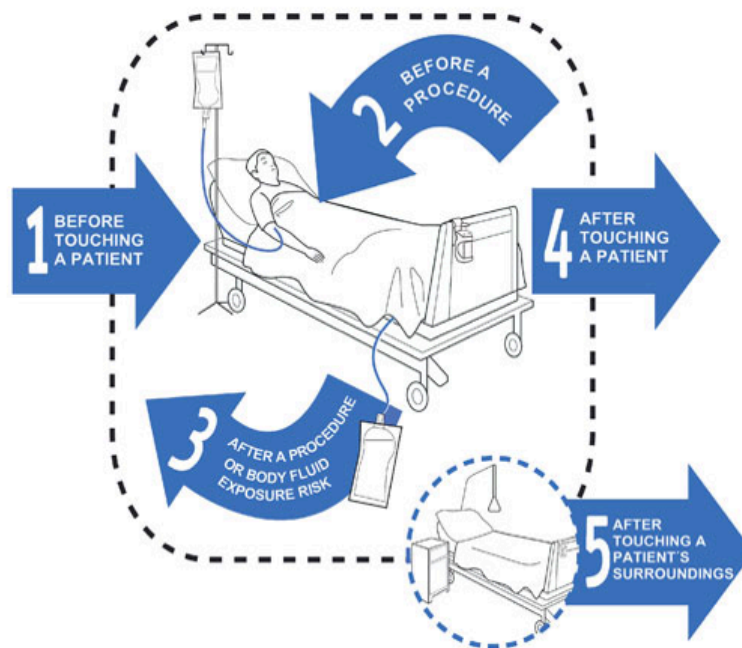


Figure 2: The My 5 Moments for Hand Hygiene³

The five moments as shown in Figure 2 are as follows:

Moment One – before touching a patient

Moment Two – before a procedure

Moment Three – after a procedure or body fluid exposure risk

Moment Four – after touching a patient

Moment Five – after touching a patient's surroundings

Supporting evidence on hand hygiene and HAIs

Hand hygiene reduces the presence of microorganisms on hands that could otherwise be transferred between patients, healthcare professionals and the environment, objects and people.¹⁵ While antibiotics have reduced risks, viral illnesses as well as new and emergent bacterial infections necessitate a continued focus on preventative measures, such as hand hygiene.

Pandemic and avian influenza is known to be transmitted via human hands. In a study by Grayson and colleagues,²⁴ hand hygiene was reported to be highly effective in reducing influenza A (H1N1) virus on human hands.²⁴ In this study the hands of healthcare professionals were contaminated with live human influenza A virus and participants were then asked to undertake one of five different hand hygiene protocols. The protocols were: no hand hygiene (control), soap and water, or use of one of three different alcohol based hand rubs. The results indicated minimal reduction in H1N1 after 60 minutes without hand hygiene; however undertaking hand hygiene using either soap and water or alcohol base hand rub was found to be highly effecting in reduction influenza A virus on human hands.²⁴

Hand hygiene, costs, causes, benefits protocols

Healthcare associated infections represent infections that people acquire whilst being cared for in a healthcare facility, and can result in adverse outcomes for patients including further illness, an extended length of hospital stay, slower recovery, and increased stress and lower morale. In addition to the negative outcomes and factors affecting the patient, HAIs are costly in financial terms to the healthcare facilities and the community as a whole.^{1,2}

There is a large body of evidence relating to the clinical and financial effectiveness of hand hygiene as a clinically and cost effective infection prevention and control measure. The WHO reports that a successful hand hygiene campaign, including the supply of alcohol based hand rubs, corresponds to less than 1% of the costs associated with healthcare associated infection.¹ Stone reports that the costs associated with HAIs exceed those related to hand hygiene and that hand hygiene is a cost effective strategy to reduce HAIs.²⁰ Improved hand hygiene practices have been associated with sustained decreases in the incidence of infections caused by multi resistant organisms (MROs) including MRSA and VRE, reductions in HAIs of up to 45% in a range of healthcare settings and also more than 50% reduction in the rates of nosocomial disease associated with MRSA and other multi-resistant organisms one to two years following organizational implementation.²

Hand hygiene and antibiotic resistant organisms

From January 1980 to December 2013, the WHO conducted a systematic literature review of the available evidence on the impact of hand hygiene improvement interventions in the reduction of transmission and/or infections by antibiotic resistant organisms, also referred to as multi resistant organisms (MROs).²⁵ The review primarily focused on studies where hand hygiene was the key intervention and hand hygiene indicators (hand hygiene compliance and/or alcohol-based hand rub [ABHR] usage) were measured along with MRO infection and/or transmission rates.²⁵ The majority of the papers reviewed offered convincing evidence that improved hand hygiene practices led to a reduction of HAIs and/or transmission or colonization by MROs.²⁵ Similarly, the HICPAC guidelines have also identified a reduction of overall HAI prevalence and MRSA cross transmission in the presence of hand hygiene.¹⁵

Hand hygiene and use of gloves in healthcare settings

Glove use by healthcare professionals

Since 1987, there has been a dramatic increase in glove use by healthcare professionals in an effort to prevent the transmission of blood borne pathogens and in outbreak situations.¹ Recommendations for the wearing of gloves by healthcare professionals include situations of direct contact with blood or body substances, mucous membranes, non-intact skin or other potentially infectious material and or when handling visibly or potential contaminated patient care equipment and environmental surfaces.²

The indication for the type of gloves to be worn is based on assessment of the task to be undertaken, the related risk of transmission of microorganisms, and risk of contamination of the healthcare professional's clothing or skin by the patient blood or body substances. Gloves should be of single use and discarded after use and gloves should not be reused or washed/have alcohol gel applied to them.¹ Additionally, part of the risk assessment consideration includes if sterile sites or devices will be part of the treatment undertaken.²

Infection prevention and control professionals follow best practice guidelines and promote and advocate that the wearing of gloves by healthcare professionals does not replace the need for hand hygiene.² Additionally, although gloves play an important role in protecting both patients and healthcare professionals from exposure to infectious agents, gloves do not provide complete protection against hand contamination by pathogens due to potential glove defects or contamination during glove removal.³ Hand Hygiene Australia recommends that hand hygiene is performed with glove use, including before putting on gloves, as indicated when the five moments for hand hygiene are required, and that hand hygiene products should not be applied to gloves.³

It is recommended that healthcare professionals gloves are changed between patients and after every episode of individual patient care".² Gloves are also susceptible to contamination, thus gloves that are not changed appropriately increase the risk of cross transmission.¹ In situations where there is not a risk of blood or body fluid exposure, the incorrect use of gloves by healthcare professionals, such as missed hand hygiene and not changing gloves between patients and or episodes of care, may increase the risk of transmission of organisms and HAIs.^{1,3}

Patient attitudes to glove use by healthcare professionals

Patients' understanding of the importance of hand hygiene and appropriate glove use by healthcare professionals appears varied. Some studies suggest that patients focus on doctors and nurses wearing gloves as an important safety measure and possibly do not recognize the importance of hand hygiene being practiced in conjunction with glove use.²⁶ In a study by Woloski-Wruble and colleagues, 76 inpatients of an Israeli hospital were surveyed to measure their attitudes towards the

use of gloves by healthcare providers.²⁷ Overall, while acknowledging some difference in patient attitudes related to country of origin and previous admission to hospital, the study concluded that hospitalized patients in general support healthcare providers' use of gloves.²⁷

There is an interesting paradox between actual therapeutic efficacy of glove use and the perception of the protection they afford from transmission of microorganisms, and the risk of healthcare associated infections. Although gloves protect both patients and healthcare professionals from exposure to infectious agents that may be carried on hands, they do not provide complete protection.^{1,3} Pathogens can gain access to hands via small deficits in gloves or when gloves are removed. Bacterial contamination has been recovered from the hands of 30% of healthcare professionals who wore gloves during patient contact.³

Patients do not always appear to be aware of the apparent deficiencies relating to the protective functions of gloves and the merits of hand hygiene with some patients reporting feeling safer if healthcare professionals wear gloves while providing care.²⁶ In a study by Wyer et al. in 2015, it was reported that one of the patients in the study believed that when clinicians wore gloves during care they were sterile, and this contributed to his feeling that care is safer when gloves are used as opposed to the practice of hand hygiene.²⁶

Hand hygiene compliance by healthcare professionals

Safe healthcare is a basic society expectation and patient right, and this expectation, informed by empirical evidence, forms the basis for numerous international, national and state level safety and quality standards and guidelines for optimal clinical practice.^{1,2,10} Clinical and non-clinical staff are educated and reminded of their responsibilities regarding this intervention at various levels and times throughout their career including at the undergraduate and postgraduate levels as well as in the workplace.^{1,2} Despite recommended hand hygiene guidelines, compliance by healthcare professionals in the healthcare setting has been reported as being variable amongst professional groups.^{1,2,3}

International data

Healthcare professionals' hand hygiene compliance rates internationally range from as low as 5% to 89%, with an overall mean of 38.7%.¹ The wide variation in the reported rates may be attributable to differing methods used to conduct the observations/audits.¹

Australian data

Since 2009, HHA has been engaged to implement the National Hand Hygiene Initiative; initially in acute care public hospitals.³ The program involves trained auditors utilizing a standardized methodology to undertake observational audits of hand hygiene amongst healthcare professionals, as per the Five Moments for Hand Hygiene. Data is reported by discipline as well as by moment for hand hygiene, and is publicly reported via the hand Hygiene Australia website as well the My Hospitals website.³

According to HHA data, hand hygiene rates in contributing hospitals across Australia have steadily increased from 63.5% in 2009 to 83.9% in 2016.³ The increase in compliance rates is an encouraging trend and represents improvement in overall hand hygiene.³

However, when the HHA data is examined further, there is variation in hand hygiene compliance by moment for hand hygiene as well as by professional discipline. The 2016 data from HHA indicates that there is a higher level of compliance with the moments after touching a patient (87.8%) and after a procedure or body fluid exposure risk (90.5%) when compared to the moments before touching a patient (80.6%) and before a procedure (87.1%).³ Additionally, overall compliance for nurses is noted to be consistently higher, at a compliance rate of 87.28%, in comparison to medical practitioners (72.5%).³

Barriers to hand hygiene compliance by healthcare professionals

The variation in HHA compliance data may be reflective of difference in culture and behavior amongst different healthcare professional groups. A study by Pittet and colleagues in 2004²⁸ explored the hand hygiene performance and beliefs of physicians. The study concluded that physician adherence to hand hygiene is associated with work and system constraints as well as cognitive factors.²⁸ Data from the study revealed that despite strong support, motivation and intention to

perform hand hygiene, negative perceptions dominated attitudes towards hand hygiene after removal of gloves and in relation to being a role model for other professions. Recommendations from this study included “strengthening a positive attitude toward hand hygiene and reinforcing the conviction that each individual can influence group behavior”.^{28(p1)}

Factors affecting hand hygiene practices and adherence to recommendations amongst healthcare professionals are varied and involve institutional, environmental, behavioral and cultural influences. Risk factors contributing to poor compliance with hand hygiene practices, included:¹

- Being a doctor or nursing assistant rather than a nurse (however it is noted that there was variance between doctors from differing specialties)
- Being an intensive care or surgical unit
- Wearing of personal protective equipment
- Caring for a patient in a non isolation room
- Understaffing or overcrowding.

Similarly, Queensland Health also reported reasons for low hand hygiene practices among healthcare professionals, as follows:²⁹

- Environment – sinks are often inconveniently located and/or not available
- Organizational – a lack of clinical role models
- Psychological – a perceived lack of time for hand hygiene due to high workload and understaffing
- Education – for example, the perception that glove use dispenses the need for additional hand hygiene
- Physical impediments – for example, cleaning agents causing skin irritation and dryness.

Hand hygiene is one of the most effective infection control measures aimed at minimizing the risk of transmission of microorganisms and the associated risk of infection,^{1,2} Within healthcare facilities, the hand hygiene practice of healthcare professionals is facilitated by education campaigns, quality improvement strategies and the provision of hand basins and alcohol based hand gels which enables fast and efficient decontamination of hands. Gloves are also provided to minimize risks

associated with microorganisms, but recommended practices stress that gloves are an adjunct to hand hygiene and not a replacement. Despite these facilitators, compliance by healthcare professionals with recommended practices in relation to hand hygiene and glove use is variable and at times poor, representing an infection risk to patients. Patients are made aware of the importance of hand hygiene and are being encouraged to voice concerns about the practice of hand hygiene by healthcare professionals. Patients face challenges regarding their level of understanding regarding hand hygiene and gloves as well as levels of emotional comfort associated with their emerging more active and participatory role in healthcare.

Concept 3: Partnership and patient empowerment

An overview of partnership

Patients as partners in healthcare was discussed by Pomey and colleagues in 2015.³¹ It was posited that for over 20 years, paternalistic healthcare approaches have gradually given way to patient oriented approaches that take into account patients' differences, values and experiences.³¹ Healthcare providers are encouraged to integrate patient participation at the organizational level in many areas with the intention to improve or redesign service delivery by incorporating their experiences and experiential knowledge. This is seen as important in both chronic disease as well as other services delivered by the healthcare system.³¹

Within healthcare there is a movement and an expectation that patients should partner and be involved in their care, including identifying and reducing risks relating to hand hygiene.^{1,2,31} Hand hygiene programs can include strategies that encourage patients to speak up regarding healthcare professionals' non-compliance with hand hygiene.^{1,2} Yet the patient experience appears to differ, with some patients appearing to feel disempowered and reluctant to speak up for fear of retribution from healthcare professionals.^{1,26,30,31}

The concept of empowerment in healthcare

Within healthcare, the term empowerment has different meanings and interpretations; however it has been described as "the process that allows an individual or a community to gain knowledge, skills and attitudes needed to make choices and participate in their care".^{32(p192)}

The concept of empowerment in healthcare was raised in the WHO primary health promotion focus in the 1980s, which advocated that people be enabled to improve their own health.³⁴ During the 1970s and 1980s health promotion focussed on healthily lifestyles such as stop smoking campaigns and healthy eating.³⁴ Within healthcare the term empowerment has come to mean assisting people to have a level of and ability to exert control over factors that affect their lives and this translates into patients possessing and utilizing power and influence over their wishes and care.^{1,32} Empowerment therefore is a dynamic concept where power is mutually shared between patients and healthcare professionals.³²

Additionally, in facilitating the process of empowerment, it is suggested that consideration needs to be given to not only how the powerless attempt to increase their level of influence and power but also how the powerful release power.³⁴ Empowerment is intertwined with enablement and is about changing the nature and distribution of power. The empowered individual has the power and freedom to make choices and to accept responsibility for actions should he wishes to do so, thus empowerment involves autonomy in decision-making.³³

For patients to partner with healthcare professionals, it is suggested that a level of patient empowerment is necessary and that empowerment includes facilitating patient participation, knowledge, skills and health literacy, and creation of a safe environment in which they can express these behaviors. Healthcare professionals are seen to have a pivotal role in creating an environment where the process of empowerment is facilitated through mutual respect and support, and knowledge sharing with patients.¹

It has been stated, "Healthcare professionals cannot empower people, people can only empower themselves. However, the process of empowerment can provide the resources, skills and opportunities to develop a sense of control."^{33(p310)} Precursors to implementing empowerment strategies should include motivation, participation and mutual commitment to the behaviors and cultures that surround patient empowerment.¹ The implementation of patient empowerment models should also consider how patient empowerment models impact on the nurse- or doctor-patient relationship.³⁵ Patient empowerment may present challenges to traditional approaches in healthcare, where the power, authority and associated power imbalance tilts in the direction of the healthcare professional.^{1,33,36}

Although it is acknowledged that the primary responsibility for the provision of healthcare lies with healthcare systems, there is a growing movement towards involving patients more in a shared approach to their care. It is noted that patient willingness to be empowered is in part dependent on their input into the development of an associated program and also the provision of information and support about what healthcare professionals need to do.^{1,32}

Patient empowerment through education of healthcare professionals

In April 2014, the Josiah Macy Jr. Foundation (a foundation dedicated to improving the health of the general public by supporting the education of health professionals) convened a meeting in Arlington Virginia in the US, called An Urgent Imperative for Healthcare.³⁷ The meeting brought together patients, leaders of patient advocacy organizations, healthcare educators and leaders of healthcare organizations to make recommendations for the urgent reform of both the health profession's education and healthcare practice, in partnership with patients, families, and communities.³⁷

Partnering was recognized as an important aspect of healthcare that would require a fundamental cultural shift in traditional healthcare professional education and practice. Partnering was identified as being about equal, respectful and mutually beneficial partnerships at every level of health related endeavors.³⁷ A Partnership Sweet Spot was depicted to involve patients, families and communities as well as clinical practice and healthcare professional education reform – see figure 3.

Recommendations from the meeting included the need to define the skills required to build respectful and mutually beneficial relationships among all who are engaged in healthcare and the health profession's education; and to build capacity for partnerships among patients, families and communities, and health professions and healthcare organizations.^{37(p10)}

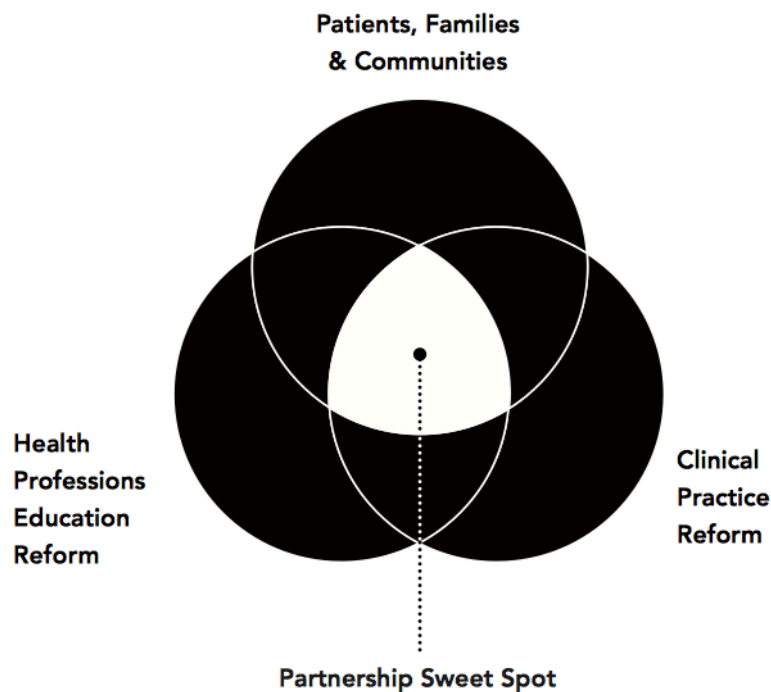


Figure 3: Macy Foundation Partnership Sweet Spot Diagram^{37(p3)}

Achievement of a sweet spot for partnering with healthcare professionals in relation to hand hygiene compliance would require interventions aimed at promoting partnership through education and through tailoring interventions that are sensitive to the prevailing behaviors, cultures, desired outcomes and norms of the community.³⁷ A patient's ability or motivation to partner in hand hygiene compliance is influenced by numerous factors including: health literacy, socio-economic status, educational level, gender, previous health experience, level of perceived or actual empowerment and demonstrated openness of the healthcare professional to be prompted by patients.¹

Within the context of partnering for hand hygiene, the rights of the patient should apply and the expectation that practices of healthcare professionals will enhance their safety while in hospital, including staff complying with hand hygiene practices. Additionally, patients have a right to open communication about their care and to be able to comment and raise concerns, including staff non compliance with hand hygiene. Patients have a right to be shown respect when they raise concerns when and if they choose to partner and participate for example by speaking up for hand hygiene.³⁸

The concept of partnering for hand hygiene compliance

Notably, international, national and state guidelines recommend that patients partner with healthcare professionals and actively participate in reminding them to comply with guidelines and practice hand hygiene while providing clinical care.¹ In Australia, the Australian guidelines for the prevention and control of infection in healthcare encourage involving patients in hand hygiene by informing patients about the risks relating to hand hygiene, what healthcare professionals should be doing as part of hand hygiene practices, and stating that “it’s okay to question healthcare professionals about their hand hygiene practices”.^{2(p42)}

Internationally, the importance of partnering and empowering patients is promoted and recommended as part of successful hand hygiene compliance campaigns. The WHO provides recommendations and in some instances mandates standards relating to patient partnering and empowerment for enhancing and improving hand hygiene compliance amongst healthcare professionals.^{1,43}

There is a movement towards involving patients in hand hygiene campaigns and as active partners in their care.^{1,43} Various hand hygiene campaigns have a patient partnering or involvement component.^{1,32,43} General principles associated with these programs involve the patients speaking up, asking healthcare professionals to perform hand hygiene before providing an episode of care.^{1,32} Alternatively patients can positively reinforce the desired behavior by thanking their healthcare professionals for performing hand hygiene.¹ Other alternatives for patients not willing to verbalize their wishes have even involved the use of non-verbal prompts such as small signs or badges.⁴⁰

Programs for partnering for hand hygiene

Partnering for hand hygiene compliance initially appears to represent a relatively simple bi-directional communication exchange between patient and healthcare professional.⁴¹ This suggests that partnering for hand hygiene is an acceptable and recognized intervention that facilitates opportunities for patients to influence the behaviors of healthcare professionals to improve their compliance with hand hygiene practices.⁴¹ However, as this thesis will demonstrate, the experience surrounding this exchange and interaction is more complex than first appears; there are multiple

personal and professional factors as well as behavioral considerations that influence this initiative and the overall experience for both patient and healthcare professionals.

The WHO acknowledges that the practice of partnership with patients may differ from one country to another and from one healthcare setting to another.¹ In some countries, patients and their families may be invited to ask staff directly about hand hygiene, while in others, relatives and visitors play an active role in the process of healthcare delivery because of cultural norms and/or staff shortages.¹ Despite differences in partnering with patients for hand hygiene, the WHO recommends it is important to make patients and their families aware that better hand hygiene is crucial for safer care.¹

The WHO Save Lives: Clean Your Hands program has tips for patients to encourage healthcare professionals to undertake hand hygiene.⁴ Suggested tips for patients include encouraging positive interactions with healthcare providers, such as reminding and thanking healthcare providers for hand hygiene with the assumption that this will be understood as a positive intention to prevent infections. Suggested actions for patients include saying the following to healthcare providers: “Thank you for your hand hygiene action”, “Did you clean your hands?” and “Did I remind you about hand hygiene?”.⁴ The tips and advice provided to patients appear in part based on an assumption that the experience of partnering and reminding staff to perform hand hygiene would be a positive interaction and experience based upon a shared objective to avoid infections and transmission of microorganisms.

Another example of a campaign involving patients in hand hygiene is the CDC Clean Hands Count campaign.⁴³ Similar to the WHO campaign, patients are encouraged to ask healthcare providers to clean their hands. The Clean Hands Count campaign aims to improve healthcare provider adherence to hand hygiene recommendations, address myths and misperceptions about hand hygiene, and empower patients to play a role in their care by asking or reminding healthcare providers to clean their hands.⁴³

Within the UK, the National Health Service (NHS) Clean your Hands campaign includes the promotion and encouragement of patient involvement by advocating that it is ok for patients to ask staff about hand hygiene.⁴⁴ The NHS campaign sees the role of visitors and patients as critical and that they should expect to see correct behaviors by healthcare staff.⁴⁴

Hand Hygiene Australia provides information for patients regarding hand hygiene, including the risks associated with HAIs. The information also provides specific information including healthcare professionals always having to perform hand hygiene in front of the patient and if this is not seen patients are encouraged to remind staff.³

Other interventions aimed at promoting partnership have quite differing approaches, ranging from relatively passive interventions such as videos and posters, to education campaigns that promote active patient participation. The more active hand hygiene partnering campaigns included patients being encouraged and expected to actively monitor and intervene in breaches of practice by their healthcare professional, including missed moments for hand hygiene.^{1,40}

Hand hygiene and partnering – drivers, considerations and concerns

Patients share a concern for their care and a positive attitude about engaging in their safety at a general level, but their intentions and actual behaviors vary considerably.^{1,14,45} Patients are potentially effective partners in their care as they are present during their every healthcare intervention, including as observers of the hand hygiene practice of healthcare professionals. Patients are uniquely positioned to communicate with healthcare professionals and ask questions and inform providers about experiences, occurrences and observations.¹

Despite patients being in a position where they can express concerns about their care and identify adverse events, concerns do not always result in engaging with healthcare professionals to voice these concerns or preferences.¹ There was a suggestion in some studies that patients may feel that the responsibility of ensuring their safety is being disproportionately shifted from the healthcare professional to themselves.^{1,14}

Theory of planned behavior and patient behaviors related to partnering with healthcare professionals for hand hygiene

The key act of following through and translating intention into action is influenced by both internal and external factors.¹ These include personal and professional belief systems, previous experiences with healthcare systems, demographics, assumed roles, health literacy, traditions, fear, health status and levels of patient confidence.^{1,14} Additionally, the actions of patients and act of partnering can be affected by the level of perceived influence and empowerment of patients regarding their ability to influence the behaviors of healthcare professionals and their healthcare outcomes.^{1,46}

Patients have an underlying concern regarding the risk of infection and this may contribute to a willingness to participate and be empowered to participate in hospital infection control programs including hand hygiene improvement.¹ In a paper by Lawton and Armitage,⁴⁷ the United Kingdom campaign “Clean Your Hands” was cited as an example of a campaign that involved patients in hand hygiene.⁴⁷ As part of the “Clean Your Hands” campaign, patients were encouraged to question staff about their hand hygiene practice; however although quantitative evidence indicated gel usage increased and infections reduced, there was a reluctance by 57% of patients to question staff.⁴⁷ A reluctance to question staff and an apparent unease about challenging healthcare professionals was expressed in other studies.^{1,32,45,48} The evidence also suggests variations in which healthcare professionals patients indicated they would ask to perform hand hygiene, with it being reported that patients would be more likely to ask a nurse (91%) to wash their hands than a doctor (33%).³²

It has been suggested that education and increasing patient health literacy levels will facilitate empowerment and speaking up.^{1,32} Interestingly, evidence from healthcare professionals who become a patient themselves have reported having a sense of unease about challenging those providing their care, even when they know something is wrong.³⁰ In an opinion piece, an experienced senior microbiologist from the United Kingdom (UK) and former editor of the *Journal of Hospital Infection* reported on a personal experience with the healthcare system including healthcare professionals’ hand hygiene practices.³⁰

Dancer reported that hand hygiene notices were put up on the walls of UK hospitals with the intention of empowering patients to challenge staff on their hand cleaning practices; however Dancer considered that the intervention “failed utterly”.^{30(p190)} Dancer also reported “brusque attitude from nurses”^{30(p190)} that intimidated a less than welcome attitude if anything was said. Dancer concluded that patients were not only vulnerable but also extremely grateful for their care. Asking staff whether they had clean hands repudiated the latter and cast doubt on their overall quality of care.³⁰

Quantitative systematic reviews have explored the effectiveness of either promoting engagement with patients in selected safety initiatives (including medication safety, cardiac rehabilitation programs, hand hygiene, anticoagulation therapy, falls prevention and others). In a review, interventions aimed at improving patient safety in hospital (including hand hygiene) and patient engagement were critically examined and synthesized.⁴⁹ The review concluded that although “patient engagement in safety is appealing, there is insufficient high-quality evidence informing real-world implementation”.^{49(p1)} The recommendations included further work needed to evaluate the effectiveness of interventions that incorporate engagement to improve patient safety as well as investigating strategies to assess and overcome barriers to a patients willingness to engage.⁴⁹

Patient attitudes to partnering for hand hygiene compliance

Regardless of the patient’s positive attitude and intention to partner, their ability or confidence to partner with healthcare professionals varies.¹ Partnering is influenced by numerous factors including: health literacy, socio-economic status, education level, gender, previous health experience, level of perceived or actual empowerment and demonstrated openness of the healthcare professional to be prompted by patients and consumers.^{1,32} Patients are less likely to engage in behaviors that require questioning of medical authority.¹⁴ A patient’s intention to act and engage and the subsequent taking of the action of engagement or partnering with healthcare professionals are therefore not well correlated^{1,14,32,50}

Patients who have ongoing exposure to the healthcare system may over time increase their level of confidence to partner with healthcare professionals. In 2008 Meyer and colleagues reported the concept of empowerment of patients with severe chronic health conditions.⁵⁰

Participants were undergoing chronic hemodialysis. Patients who were provided with detailed and structured information experienced a deeper level of understanding and strengthened sense of control.⁵⁰ The study concluded that facilitating empowerment could positively enhance self care and disease specific skills in patients with severe chronic illnesses.⁵⁰

Meyer and colleagues proposed that healthcare professionals have an important role to play in promoting a sense of empowerment and control within patients with chronic health conditions. However empowerment of patients with either chronic or acute health care encounters may be a model for future care.⁵⁰ Patient empowerment may be a model that facilitates moderating of traditional paternalistic and physician sovereignty based care models to an approach which strengthens patient sovereignty and eventually the quality of care.⁵¹

There are differing levels of thought amongst patients about their role in partnering with healthcare professionals.^{1,14} Some patients felt they would be quite comfortable to speak up to healthcare professionals while others did not feel comfortable or that is was not their role to take this action.²⁶ Questions regarding whether patients are ready for the role of active participant in their care and safety are yet to be systematically addressed from the patient perspective.⁴⁸

Healthcare professionals' attitudes towards partnering with patients for hand hygiene

The complexity of attitudes and the influences of hand hygiene behavior amongst healthcare professionals was discussed in a 2016 research paper by Jammali-Blasi et al.⁵² This study surveyed acute care clinicians on their views on factors influencing hand hygiene practice, and concluded that respondents regarded organizational strategies more favorably than clinician or patient focused strategies.⁵² The results also indicated that doctors were less likely to report having participated in hand hygiene education or were familiar with the Five Moments for Hand Hygiene.⁵² The study also recognized that there was insufficient evidence surrounding the strategy of patients as reminders for staff to perform hand hygiene, due to considerations of the patient's willingness to assume this role and participate as well as the acceptance of this strategy amongst healthcare professionals.⁵²

The risk of potentially preventable HAIs combined with the reported and somewhat poorly developed organizational systems to protect patients from the risk of HAI and the role of physicians as change agents have been the subject of discussion.⁵⁴ Physicians in some settings are regarded as role models and therefore system engineers. It was noted that patients had an increasing awareness of the risk of infection and an expectation of safe practice by their healthcare professionals when physicians were engaged in hand hygiene.^{54, 55} Healthcare professionals generally consider that HAIs can be reduced to a greater or lesser degree if patients ask if the staff have cleaned their hands before touching them. Inviting patients to remind healthcare professionals about hand hygiene through the provision of individual alcohol-based hand-rub containers and actively supporting an “It’s OK to ask” attitude were perceived as the most useful interventions by both patients and healthcare professionals. However, it was suggested that further work is required to understand and refute the myth among healthcare professionals that patient involvement undermines the doctor-patient relationship.⁴⁵

Facilitators to partnering for hand hygiene compliance

It has been suggested that patient empowerment and partnering can be enhanced when the patients are encouraged to do so by their healthcare professional. Patient empowerment has been found to increase when a patient is given explicit permission by a healthcare professional.⁴⁵ There is a need to further develop programs that empower both healthcare professionals and patients so that they can become more comfortable in their roles.^{45,55}

Research methods

The Joanna Briggs Institute (JBI) approach to systematic reviews was the methodology utilized for this research.¹¹ This thesis reports on the methods and results of a systematic review with the meta-aggregation of findings from the three qualitative research papers using the JBI tools and protocols.¹³ The meta-aggregation process involved the aggregation and synthesis of the findings to produce the final synthesized findings. The synthesized findings may be used to guide evidenced based practice via the suggested implication for research and practice.¹¹

The utilization of a qualitative review facilitates the understanding of the patient’s partnering experience in relation to hand hygiene compliance by healthcare

professionals. It is acknowledged that the patient's experience is unique and dependent on numerous personal factors; however the meta-aggregative approach allows themes to emerge that suggest common patient experiences relating to the phenomena of interest.¹¹ The method for searching and selecting papers, as well as extracting and synthesizing data relating to this phenomenon of interest is explored in Chapter three of this thesis.

Definition of terms

Hand hygiene

Hand hygiene is a general term to describe processes aiming to reduce the number of microorganisms on hands. These include: application of a waterless antimicrobial agent (e.g. alcohol based hand rub) to the surface of the hands; and use of soap/solution (plain or antimicrobial) and water (if hands are visibly soiled), followed by patting dry with single-use towels.²

Adult acute care setting

Within the context of this thesis, acute care setting represents predominantly hospitals that provide a range of different services for adult patients (> 18 years of age) with varying disease conditions.¹

Partnering

Within the context of this thesis, partnering refers to the support for patients to actively participate in the improvement of the patient experience and patient health outcomes.¹⁰

Empowerment

Empowerment in healthcare generally refers to the process that allows an individual or a community to gain the knowledge, skills and attitude needed to make choices about their care.¹

Healthcare associated infections

Healthcare associated infections are infections acquired in healthcare facilities (nosocomial infections) and as a result of healthcare interventions (iatrogenic infections), and which may manifest after people leave the healthcare facility.²

ConQual

ConQual is an acronym for an approach to generate a qualitative summary of findings table that aims to classify qualitative study findings based on a rating of “confidence”, with consideration of criteria relating to type of data and dependability and credibility of findings.¹²

Conclusion to this chapter

There appears to be many influences on patient safety behaviors including hand hygiene practices and the interactions between patients and healthcare professionals. The patient and healthcare professional experience in relation to partnering for hand hygiene compliance is a multi-factorial issue. There appears to be a number of common goals regarding hand hygiene compliance including the prevention of infection. However it could be suggested there are differing considerations, drivers, attitudes, intentions, actions and emotions unique to patients and healthcare professionals that exert an influence on the individual patient and healthcare professional experiences of hand hygiene compliance partnership.¹

Chapter 3: Methodology and methods

Introduction

The systematic review process based on the JBI methodology was the selected approach for the systematic review within this thesis. The JBI protocols and tools enabled the synthesis of qualitative research. The approach encompassed undertaking prescribed steps including comprehensive searching of the literature, appraisal of retrieved papers and meta-aggregation to synthesize the data to formulate recommendations for research and practice.¹¹ Utilizing this methodology facilitated the synthesis of the qualitative evidence relating to the phenomenon of interest and the eventual development of final synthesized findings.

Rationale for the systematic review

The rationale for conducting this systematic review was to critically appraise and synthesize the best available evidence relating to the patient and healthcare professional experience of partnering for hand hygiene compliance in the acute adult healthcare setting. Additionally, the review sought to understand the social meaning of a healthcare culture as drivers of behavior and rituals relating to hand hygiene compliance and to describe the patient and healthcare professional experience relating to patients partnering with healthcare professionals for hand hygiene compliance. At the time of submission for publication, there were no publically available protocols or completed, published systematic reviews available on this topic. This systematic review was based upon an *a priori* protocol that had been subject to blinded peer review, and was subsequently published in the *JBI Database of Systematic Reviews and Implementation Reports*.¹³

Systematic review methodology

Meta-aggregative reviews are intended to inform practice and recommendations that arise from the data and aim to be practical statements that indicate a line of action, which may be taken to inform policy or practice. Qualitative research is a broad term

used to describe various critical, interpretive and constructivist research methodologies including (but not limited to) ethnography, phenomenology, narrative analysis and grounded theory.¹¹

Qualitative research allows for the analysis of the human experience, as well as cultural and social phenomena, seeking to understand and analyze human phenomena or experience in naturalistic or true to life settings. Researchers who undertake qualitative research seek to understand and interpret a phenomenon as it is experienced. The evidence from qualitative research comprises data that is expressed in experiences or meanings of acts or events, as opposed to quantitative based measurements.¹¹ Qualitative research data provides a deeper, nuanced understanding of how individuals and communities perceive healthcare, and engage in their own healthcare and decision making relating to their health.

Common methods for qualitative research

There are a number of qualitative methodologies common to health research, including:

- Phenomenology which is a method of study to discover and understand the meaning of human life experiences.⁵⁷
- Ethnography which is the study of culture that recognizes everyday life in a community, ward, etc. and seeks to learn the meaning attached to activities, events and rituals.⁵⁷
- Grounded theory which is a method that unites theory constructions and data analysis.⁵⁷
- Action research which is a method of research that seeks to create self-critical communities as a basis for change.⁵⁷

Qualitative data synthesis

Qualitative research can assist to inform health related policy and practice. Data from the included primary studies are combined and analysed, and subsequently synthesized into synthesized findings. Qualitative synthesis has a number of theoretic bases for different methods to achieve translatable meanings for policy makers and researchers. Different methods include narrative synthesis, qualitative synthesis, meta-synthesis, meta-ethnography, thematic synthesis and secondary research.^{11,57}

This thesis is based on the JBI methodology for qualitative synthesis.¹¹ This approach involves extracting data/findings from the included studies, then following careful examination of the words, and sorting these into groups based upon similarity in meaning. The assembled findings are then categorized, whereby a statement is crafted that brings together the intended meaning of two or more findings. The third phase involves crafting of synthesized findings, which are created by grouping like categories and developing statements that accurately reflect the meanings of two or more categories. This process is described in full in the following protocol. As part of the JBI methodology, assessment and review of the analytical data is undertaken using JBI-SUMARI, a software program designed to enable meta-aggregative synthesis.⁵⁷

Methodological basis for the review

Meta-aggregation is described as a structured and process driven approach to systematic review including establishment of an answerable question, inclusion criteria, documented review method for searching, appraisal and data extraction and synthesis.¹¹

The JBI systematic review process steps are summarized as follows:

- Development of a research protocol (which is peer reviewed), including description of:
 - The question for the review
 - Selection criteria for the literature
 - The search strategy and the time frame to identify relevant literature.
 - Critical appraisal using a standardized JBI tool to appraise studies that meet the inclusion criteria
 - Data extraction from the studies selected
 - Synthesis of the extracted data into findings, categories and final synthesized findings.¹¹
- Assigning grades of recommendations as per the JBI Grades of Recommendation.⁵⁹

Review methods

Objectives

The purpose of this review was to determine the best available evidence in relation to the experiences of the patient of partnering with healthcare professionals for hand hygiene compliance.

Review question

What is the experience of partnership between healthcare professionals (doctors and nurses) and patients in relation to hand hygiene compliance in the acute adult hospital setting?

Inclusion criteria

Types of participants

This review considered qualitative (critical or interpretive) papers that included adult in-patients and healthcare professional, considered to be a healthcare worker (doctor or nurse) in the acute hospital care setting. An adult was considered to be any person aged 18 years or older. It should be noted that consumers in this context are patients and visa versa; the term patient is therefore used throughout this report for consistency.

Phenomena of interest

This review considered studies that investigated the experience of partnership between patients and healthcare professionals (doctors and nurses) in relation to hand hygiene compliance. Specifically this review investigated the phenomenon of partnering from both the perspective of the patient and the healthcare professional.

Types of studies

The qualitative component of the review considered studies that focused on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research. As qualitative studies were identified and on appraisal found to be of sufficient quality for inclusion, this review did not seek alternate forms of evidence such as text and opinion.

Context

The context for the review and subsequent thesis included cultural factors, geographical location, specific racial or gender interests or details about the specific setting. The specific setting was acute care hospitals for adults.

Types of outcome measures (when appropriate)

No outcome statement was included in a qualitative review and thesis as the expressed phenomena of interest was the outcome.

Search strategy

The search strategy aimed to find both published and unpublished studies. A three-step search strategy was utilized in this review. An initial limited search of MEDLINE and CINAHL was undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search using all identified keywords and index terms was then undertaken across all included databases. Thirdly, the reference list of all identified reports and articles was searched for additional studies.

Studies published in English were considered for inclusion in this review. Studies published between 1990 and May 2015 were considered for inclusion in this review as this time period reflects the rise of published, accessible research related to partnering as a construct within the healthcare sector (see Appendix I).

The databases searched included:

PubMed, CINAHL and PsychINFO.

The search for unpublished studies included:

Google Scholar and SALUS for gray literature, as well as newspaper articles and blogs based upon electronic searches by free text key words as described below.

Initial keywords used were:

hand hygiene, compliance, patient participation, empowerment, patient engagement, patient centeredness, partnership, patient safety practices, health literacy, healthcare professional, healthcare worker.

Method of the review

Qualitative papers selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal tools from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI).⁵⁷ Any disagreements that arose between the reviewers were resolved through discussion, or with a third reviewer. Further details regarding included studies – see Appendix II and excluded studies see Appendix III.

Data extraction

Qualitative data was extracted from papers included in the review using the standardized data extraction tool from JBI-QARI.⁵⁷ The data extracted included specific details about the interventions, populations, study methods and the phenomena of interest to the review question and objectives (see Appendix IV).

Data synthesis

Qualitative research findings were pooled using JBI-QARI.⁵⁷ This involved the aggregation or synthesis of findings to generate a set of statements (categories) that represented aggregation, through assembling the findings rated according to their quality, and categorizing these findings on the basis of similarity in meaning. These categories were then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice.

Chapter 4: Results

Description of studies

The systematic search of bibliographic databases, gray literature and reference searching returned 266 citations. Articles were imported from the databases into the Endnote bibliographic software system. A total of eight duplicate citations were identified and removed. The remaining titles and abstracts were screened for eligibility against the inclusion criteria of the review, following which 253 were excluded as they did not meet the inclusion criteria and five papers were retrieved for critical appraisal. On detailed reading, it was apparent that a further two papers did not meet the inclusion criteria and these were therefore excluded (see Appendix III). Three studies were included in the review for data extraction and synthesis of findings (see Appendix II). The publication dates of the included studies were from 2009 to 2015. Studies included healthcare professionals (doctors and nurses) as well as adult in-patients from English speaking acute hospital settings. Included study participants were adults of an 18-56+ age range. The studies included were geographically located in the US,⁶⁰ the UK⁶¹ and Australia.²⁶ The process of searching, screening, inclusion and exclusion of papers are shown in the PRISMA flow chart (Figure 4).

Table 1: Number of studies found and retrieved

Number of studies found	Number selected for retrieval
266	5

The three included studies for final data extraction and synthesis are reported in Table 2 with included study details reported in Appendix II. The two excluded studies with details are reported in Appendix III.

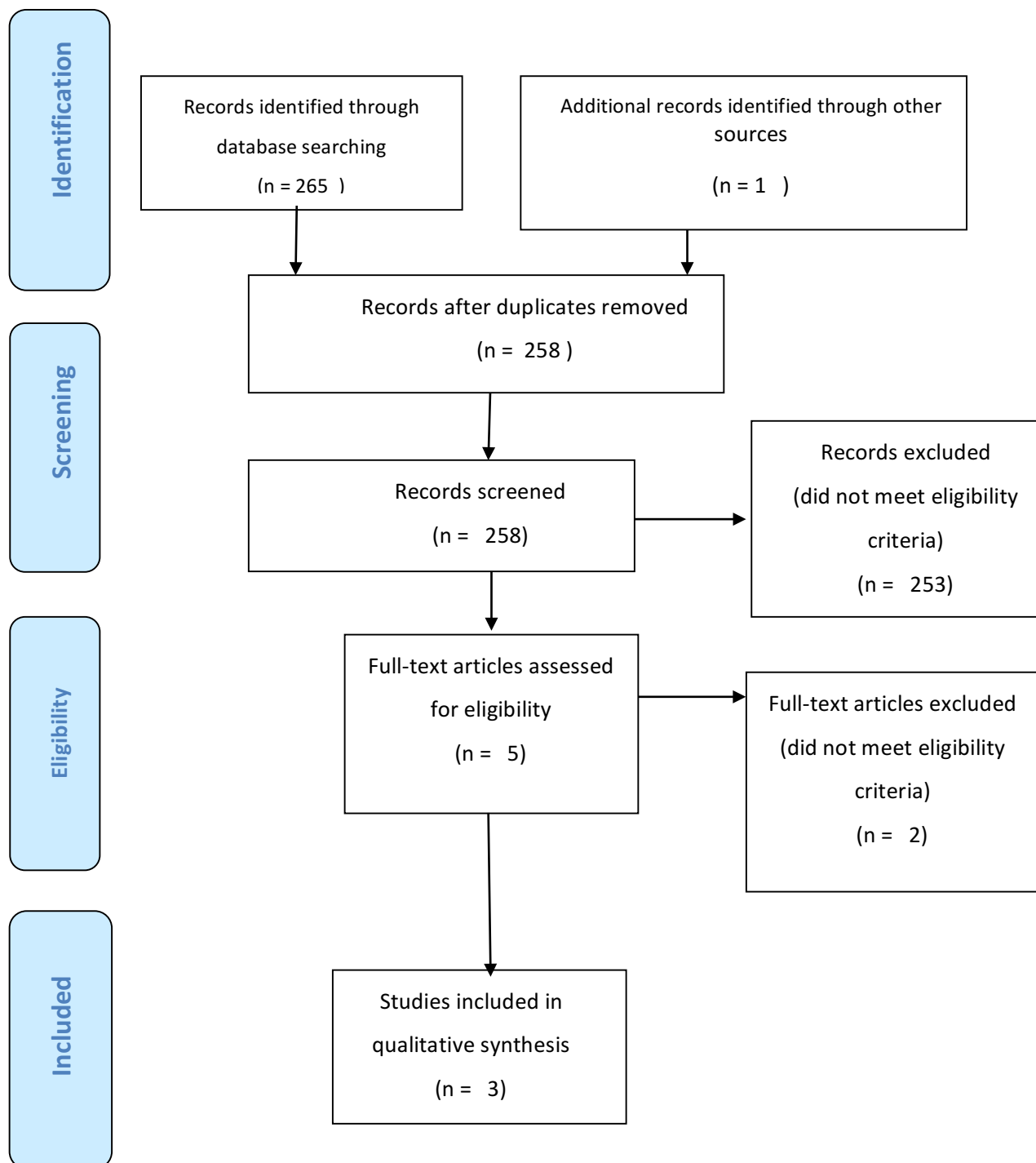


Figure 4: PRISMA flowchart of the study selection process⁶²

Methodological quality

The methods of data extraction included semi-structured interviews and video reflexive ethnography. The semi-structured interviews involved a brief structured list of questions designed to prompt the researcher to discuss key issues. Interviews were audio recorded and transcribed as well as field notes taken.^{60,61} Video reflexive ethnography was utilized in one of the included studies.²⁶ This research methodology involved 300 hours of ethnographic observations including 11 hours of video footage. The reflexive sessions involved the patient and the researcher viewing the video footage on eight occasions and then having unstructured discussions to encourage open dialogue and reflections of not only the activities of the healthcare professionals but also the patients' own beliefs and behaviors.²⁶

As can be seen from Table 3, the included studies scored well for quality assessment. Although only one study had a clearly stated alignment between the methodology and philosophical perspective, all studies demonstrated congruity between methodology and question, methods, analysis and presentation of the data. There was generally poor reporting to locate the researcher either culturally or theoretically, and equally poor reporting on the role of the researcher in terms of potential impact on the research; however, overall, these studies were considered to be of high quality. The methods of data extraction and a summary of participant characteristics are reported below. The two excluded studies were excluded not on the basis of methodological quality; rather, on examination of their methods and methodology in detail required for critical appraisal, it became apparent they were not congruent with the inclusion criteria.

The methodology for the 2014 Seibert et al. study was not stated; however it appeared to be a qualitative descriptive design.⁶⁰ The study utilized semi-structured interviews, audio recordings and verbatim transcribed responses. The aim of the study was to explore barriers to recommended practices that promoted a safe healthcare environment, including hand hygiene. There were 42 participants interviewed with 26 actually participating in the interviews (24 female and two male). Participants represented a variety of characteristics (age range 18-56+ years) and various healthcare professions (predominantly nursing n=16).

The 2009 Burnett et al. study did not include a specific statement regarding methodology; however it appeared to be a qualitative descriptive study that utilized in depth face to face semi-structured interviews and purposeful sampling to explore patients' narratives from their experiences relating to HAIs and hand hygiene.⁶¹ Interviews were guided by a brief structured list developed to prompt the researcher to discuss key issues. Interviews were audio recorded and transcribed, field notes were also taken and data was then thematically analyzed. There were a total of 20 adult patients interviewed either in hospital (n=4) or in their home (n=16) utilizing audio recordings, field notes and transcriptions.

The Wyer et al. study as reported in 2015²⁶ conducted ethnographic fieldwork using video reflexive ethnography, with 300 hours of ethnographical observations, 11 hours of video footage and eight occasions of video reflexive sessions.²⁶ Participation by the 14 English-speaking adults (eight female and six male) was voluntary and the study was conducted in the adult in-patient acute hospital setting. A methodological strength of this paper was the use of co-interpretation of data between the researchers and participants, which was then transcribed and entered into the database.

Table 2: QARI number of studies included and excluded

Number of studies included	Number of studies excluded
3	2

As can be seen from Table 1, there were a total of five studies considered for inclusion; however, through critical appraisal, two studies were excluded, and the following synthesis was therefore based upon three studies, see Table 2. The quality assessment of these three studies is reported in Table 3.

Table 3: Final assessment table (QARI critical appraisal instrument)

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Burnett E, Lee K, Rushmer R, Ellis M, Noble M, Davey P .2010 ⁶¹	U	Y	Y	Y	Y	Y	U	Y	Y	Y
Seibert, D J, Speroni K G, Kyeung M O, DeVoe M C, Jacobsen K H. 2014 ⁶⁰	U	Y	Y	Y	Y	U	U	Y	U	Y
Wyer M, Jackson D, Iedema R, Hor S Y, Gilbert G L, Jorm C, Hooker C, O'Sullivan M V N, Carroll K. 2015 ²⁶	Y	Y	Y	Y	Y	U	Y	Y	Y	Y
%	33.3 3	100. 0	100. 0	100. 0	100. 0	33.3 3	33.3 3	100. 0	66.6 7	100. 0
Y- Yes, N- No, U- Unclear										
<p>JB I QARI appraisal instrument: Critical Appraisal Checklist for Interpretive And Critical Research:</p> <ol style="list-style-type: none"> 1) Is there congruity between the stated philosophical perspective and the research methodology? 2) Is there congruity between the research methodology and the research question or objectives? 3) Is there congruity between the research methodology and the methods used to collect data? 4) Is there congruity between the research methodology and the representation and analysis of data? 5) Is there congruity between the research methodology and the interpretation of results? 6) Is there a statement locating the researcher culturally or theoretically? 7) Is the influence of the researcher on the research, and vice-versa, addressed? 8) Are participants, and their voices, adequately represented? 9) Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? 10) Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? ⁵⁷ 										

All of the included studies were critically appraised utilizing the JBI QARI Critical Appraisal Checklist for Interpretive and Critical Research.⁵⁷ All included papers scored between six to nine out of ten. Studies that did not specifically describe a philosophic perspective but reported or inferred a methodological perspective were rated as “unclear” rather than “No” for question one.

The scoring patterns for the three studies are presented in Table 3 above. The three included studies had the same scoring patterns for answers to the ten appraisal questions with the exception of the following questions:

Q 1: Is there congruity between the stated philosophical perspective and the research methodology?

Q 6: Is there a statement locating the researcher culturally or theoretically?

Q 7: Is the influence of the researcher on the research, and vice-versa addressed?

Q 9: Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?

Findings of the review

This systematic review is based upon data extracted from three papers, which resulted in two synthesized findings supported by four and three categories, respectively (total number of categories = seven). Synthesized finding 1 was supported by four categories from 17 findings. Synthesized finding 2 was supported by three categories from 12 findings. All findings were informed from illustrations from the included studies (see Appendix IV).

Each finding had an assigned level of credibility based upon the Joanna Briggs Institute levels of credibility.⁵⁷ The three levels of credibility are:

- Unequivocal (U) – evidence beyond reasonable doubt
- Credible (C) – although an interpretation, plausible in view of data
- Unsupported (Un) – findings not supported by data

The total number of findings from this systematic review were 29, with 10 being credible, 19 unequivocal and none graded as unsupported. Specifically, synthesized finding 1 had five credible findings and 12 unequivocal findings. 2 had five credible findings and seven unequivocal findings. Refer to Table 4.

Table 4: Included papers and number of findings

Citation	Unequivocal (U)	Credible (C) (equivocal)
Burnett E, Lee K, Rushmer R, Ellis M, Noble M, Davey P. Healthcare-associated infection and the patient experience: a qualitative study using patient interviews. <i>J Hosp Infect.</i> 2010;74(74):42 - 7.	7	1
Seibert D J, Gabel Speroni K, Kyeung Mi O, DeVoe M C, Jacobsen K H. Preventing transmission of MRSA: A qualitative study of health care workers' attitudes and suggestions. <i>Am J Infect Control.</i> 2014;42(4):405-11.	6	2
Wyer M, Jackson D, Iedema R, Hor S-Y, Gilbert GL, Jorm C, et al. Involving patients in understanding hospital infection control using visual methods. <i>J Clin Nurs.</i> 2015;24(11-12):1718-29. First published on line Feb 7, 2015.	6	7
Findings	19 (U)	10 (C)
Total findings	29	

The extracted findings were consistently supported by research participant quotes that adequately informed and supported the finding. Following the assignment of a level of credibility, each of the findings were then categorized or aggregated into statements that represented the findings based on similarity in meaning.

Through this process of categorization, the findings from the included studies were grouped together into a total of seven categories based upon similarity in meaning. The categories were then subjected to meta-synthesis in order to produce synthesized findings for the purpose of providing an evidence base for practice as well as recommendations for practice and research. The synthesized findings, their categories and findings are reported in the remainder of this section.

Synthesized finding 1: Organizational structures, culture and behaviors

Synthesized finding 1 was the result of the meta-aggregation of four categories from 17 findings (see Table 5). The findings were supported by illustrations taken directly from the papers that reflected the patient's, consumer's and/or healthcare professional's voice (see Appendix IV).

Synthesized finding 1:

Organizational structures enable partnering between healthcare professionals and patients for hand hygiene compliance; however the cultures, beliefs and behaviors of healthcare professionals and patients do not fully support this partnership.

Summary:

There is evidence that within organizations there are enablers for partnering for hand hygiene, such as equipment, sinks, information sheets and educational videos; however the behavior and culture do not appear to fully support partnering for hand hygiene compliance between healthcare professionals and patients.

Table 5: Findings and categories for synthesized finding 1

Findings	Categories	Synthesized findings
Hand hygiene should be performed donning gloves initially, hand hygiene was just a good an option as gloves. (C)	Glove use conveys a perception of safety.	<i>Organizational structures enable partnering between healthcare professionals and patients for hand hygiene compliance; however the cultures, beliefs and behaviors of healthcare professionals and patients do not fully support this partnership.</i>
The first thing they noticed was the presence or absence of gloves. (U)		
Some participants believed that gloves used in the footage were sterile when in fact they were just clean gloves. (C)		

<p>The patients in this study placed greater emphasis on the use of gloves over hand hygiene as an important infection control measure. (U)</p>		<p>There is evidence that within organizations there are the enablers for partnering for hand hygiene, such as equipment, sinks, information sheets and educational videos; however the behavior and culture do not appear to fully support partnering for hand hygiene compliance between healthcare professionals and patients.</p>
<p>Cross-contamination between patients or staff to patients was identified as a concern. (U)</p>	<p>Healthcare professionals understand their responsibility to minimize the risk of HAIs to patients and themselves.</p>	
<p>Many healthcare professionals identified no challenges because they considered contact precautions and hand hygiene to simply be standard practice. (U)</p>		
<p>Negative prevention perceptions included concerns that personal protection may adversely affect patient care and inhibit healing derived from physical contact with a caregiver. (U)</p>		
<p>Some healthcare professionals negative attitudes to contact precautions adherence could have significant repercussions for patient safety. (C)</p>		
<p>The healthcare professionals responsibility for patient care was a common positive attitude. (U)</p>		
<p>Time issues were mentioned by healthcare professionals in relation to infection control precautions.</p>		

<p>When asked about how the risk of healthcare associated infection could be reduced, the majority of patients, regardless of their infection status, said that the wards needed more staff, especially nurses. (U)</p>		
<p>Recognized the importance of hand washing as a team. (U)</p>	<p>Partnering for hand hygiene requires enablers such as education to facilitate healthcare professional and patient partnership.</p>	
<p>Knowledge and education opportunities were identified 23 times for the healthcare professionals and 18 times for the patient, visitors and the community. (C)</p>		
<p>Patients as equal partners in preventing infection transmission. (C)</p>		
<p>Patients said that they did not feel comfortable asking questions. Perceived that the doctor and nurse to be the experts and therefore presumed that they would know what they were doing. (U)</p>	<p>Patients and their families have differing levels of comfort in asking questions or challenging healthcare professionals as there is a belief that healthcare professionals are the experts.</p>	
<p>A minority of patients felt that they would be happy to challenge staff. (U)</p>		
<p>The majority of patients said that they felt quite comfortable asking staff questions about their healthcare associated infection or infection prevention and control issues. (U)</p>		

Summary of findings: Synthesized finding 1

The four categories that contributed to synthesized finding 1 were:

1. Glove use conveys a perception of safety.
2. Healthcare professionals understand their responsibility to minimize the risk of HAIs to patients and themselves.
3. Partnering for hand hygiene requires enablers such as education to facilitate healthcare professional and patient partnership.
4. Patients and their families have differing levels of comfort in asking questions or challenging healthcare professionals as there is a belief that healthcare professionals are the experts.

This finding indicated that there is evidence of enablers for hand hygiene practice at an organizational level, such as the provision of hand basins in which to perform hand hygiene as well as the availability of hand gels and rubs. In addition, promotional materials for hand hygiene practices such as information sheets and educational videos are available. However, despite these organizational based facilitators, there is evidence that the behaviors of healthcare professionals and the prevailing culture within the acute healthcare setting do not fully support hand hygiene initiatives such as partnering with patients. Patients themselves also present challenges to partnering with healthcare professionals for hand hygiene compliance, as despite being provided with information and education about the importance of hand hygiene, there is a reluctance to partner due to the perceived lack of knowledge and fear of retribution from healthcare professionals.^{26,60}

There were mixed findings in relation to the importance that patients placed on the action of undertaking hand hygiene versus the wearing of gloves by healthcare professionals. The evidence from the findings intimated that patients acknowledged the importance of hand hygiene, and the wearing of gloves was seen as a normal, highly visible procedure that represented safety. There was a prevailing theme that appeared to indicate that glove use conveyed a perception of safety to patients, and for many patients, gloves had come to represent safety.²⁶

The patient perception that staff wearing gloves represented safety was supported by the illustrations of patients reporting and noticing if healthcare professionals were wearing gloves: “The first thing they noticed was the presence or absence of gloves”.^{26(p1722)} The presence or absence of gloves being worn by healthcare professionals appeared to raise questions and concerns for some patients, with one reported to noting that gloves were not worn and questioning, “Is that normal procedure?”^{26(p1722)}

Staff appeared to understand their responsibility in minimizing the risk of infection, including cross transmission of infections between patients and to themselves. Healthcare professionals expressed a positive sense of responsibility to provide care for their patients and to prevent infection. Additionally, healthcare professionals were concerned about the risks of cross infection between patients, between staff or to their own families. A nurse from the Seibert study was quoted as stating, “First of all I feel responsible for the person I am dealing with, that’s where it really impacts me....If I touch somebody and I haven’t washed my hands properly, then I am going to be the carrier and trigger for that MRSA to go forward”.^{60(p406)}

Healthcare professionals’ concerns about cross infection and the impact on their home life was also expressed, with one stating, “So I know it affects my daily life here and I don’t want to bring anything home”.^{60(p410)} Results on staff experiences included inhibitors to optimal hand hygiene and/or infection control practice, including time constraints, staffing and negative impact of personal protective equipment on patient safety and the inhibition of the healing touch. Staff were reported as stating “getting gowned, gloved, washing my hands before and washing hands after ... it definitely takes a lot of time”.^{60(p407)} Healthcare professionals were also reported as stating, “Well I’m only doing this one little task; it doesn’t matter...do I really need to put on and use all the isolation or all the preventative things I should?”^{60(p406)} Impact on the healing touch was expressed by a nurse who stated, “A barrier to touch, just to provide comfort or a health touch... goes away when you have the barrier of personal protective equipment”.^{60(p406)}

The 2014 study by Siebert et al. noted that healthcare professionals were educated and knew the right things to do in relation to hand hygiene.⁶⁰ Given this evidence, it brings into question what drivers of behavior contribute to poor hand hygiene compliance by healthcare professionals if lack of education or knowledge deficit is

not a barrier. Education of patients on the importance of hand hygiene and how to engage with healthcare professionals was identified as a significant component of hand hygiene education for patients, involving speaking up to healthcare professionals.⁶⁰

Patients and their families had differing levels of comfort and mixed attitudes as to whether to ask questions or challenge healthcare professionals about hand hygiene, as there was a belief that the healthcare professionals were the experts. The patient experience also included tension with regard to expectations that the doctor and nurse were the experts and therefore there was a presumption that they would know what they were doing. One patient when discussing whether or not they would speak up stated, “I’d try, I don’t know if I would do it every time, but I’d be wary of who and I’d tell my nurse”.^{26(p1726)} Another stated, “It would be hard to ask because they’d think you were undermining them”.^{26(p1723)} Some patients stated they felt quite comfortable asking staff questions about their HAIs or infection control issues. A patient was reported as stating, “There was a band of doctors round every day, I would have been happy enough to have asked them”.^{61(p44)}

Synthesized finding 2: Knowledge, relationships and impact on care

Synthesized finding 2 was the result of the meta-aggregation of three categories from 12 findings (see Table 6). The findings were supported by illustrations taken directly from the papers that reflected the patient’s and or healthcare professional’s voice (see Appendix IV).

Synthesized finding 2

Patients have differing levels of knowledge and balance partnering in hand hygiene against its possible detrimental impact on the caring relationship provided by healthcare professionals, out of concern for their wellbeing, health outcomes, treatment and or recovery.

Summary

Patients are concerned that if they speak up about hand hygiene, it may adversely affect their relationship with their healthcare professional and this in turn may translate into receiving poorer care. Patients fear alienation, avoid difficult conversations regarding hand hygiene and endeavor to help the healthcare

professionals save face.

Table 6: Findings and categories for synthesised finding 2

Findings	Categories	Synthesized findings
Patient felt that he could not ask questions or challenge staff because he did not want to alienate himself. (U)	Inhibited by a self-perceived lack of knowledge and concerns about the impact on care.	<p><i>Patients have differing levels of knowledge and balance partnering in hand hygiene against its possible detrimental impact on the caring relationship provided by healthcare professionals, out of concern for their wellbeing, health outcomes, treatment and or recovery.</i></p> <p>Patients are concerned that if they speak up about hand hygiene, it may adversely affect their relationship with their healthcare professional and this in turn may translate into receiving poorer care. Patients fear alienation, avoid difficult conversations regarding hand hygiene and endeavor to help the healthcare professionals save face.</p>
Patient stated that a nurse took a grudge against her when she did challenge. (U)		
Would speak up if she noticed someone had not done hand hygiene but also made a back up plan. (U)		
Fear of offending healthcare professionals and possible repercussions for future care. (C)		
Felt that attempts to learn more about infection prevention and control would result in them feeling negated or even berated. (U)		
Fear of offending, some patients devised strategies that would allow healthcare professionals to save face. (C)		

He insisted he would speak up, however he came to realize he did not always speak up to doctors. (U)	Intentions and the act of speaking up do not consistently occur and patients employ alternative tactics to partner for hand hygiene compliance.	
To compensate for these challenges, participants had developed a range of diversionary tactics. (C)		
When they could not directly observe staff, patients use other senses. (U)		
Patients initially stated that they had no role to play in infection prevention control. (C)	Patients have feelings of passive resignation to the risk of infection.	
The level of patients' confidence in relation to acquiring an infection while in hospital varied. (C)		
The majority of infection patients stated that the communication throughout their stay was poor and that they received little or no verbal or written information. (U)		

Summary of findings: Synthesized finding 2

The three categories that contributed to synthesized finding 2 were:

1. Inhibited by a self-perceived lack of knowledge and concerns about the impact on care.
2. Intentions and the act of speaking up do not consistently occur and patients employ alternative tactics to partner for hand hygiene compliance.
3. Patients have feelings of passive resignation to the risk of infection.

This second synthesized finding identified that one of the reasons patients did not feel they could challenge staff was the belief that they did not have the required knowledge (see category one in synthesized finding 2). Additionally patients expressed concerns that if they did ask questions and/or challenged healthcare professionals, it may negatively impact on the care they received. Patients feared that if they asked questions or challenged staff, they were at risk of being alienated by staff, with one stating, “You don’t want to alienate yourself”.^{61(p44)}

The patient experience also included fear of retribution from staff providing care. Patients were cited as saying, “If I offend them today, what are they going to do to me tomorrow”?^{26(p1723)} It appeared that some patients feared of retribution and negative reactions from staff materialized, as one patient stated, “When I did speak up, the nurse took a grudge”.^{61(p44)} A patient from the Wyer et al. study stated, “I’d try. I don’t know if I would do it every time. But I’d be wary of who, and would tell my nurse”.^{26(p1726)} This review found that the back-up plan for a patient who noted poor compliance with hand hygiene was to tell another care professional.

Despite expressing a desire to partner with and challenge or question staff, some of the patients undertook more covert, discreet and at times quite innovative ways to partner with their healthcare professionals for hand hygiene compliance. The less common and perhaps more innovative partnering actions employed by patients, if they noticed poor hand hygiene or infection control practice by staff, included intentionally contaminating the aseptic field or touching a care professional’s gloved hand. Patients reported, “I’d probably try to grab her gloves or something – just destroy the field so she’d re-glove”.^{26(p1726)} It appeared that these non-verbal actions were a strategy to avoid having to directly challenge staff and to avoid speaking up.

Patients experienced a sense of disempowerment in relation to infection prevention and control. As illustrated in the categories from synthesized finding 2, the level of confidence in relation to avoiding an infection while in hospital was varied. Patients made statements including, “I mean you come in here, you do what they tell you to do”.^{26(p1722)} Some patients felt a certain resignation or that their role was passive during their healthcare episode, with a patient stating, “Me? I can’t really do much”.^{26(p1722)} Patient confidence was further eroded by healthcare professionals, with one patient reporting a consultant had commented on the patient’s infection by saying, “It was hardly surprising I’d had an infection seeing the length of time I’d

spent in the ward”.^{61(p45)} Another healthcare professional stated, “If you spend a long time in hospital, you’ll probably pick up MRSA.”^{61(p45)}

Poor communication emerged as a finding from the review, with some patients receiving little or no information. A patient was quoted as saying, “I didn't even know I had one (an infection). I was only told after I got home that I had MRSA”.^{61(p44)}
“They said they had got to the bottom of the bug, but they never said what it was”.
^{61(p44)}

Conclusion to this chapter

The data from the three final included studies indicates the complex nature of the experience associated with partnering between patients and healthcare professionals for hand hygiene compliance. The paucity of available studies suggests that this experience, although discussed extensively in quantitative literature, requires further qualitative research for greater understanding of the potential benefits and barriers associated with this practice. The results from this thesis indicate that the experience and willingness of patients to partner for hand hygiene is subjective and that it is influenced by numerous personal and experiential factors. However, healthcare organizations and professionals are key to facilitating an equal and non-threatening partnership with patients, through supportive behaviors and positive workplace and professional cultures that at times will challenge perceived or real social and professional historical and cultural norms.

Chapter 5: Discussion and conclusions

Discussion

The aim of the review was to investigate and synthesize the existing evidence relating to the experience of adult patients and healthcare professionals in the acute healthcare setting when partnering for hand hygiene compliance. A comprehensive search of the literature utilizing an *a priori* search and selection criteria resulted in a small number of included studies (n = 3). While there were quantitative studies that reported findings and outcomes relating to data and evidence obtained from surveys and questionnaires, and textual opinion papers, of the available qualitative research, only a limited number of studies were identified as being relevant for inclusion.

This qualitative systematic review utilized the JBI approach to meta-aggregation.¹¹ After undertaking the systematic search and critical appraisal process, there were three studies included in the review for data extraction and synthesis of findings. The meta-aggregative systematic review of the three included studies produced two synthesized findings as reported in the results chapter.

This systematic review utilized the available evidence to report and highlight the key contributing factors that influenced the patient experience of partnering with healthcare professionals for hand hygiene compliance in the adult acute care setting. Contributing factors included: organizational structures, behaviors, cultures, roles, beliefs and relationships between patients and healthcare professionals. In this chapter these issues are discussed and recommendations for clinical practice proposed.

Hand hygiene compliance data

The WHO has identified risk factors contributing to poor compliance with hand hygiene practices, with poorer compliance among doctors compared with nurses.^{1(p66)} Internationally, hand hygiene compliance rates are reported to range from as low as 5% to 89%, with an overall mean of 38.7%.¹ Australian compliance rates in 2016 are reported at 83.9%.³ Further breakdown of this data indicates variations in compliance between different healthcare professional groups, with rates for

nurse/midwives at 87.2% and medical practitioners 72.5%.³

Rates for each of the My 5 Moments for Hand Hygiene indicated higher compliance for moments that could be interpreted as protecting healthcare professionals. Compliance rates for moment 3 (after a procedure or body fluid exposure risk) were highest at 90.5%, and also for moment 4 (after touching a patient) with rates of 87.8%. In comparison, rates that related to protecting the patient such as moment 1 (before touching a patient) were 80.6%, and moment 2 (before a procedure) 87.1%.³ These rates imply that health professionals adopted protective measures to favor themselves over the patient.

Perceptions, indications and glove use by healthcare professionals

The evidence from this review indicates that patients held a belief that gloves provided safety from infection, and reported observing glove use by healthcare professionals. Patients appeared to have varied levels of knowledge about the implications for glove use and the practice of hand hygiene by healthcare professionals. Patients expressed a belief that staff who wore gloves were sterile, when in fact staff were wearing clean gloves only.

“She's already sterile she's gloved”^{26(p1722)}

Some patients placed a greater emphasis on staff wearing gloves as an infection control measure as opposed to them performing hand hygiene.

“The first thing I noticed was she wasn't wearing gloves. Is that normal procedure?”^{26(p1722)}

Conversely, some patients did not express concern when staff undertook procedures such as inserting a cannula with an ungloved hand, as they had witnessed the staff member washing their hands. Although patients perceived gloves to represent safety, Hand Hygiene Australia advises that inappropriate glove use often undermines efforts to sustain correct hand hygiene, according to the My 5 Moments for Hand Hygiene.³

There were variations amongst healthcare professionals in relation to hand hygiene and the use of personal protective equipment (PPE), including gloves. Staff raised issues relating to the wearing of personal protective equipment (PPE) and the potential to impede touch.⁶⁰

“A barrier to touch, just to provide comfort or a healing touch goes away when you have the barrier of PPE (personal protective equipment)” “I feel like I don't make a connection and a contact (with) my patient the gloved hands versus the skin-to-skin contact of trying to make that connection with the patient”^{60(p406)}

Overall, the patient's observation and perceptions relating to glove use indicated that they perceived gloves as representing safety and a factor in reducing the risk of infection. This patient focus on the use of gloves by healthcare professionals rather than the practice of hand hygiene could be a barrier to successful partnering for compliance with hand hygiene.

Healthcare associated infection prevention: whose responsibility?

The risks associated with HAIs is not a new phenomenon and the risks to patients in healthcare settings remain prevalent despite the advent of modern medicine and a greater understanding of the transmission of microorganisms and its ability to spread disease.^{1,5} Healthcare associated infections in developed countries affect 5-15% of hospitalized patients and can affect 9-37% of patients admitted to intensive care units.^{1(p2)}

Antibiotics as developed since the 1950s represent a revolution in patient care and the treatment of infection.⁵ However, these powerful drugs have also been accompanied by the appearance of resistant strains of microorganisms.²¹ The appearance of resistant strains of microorganisms has led to the need for a focus on hand hygiene as part of interrupting the chain of infection at the point of transmission.²

Infection prevention and control programs and campaigns have been developed to mitigate the risks associated with HAIs, with the primary role in the implementation resting with healthcare professionals. This review has highlighted that healthcare professionals understand their responsibility in minimizing the risk of healthcare associated infection to their patients. Amongst staff, the attitude and responsibility to provide care to their patients were prevalent.

Healthcare professionals understand their responsibility in minimizing the risk of infection between patients and themselves. Additionally, healthcare professionals were concerned about the risks of cross infections between patients, between staff or to their own families. A nurse from the Seibert study expressed, “First of all I feel responsible for the person I am dealing with, that's where it really impacts me....If I

touch somebody and I haven't washed my hands properly, then I am going to be the carrier and trigger for that MRSA to go forward".^{60 (p406)}

Paradoxically, despite healthcare professionals understanding the risk of HAIs and their responsibility in protecting and caring for patients, hand hygiene compliance rates remain variable.

Partnering and empowerment

The WHO defines empowerment as "a process through which people gain greater control over decisions and actions affecting their health".^{1(p190)}

Four components are identified as central to patient empowerment¹

- 1) Patient understanding their role
- 2) Patient knowledge to be able to engage with healthcare provider
- 3) Patient skills
- 4) The presence of a facilitating environment.

Within the context of patient participation and partnering in hand hygiene, McGuckin et al. describe empowerment as "a process that allows an individual or a community to gain knowledge, skills and attitudes needed to make choices and participate in their care".^{32(p192)} Despite patients expressing a willingness to be empowered and to partner for hand hygiene, evidence from quantitative data indicates that actual follow through on and practicing of empowerment for hand hygiene compliance range from as low as 5% to 80%.³²

Patient engagement and empowerment programs have notable not been well studied and it has been hypothesized that certain characteristics including healthcare professionals' seniority and gender could influence a patient's willingness to question them.⁴⁶ It has been suggested that patient empowerment and partnering can be enhanced when the patients are given encouragement by their healthcare professional. A review by McGuckin et al. found that patient empowerment can be increased when a patient is given explicit permission by a healthcare professional.³²

Patient empowerment and partnering, as part of the healthcare system, is not a one size fits all model, with not all patients desiring, willing and or able to participate in various safety initiatives such as speaking up for hand hygiene. Although some patients in the included studies reported being happy to challenge healthcare professionals, the pervading theme was an overall reluctance to speak up. The review found that patients did not feel knowledgeable enough to challenge the hand hygiene practice of the healthcare professionals providing care to them.

Healthcare hand hygiene facilities, education and teamwork

The synthesized findings provide evidence that within organizations there were enablers for partnering for hand hygiene in the acute healthcare setting. These included the provision of trained healthcare staff, appropriate equipment, sinks, patient and staff information sheets, and educational videos and posters.

Patients were encouraged to be equal partners in their care as part of the healthcare team. However the behaviors of healthcare professionals and patients did not fully embrace partnering for hand hygiene compliance as a team. Evidence from this review raised questions regarding the universal acceptance of this participatory role by patients, with some expressing they would be happy to challenge staff, while others expressed they were not comfortable or did not feel they possessed the required knowledge.

Education facilitates patient empowerment and enables patients to partner with healthcare professionals in a more equitable manner. However, educating patients to challenge staff, and the actual act of asking a healthcare professional a question such as “have you washed your hands?” is an unique patient experience. The individual patient experience is influenced by a variety of factors, including levels of education, health literacy as well as psychosocial factors.¹

Lack of knowledge relating to hand hygiene guidelines and potential risks of transmission of infectious organisms are acknowledged barriers to hand hygiene compliance.¹ To counter these barriers, education of patients and healthcare professionals is a recommended infection control and patient safety strategy.^{1,32,14}

There was evidence from both patients and health professionals that education and opportunities to gain knowledge would be beneficial. Education was identified as a target for improvement to promote buy-in and team work between patients and healthcare professionals, as a way to encourage correct behaviors and actions as well as to increase patient involvement in prevention.¹

“People know what the right thing to do is. How do we help people to do the right thing?” “Get patients involved in prevention” “I think it is all about education, and I think we have to get buy-in from everybody”.^{60(p407)}

“All co-workers, all the people that work in the hospital. First they have to wash their hands, that’s the main thing. Before they go in the patient’s room and even after. Wash their hands before using gloves and after they take the gloves off; wash their hands. We just have to make sure that everybody understands a team”.^{60(p409)}

Both staff and patient attitudes were that hand washing required a collective team approach, and a recognition of the need for a collaborative understanding of the importance of hand hygiene. However, this review demonstrates that there were differing levels of comfort amongst patients about asking healthcare professionals questions or challenging practice.

Differing levels of comfort in challenging the experts

Patients experienced differing levels of comfort in challenging staff and asking questions about healthcare associated infection and hand hygiene. Patients predominantly did not feel comfortable questioning healthcare professionals as they considered healthcare professionals as the experts and trusted that they knew how and when to perform hand hygiene.

Patients appeared to have differing levels of comfort associated with the role of the healthcare professionals and the perceived level of authority, e.g. whether it was a nurse or doctor. Some patients realized that they did not always speak up to doctors, and reported breaches to their nurses rather than directly challenging missed hand hygiene practices.

“A doctor, I think I would feel a bit awkward (challenging). They are the experts so they know best”.^{61(p44)}

The findings from this review indicated that patients were concerned that if they spoke up about hand hygiene, it may adversely affect their relationship with their healthcare professionals with possible repercussions on the care provided to them.²⁶ Patients indicated they had a fear of retribution and negative consequences for their care and balanced this against speaking up.

“She could have snapped at me or something. I know what I’m doing.”^{26(p1723)}

“When I did speak up, the nurse took a grudge”.^{61(p44)}

Patient felt that he could not ask questions or challenge staff because he did not want to alienate himself. “You don't want to alienate yourself”.^{61(p44)}

Patients balanced participating and partnering with healthcare professionals for hand hygiene compliance against their concern that a damaged or poor relationship with their healthcare provider could result in them receiving poorer care which could adversely affect their recovery from illness.

“It would be hard to ask because they’d think you were undermining them. If I offend them today, what are they going to do to me tomorrow”?^{26(p1723)}

Feelings of fear and discomfort in relation to speaking up for patient safety measures including hand hygiene are not exclusive to patients, with reports of difficulties also being experienced amongst healthcare professionals. A study by Maxfield and colleagues reported instances where healthcare professionals failed to hold crucial conversations relating to broken rules, safety breaches and errors.⁶³ The reported reasons as to why the healthcare professionals did not speak up to one another included fear of angering their colleagues and the repercussions on working relationships. Evidence implies that the prevailing reasons why both patients and healthcare professionals do not speak up for safety is a shared concern about damaging relationships and that confronting people is difficult.⁶³

Role of patients and healthcare professionals

Differing perceptions amongst patients about their role in partnering with healthcare professionals were expressed, with some questioning if it was their role to undertake this action. Longtin et al. also raised questions on whether patients were ready for

this new role as active participants in their care and safety as opposed to the historical paternalist model where patients were a “passive spectator in his or her own healing process”.^{48(p54)} The drivers for this changing role were purported to include changing definitions within healthcare, humanistic considerations and the basic rights of human beings for control and self-determination, as well as a pervading consumer demand for quality in service provision.⁵⁴

Patients experienced differing levels of comfort regarding partnering for hand hygiene compliance, which appeared to be influenced by social and demographic factors including age, gender, level of health literacy and experience with the healthcare sector. This is confirmed in the broader literature regarding patient related factors that influence patient participation in patient safety initiatives, including social status, ethnic origin, level of medical knowledge, comorbidities and personal confidence.⁴⁶

The WHO identifies barriers to empowerment that lessen the likelihood of patient involvement, which include intrapersonal, interpersonal and cultural barriers.¹ Evidence from the included papers for this thesis suggests that some patients displayed this intrapersonal barrier, with some patients expressing a passive resignation to the risk of infection and what could be interpreted as a sense of disempowerment in their ability to play a role in infection prevention.

Patients also appeared to be cognizant of the professionalism and experience of the healthcare professional, whom they considered to be experts and to hold a position of authority.²⁶

“Because I’m thinking they should know? They’re in a highly trained position and they should follow the rules too. More so than me. I’m just a patient sitting here” “It’s not me that has to follow the rules. Yet I’m the one sitting here with the disease” “It’s another reason why I don’t really bother to say anything to them. Because I think Oh well that’s up to you. You should know”.^{26(p1724)}

This review identified varied levels of confidence and perceptions in the role of patients in infection control and hand hygiene practice by healthcare professionals. Perhaps compounding this lack of understanding about the role of the patients in partnering in infection control and for hand hygiene was communication.

Creative alternatives to speaking up

Patients felt reluctant and worried about how their attempts to remind healthcare professionals about hand hygiene would be received and were concerned that they would affect the caring relationship with their healthcare professional by causing offence by questioning their doctor or nurse.

Patients compensated for challenges relating to speaking up and developed non-verbal alternatives employing different tactics, such as listening "...for the sound of hand hygiene being performed on the other side of the curtained bed space".^{26(p1723)} Patients also employed diversionary tactics including using humor or asking naïve questions to signal their concerns; others praised good practice.²⁶

Patients reported avoiding confronting healthcare professionals about their hand hygiene practice and employed seemingly creative alternatives to directly verbalizing their concerns. Patients took actions such as contaminating the healthcare professional's gloves or sterile fields, or interacting indirectly with a third party in an effort to encourage hand hygiene practice by the healthcare professionals.

"I'd probably try to grab her gloves or something, just destroy the field so she'd re glove".^{26(p1726)}

This review found that patients devised alternative non-confrontational and or non-verbal strategies to partner for hand hygiene compliance. This in part appeared to be driven by a self-motivated desire to avoid what was perceived as a difficult conversation, and also as a desire to enable the healthcare professional to save face.

Communication

Communication appeared to be a significant factor for some patients, with some reporting that communication was poor during their stay and they received little or no written or verbal information. Some patients reported not knowing they had an infection until they were discharged, but never actually found out what they had.

"They said they had got to the bottom of the bug, but they never said what it was".
61(p44)

Good communication between patients and healthcare professionals is dependent on both physiological factors as well as knowledge.¹ For patients to be empowered, they require information and understanding on how to use this knowledge in an environment that supports open communication.¹ Patient empowerment and partnering between patients and healthcare professionals is in part facilitated by effective bi-directional communication, which includes the action of asking questions and informing providers about experiences, occurrences and observations.^{13,41}

Open communication between healthcare professionals and patients is an instrumental facilitator of patient empowerment and a potential enabler for partnering for hand hygiene.

Patient confidence versus passive resignation to infection

Patients have an underlying level of confidence and trust in the healthcare system and professionals, whom they consider to be the experts who know what to do regarding patient care and safety. However evidence from the review indicated a level of passive resignation to the risk of HAIs amongst some patients.

“You sign up for an op(eration) and you sign up for an infection. It comes with the territory. If you go into hospital, you have to put up with it”.^{61(p45)}

Patients have a vested interest in their healthcare professionals performing hand hygiene, as most patients desire the best possible outcomes, including absence of developing a preventable infection related to their healthcare encounter.¹ Patients fear infection and the associated pain and suffering which can adversely affect their healthcare experience.

“In case they put me in hospital, I dread it, I dread it. It’s a constant source of worry. I dread going into hospital.” “I have this nightmare scenario that I end back there. “It’s one of my biggest fears (infection)”.^{61(p45)}

How patients express their concerns and wishes in relation to the practices of those who provide care for them is linked to their ability and confidence to speak up to healthcare professionals. The patient’s confidence in making the decision to speak up is influenced by internal personal drivers as well as external factors. Internal factors include the patient’s abilities, health literacy, knowledge, communication skills as well as their acceptance of a more active participatory role in their healthcare.^{1,32,41}

External factors include the culture and behaviors of the healthcare professionals, and the reactions and support of patients speaking up for partnering with healthcare professionals in relation to their hand hygiene practices.^{1,32}

There are differing levels in the sense of power amongst patients, with some appearing to lack confidence in their own ability to influence during their healthcare encounter. “You don’t think about that do you? I mean you come in here, you do what they tell you to do and that’s it...Me? I can’t really do much”.^{26(p1722)}

The apparent lack of patient confidence in their power to influence their healthcare experience and the actions of healthcare providers (including hand hygiene compliance) may be improved by the recognition that patients are equal partners in their care.^{1(p192)}

Conclusion

The aim of this thesis was to explore the available qualitative evidence and gain insight into the patient experience of partnering with healthcare professionals for hand hygiene compliance in the acute adult healthcare setting. There were limited published qualitative papers regarding the patient experience of partnering with healthcare professionals for hand hygiene compliance. However the three papers included in the review have provided an insight into the patient partnering experience in relation to hand hygiene in the healthcare setting.^{26,60,61} The 29 findings along with their supportive illustrations have provided evidence on the challenges and opportunities encountered by patients when partnering with healthcare professionals.

The main themes and data extracted from the included papers have captured how patients feel and what actions they have taken when considering and/or acting to partner with healthcare professionals for hand hygiene compliance. The evidence suggests that there are infrastructures and resources that facilitate, encourage and support partnering for hand hygiene. However, despite these facilitators for partnership with hand hygiene compliance, patient thoughts and experiences indicate that the behaviors of healthcare professionals and the underpinning culture in healthcare do not always support this initiative

The review has also indicated that patients weigh participating in hand hygiene advocacy and partnering against the possible negative impact on the caring relationship between the patient themselves and the healthcare professional.

Weighing the participation is perhaps made difficult due to the current balance of power resting with the healthcare professional rather than the patient, due to factors including knowledge differentials, established roles and behaviors.

This review indicates that there is a disparity between the promotion and facilitation of partnering for hand hygiene compliance, and the actual patient experience and implementation of this initiative. The patient is the single constant throughout a healthcare encounter and should be placed at the center of the decision making process when assessing, planning, developing and evaluating interventions designed to promote partnering for hand hygiene.

Implications for practice

The recommendations identified in this review have been derived from the available evidence as per the illustrations, findings, categories and final synthesized findings. The intention of the recommendations is to provide credible evidence to inform practice and policy with the aim of improving the patient experience in relation to partnering with healthcare professionals for hand hygiene compliance. Recommendations were assigned as Grade B, according to the JBI Grades of Recommendation.¹²

- Healthcare professionals should develop and implement patient and staff education campaigns that clarify the benefits of hand hygiene and the appropriate use of gloves in the acute care setting. (Grade B)
- Healthcare professionals and patients should be provided with information that promotes greater understanding of the relationship between the risk of HAIs and compliance with hand hygiene, as well as clinical responsibilities. (Grade B)
- Healthcare professionals and hospitals should establish behaviors, environments and work place cultures that support, promote and encourage behaviors that enable partnering for hand hygiene. Partnering for hand hygiene should be an option for patients who wish to voice their concerns, and staff should be trained to encourage patients to exercise this option. (Grade B)

- Hospitals should continue to support organizational structures that enable healthcare professionals to partner with patients for hand hygiene compliance. (Grade B)
- Quality improvement initiatives should focus on identifying barriers to partnering for hand hygiene and resource associated improvement campaigns. Campaigns should include components that seek to understand the different levels of patient comfort, and real or perceived power imbalances in relation to speaking up to healthcare professionals for hand hygiene compliance. (Grade B)
- Healthcare professionals and patients should seek to understand their experiences in relation to hand hygiene and develop strategies to overcome barriers to open conversations without fear of retribution or impact on care. (Grade B)
- Patients and healthcare professionals should facilitate processes and communication strategies that address patients' feelings of resignation to infection as a part of the healthcare experience and encounter. (Grade B)
- Healthcare facilities and hospitals need to expand on current hand hygiene campaigns and further the promotion of the transparency of reporting hand hygiene data by collecting qualitative, experiential data along with statistics. (Grade B)

Implications for research

- Further qualitative studies should be undertaken in the area of partnering for hand hygiene in the acute care setting, both from the patients' and healthcare professionals' perspectives.
- Further studies should clearly report on the philosophical framework and methodology for their chosen approach.
- For qualitative inquiry, future research should locate the researcher culturally and theoretically and describe the impact of the researcher on the researched and vice versa.

- Research should be undertaken to deepen our understanding of both the patient's and healthcare professional's experience of hand hygiene partnerships and the drivers, behaviors, assumptions and organizational cultural perspectives underpinning this phenomenon.
- Further qualitative research is warranted on patients' views on empowerment, engagement with decision making and partnership in order to understand their needs and preferences.

Summary of findings – ConQual¹²

The synthesized findings have been graded using ConQual to establish a measurable indicator of the level confidence associated with each, based upon the study design, level of dependability and level of credibility (credibility being evaluated at the individual finding level) (see Table 7). The ConQual approach has been adopted by the Joanna Briggs Institute for the purpose of assigning an overall score (High, Moderate, Low or Very Low) which indicates a rating of confidence in the qualitative synthesized findings.¹²

Table 7: ConQual summary of findings¹²

<p>Systematic review title: The patient experience of partnering with healthcare professionals with hand hygiene compliance</p> <p>Population: Adult in-patients and healthcare professionals (specifically nurses and medical staff)</p> <p>Phenomena of interest: The experience of partnership between patients and healthcare professionals in relation to hand hygiene compliance</p> <p>Context: Western acute care hospital settings</p>					
Synthesized finding	Type of research	Dependability	Credibility	ConQual*	Comments
Synthesized finding 1: Organizational structures enable partnering between healthcare professionals and patients for hand hygiene compliance; however the culture, beliefs and behaviors of healthcare professionals and patients do not fully support this partnership	Qualitative	Moderate (scored 4/5 for the 5 criteria in two studies, 3/5 in one study)	*Downgraded one level	Moderate	*Credibility downgraded as the synthesized finding includes mix of 12 unequivocal and 5 credible findings
Synthesized finding 2: Patients have differing levels of knowledge and balance partnering in hand hygiene against its possible detrimental impact on the caring relationship provided by healthcare professionals, out of concern for their wellbeing, health outcomes, treatment and/or recovery.	Qualitative	Moderate (scored 4/5 for the 5 criteria in two studies, 3/5 in one study)	*Downgraded one level	Moderate	*Credibility downgraded as the synthesized finding includes mix of 7 unequivocal and 5 credible findings

Potential limitations of the systematic review

The aim of the review was to synthesize evidence in relation to the patient and healthcare professional experience of partnering for hand hygiene compliance. The availability of qualitative studies for inclusion in this review was lower than had been anticipated from the initial scoping search. In contrast, there were large numbers of quantitative and text and opinion papers; however these did not specifically provide evidence on the patient and healthcare professional experience. This review only included studies that could be identified from English language literature, which represents a limitation in terms of papers from other language groups not being represented in the findings of this review.

There were no issues identified in relation to the quality of the research, methodology and evidence of patient voice, with sufficient examples of interactions with participants reported in all of the included studies.

Conflict of interest

None to declare.

References

- 1 World Health Organization. WHO guidelines on hand hygiene in health care. First Global Patient Safety Challenge Clean Care is Safer Care. 2009. Available from: http://apps.who.int/iris/bitstream/10665/44102/1/9789241597906_eng.pdf
- 2 National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare. 2010. Commonwealth of Australia.
- 3 Hand Hygiene Australia. Available from: <http://www.hha.org.au>
- 4 World Health Organization. Hand hygiene promotion in health care, tips for patients. 2009. <http://www.who.int/gpsc/5may/tips-for-patients.pdf>
- 5 Ayliffe GAJ, English MP. Hospital infection, from miasmas to MRSA. Published by the press syndicate of the University of Cambridge, United Kingdom: Cambridge University Press, 2003.
- 6 Stewardson A, Allegranzi B, Sax H, Kilpatrick C, Pittet D. Back to the future: rising to the Semmelweis challenge in hand hygiene. *Future Microbiol.* 2011. 6(8), 855-876.
- 7 Science Museum. Brought to life exploring the history of medicine. Ignaz Semmelweis (1818-65). Available from: <http://www.sciencemuseum.org.uk/broughttolife/people/ignazsemmelweis>
- 8 Manor, J, Blum N, Lurie Y. No good deed goes unpunished: Ignaz Semmelweis and the story of puerperal fever. *Infect Control & Hosp Epidemiol.* 2016. 37(8): 881-887.
- 9 Nightingale F. Notes on Nursing: What it is, and what it is not. D Appleton and Company. 1860. Available from: <http://digital.library.upenn.edu/women/nightingale/nursing/nursing.html>
- 10 National Safety and Quality Health Service Standards (ACSQHC). 2011 Sydney. Commonwealth of Australia.
- 11 Lockwood C, Munn Z, Porritt K. Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. *Int J Evid Based Health* 2015; 13:179–187.

- 12 Munn Z, Porritt K, Lockwood C, Aromataris E, Pearson A. Establishing confidence in the output of qualitative research synthesis: the ConQual approach. *BMC Med Res Methodol.* 2014;14(108):1–7.
- 13 Butenko SJ, Lockwood C, McArthur A. The patient/consumer experience of partnering with healthcare professionals with hand hygiene compliance: a systematic review protocol. *JBI Database System Rev Implement Rep.* 2015,13(4):127-40.
- 14 Schwappach DLB. Review: Engaging patients as vigilant partners in safety: A systematic review. *Med Care Res Rev.* 2010. Apr; 67(2):119-48.
- 15 Boyce JM, Pittet D. Guideline for hand hygiene in health-care settings: Recommendations of the healthcare infection control practices advisory committee (HICPAC) and the HICPAC/SHEA/APIC/IDSA hand hygiene task force. *MMWR* 2002;51(No. RR- 16) *Infect Control and Hosp Epidemiol.* 23(12): 3-41.
- 16 Science Museum. Brought to Life Exploring the History of Medicine. Antoni van Leeuwenhoek (1632-1723). Available from:
<http://www.sciencemuseum.org.uk/broughttolife/people/antonivanleeuwenhoek>
- 17 Science Museum. Brought to Life Exploring the History of Medicine. Florence Nightingale (1820-1910). Available from:
<http://www.sciencemuseum.org.uk/broughttolife/people/florencenightingale>
- 18 Tye J, The Mother of all hospital administrators, *H&HN Daily* , May 5, 2011
- 19 Miller JT, Rahimi SY, Lee M. History of infection control and its contributions to the development and success of brain tumor operations. *Neurosurg Focus.* 2005;18(4):1-5.
- 20 Stone PW, Hassan S, Quiros D, Larson EL. Effect of guideline implementation on costs of hand hygiene. *Nurs Econ.* 2007; 25(5): 279-284.
- 21 Davies J, Davies D. Origins and evolution of antibiotic resistance. *Microbiol Mol Biol Rev.* 2010 Sep; 74(3): 417-433.
- 22 Centers for Disease Control and Prevention (CDC), Antibiotic antimicrobial resistance. CDC 2016 <https://www.cdc.gov/drugresistance/>

- 23 Aminov RI. A brief history of the antibiotic era: lessons and challenges for the future. 2010. *Front Microbiol.* 2010. 1: 134. 1-7.
- 24 Grayson ML, Melvani S, Druce J, Barr IG, Ballard SA, Johnson PD, Mastorakos T, Birch C. Efficacy of soap and water and alcohol-based hand-rub preparations against live H1N1 influenza virus on the hands of human volunteers. *Clin Infect Dis.* 2009 Feb 1;48(3):285-91.
- 25 World Health Organisation, Evidence of hand hygiene to reduce transmission and infection by multi-drug resistant organism in health-care settings. Literature Review. http://www.who.int/gpsc/5may/MDRO_literature-review.pdf. Page 1-7
- 26 Wyer M, Jackson D, Iedema R, Hor SY, Gilbert GL, Jorm C, et al. Involving patients in understanding hospital infection control using visual methods. *J Clin Nurs.* 2015;24(11-12):1718-29; First published online Feb 7, 2015.
- 27 Woloski-Wruble A, DeKeyser F, Levi S, Margalith I. Patients attitudes towards the use of gloves by healthcare staff. *Br J Nurs.* 2000, Sept 28-Oct 11;9(17): 1146-1152
- 28 Pittet D, Simon A, Hugonnet S, Pessoa-Silva CL, Sauvan V, Perneger TV. Hand Hygiene among physicians: performance, beliefs, and perceptions. 2004. *Annals of Internal Medicine.* 2004. July, 141(1): 1-8
- 29 Queensland Government Queensland Health. About hand hygiene. 2015. Available from: <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/infection-prevention/standard-precautions/hand-hygiene/about/default.asp>
- 30 Dancer SJ. Infection control "undercover": a patient experience. *J Hosp Infect.* 2012. 80:189-191.
- 31 Pomey MP, Hihat H, Khalifa M, Lebel P, Neron A, Dumez V. Patient partnership in quality improvement of healthcare services: patients' inputs and challenges faced. *Patient Experience Journal PXJ.* 2015: 2(1) 29-42.
- 32 McGuckin M, Govednik J. Patient empowerment and hand hygiene, 1997-2012. *J Hosp Infect.* 2013;84(3):191-9.

- 33 Rodwell CM. An analysis of the concept of empowerment. *J Adv Nurs*. 1996; 23(2) 305-13.
- 34 Gibson CH. A concept analysis of empowerment. *J Adv Nurs*. 1991; 16(3):354-361.
- 35 Williams T. Patient Empowerment and ethical decision making: the patient/partner and the right to Act. *Dimens Crit Care Nurs*, 2002. 21(3):100-104
36. McGuckin M, Goldfarb TI. The patient survival guide 8 simple solutions to prevent hospital and healthcare associated infections. 1st edn. New York, NY: Demos Medical Publishing, 2012
- 37 Josiah Macy Jr. Foundation . Partnering with patients, families and communities: an urgent Imperative for health care. 2014 . Conference paper. Available from: http://macyfoundation.org/docs/macy_pubs/JMF_ExecSummary_Final_Reference_web.pdf
- 38 Australian Commission on Safety and Quality in Healthcare. Safety and Quality charter Australian Charter of Healthcare Rights. Australian Government. Available from: <https://www.safetyandquality.gov.au/our-work/patients-and-carers/>
- 39 McGuckin MT, Taylor A, Martin, V, Porten, L, Salcido R. Evaluation of a patient education model for increasing hand hygiene compliance in an inpatient rehabilitation unit. *Am J Infect Control*. 2004; 32(4):235-8.
- 40 McGuckin M, Storr J, Longtin Y, Allegranzi B, Pittet D. Patient empowerment and multimodal hand hygiene promotion: a win-win strategy. *Am J Med Qual*. 2011. Jan-Feb;26(1):10-7.
- 41 Schwappach DLB, Frank O, Davis RE. A vignette study to examine health care professionals' attitudes towards patient involvement in error prevention. *J Eval Clin Pract*. 2013;19(5):840-8.42 World Health Organisation, World Alliance for Patient Safety. Research for Patient Safety Better Knowledge for Safer Care. WHO 2008. Available from: http://www.who.int/patientsafety/information_centre/documents/ps_research_brochure_en.pdf

- 43 Department of Health & Human Services, USA. Centre for Disease Control CDC. Clean Hands Count: Ask for SAFet Care Ask For Clean Hands. Poster. Available from: <https://www.cdc.gov/handhygiene/pdfs/patient-poster-its-ok-to-ask-508.pdf>
- 44 National Health Service, United Kingdom. National Patient Safety Agency Clean Your Campaign. 2011. Available from: <http://www.npsa.nhs.uk/cleanyourhands/>
- 45 Pittet D, Panesar SS, Wilson K, Longtin Y, Morris T, Allan V, Storr J, Cleary K, Donaldson L. Involving the patient to ask about hospital hand hygiene: a national patient safety agency feasibility study. *J Hosp Infect.* 2011 Apr;77(4):299-303.
- 46 Longtin Y, Sax H, Allegranzi B, Hugonnet S, Pittet D. Patients' beliefs and perceptions of their participation to increase healthcare worker compliance with hand hygiene. *Infect Control Hosp Epidemiol.* 2009 Sep;30(9):830-9.
- 47 Lawton R, Armitage G. The role of the patient in clinical safety: thought paper. The Health Foundation, May 2012. Available from: www.health.org.uk
- 48 Longtin Y, Sax H, Leape LL, Sheridan SE, Donaldson L, Pittet D. Patient participation: current knowledge and applicability to patient safety. *Mayo Clin Proc.* 2010; 85(1):53-62.
- 49 Berger Z, Flickinger TE, Pfoh E, Martinez KA, Dy SM. Promoting engagement by patients and families to reduce adverse events in acute care settings: a systematic review. *BMJ Quality & Safety* 2014;0:1-8.
- 50 Meyer, C. Muhlfeld, A. Drexhage, C. Floege, J. Goepel, E. Schauerte, P. Kelm, M. Rassaf, T. Clinical research for patient empowerment--a qualitative approach on the improvement of heart health promotion in chronic illness *Med Sci Monit.* 2008. 14(7): 358-65.
- 51 Lawrence DM. Physician Sovereignty: The dangerous persistence of an obsolete idea. Centre for Policy Research. Maxwell School of Citizenship and Public Affairs. 2009. Paper 3. <http://surface.syr.edu/cpr/3>
- 52 Jammali-Blasi A, McInnes E, Middleton S. A survey of acute care clinicians' views on factors influencing hand hygiene practice and actions to improve hand hygiene compliance. *Infection, Disease & Health.* 2016. 21(1):16-25.

- 53 Lawton R, Taylor N, Clay-Williams R, Braithwaite J. Positive deviance: a different approach to achieving patient safety. *BMJ Qual Saf* 2014. 23:880-883
- 54 Fergusson JK. Preventing healthcare-associated infection: risks, healthcare systems and behaviour. *Intern Med J.* 2009: Sep; 39(9):574-81.
- 55 Pronovost P, Vohr E. *Safe patients smart hospitals. How one doctors checklist can help us change health care from the inside out.* United States of America. PLUME Penguin Books Group Publishers, 2011.
- 56 Larson IE, Sahlsten MJM, Segesten K, Plos KAE. Patients' perceptions of barriers for participation in nursing care. *Scand J Caring Sci* 2011; 25:575-582
- 57 The Joanna Briggs Institute, The University of Adelaide, Joanna Briggs Institute Reviewers' Manual: 2014 edition. Australia: The Joanna Briggs Institute; 2014.
- 58 Ingham-Broomfield R. A nurses guide to qualitative research. *AJAN.* 2015; 32(3): 34-40.
- 59 The Joanna Briggs Institute levels of evidence and grades of recommendation working party. Supporting document for the Joanna Briggs Institute levels of evidence and grades of recommendation. The Joanna Briggs Institute. 2014. http://joannabriggs.org/assets/docs/approach/JBI-grades-of-recommendation_2014.pdf
- 60 Seibert DJ, Gabel Speroni K, Kyeung Mi O, DeVoe MC, Jacobsen KH. Preventing transmission of MRSA: a qualitative study of health care workers' attitudes and suggestions. *Am J Infect Control.* 2014;42(4):405-11.
- 61 Burnett EL, K.; Rushmer, M.; Ellis, M.; Noble, M.; Davey, P. Healthcare-associated infection and the patient experience: a qualitative study using patient interviews. *J Hosp Infect.* 2010;74(74):42 - 7.
- 62 Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *PLoS Med.* 2009;6(6).

63 Maxfield DG, Grenny J, McMillian R, Patterson K, Switzler A. Silence kills the seven crucial conversations for healthcare. Vital Smarts Patient Safety Network. 2005; 45: 1-19. Available from:
<https://psnet.ahrq.gov/resources/resource/1149/silence-kills-the-seven-crucial-conversations-for-healthcare->

Appendix I: Search strategy

Example: Medline search May 2015.

#	Search	Results
1	hand hygiene.mp. exp Hand Disinfection/ or exp Hand Hygiene/	5776
2	nurse patient relations.mp. or exp Nurse-Patient Relations/	31472
3	professional patient relations.mp or exp Professional-Patient Relations/	124316
4	empowerment.mp or exp "Power (Psychology)"/	14955
5	exp Patient Participation/ or exp "Power (Psychology)"/ or patient empowerment.mp.	29181
6	consumer participation.mp or exp Consumer Participation/	33569
7	Exp Patient-Centered Care/ or patient centered care.mp.	12059
8	decision making.mp. or exp Decision Making/	190636
9	exp Physician-Patient Relations/ or patient autonomy.mp.	64761
10	2 or 3 or 4 or 5 or 6 or 7 or 8 or 9	346840
11	1 and 10	118

Appendix II: Included studies (QARI)

Study	Methods	Participants	Experiences	Phenomena of interest	Notes
Burnett E, Lee K, Rushmer R, Ellis M, Noble M, Davey P. 2010	In depth face to face interviews, qualitative, Semi-structured interviews. Purposive sampling.	Total of 20 patients. Two groups, group one those who had a Staphylococcus aureus blood stream infection and those who did not.	To explore patient narratives from their experiences relating to healthcare associated infection.	The majority of infected patients stated that communication throughout their stay was poor and they received little or no information. Patients need to be involved in design, evaluation of systems change and information that will improve the patient experience. Patients views must be channeled within the organization. Improvements will have direct benefits for all patients in hospital.	Communication and empowerment issues. Patient involvement and asking question on infection prevention control issues is addressed in this paper (page 44). Majority of patients said they felt comfortable asking questions, however some (n=3) did not and one perceived the doctor / nurse were the experts.
Seibert, D J, Speroni K G, Oh K M, DeVoe M C, Jacobsen K H. 2014	Semi-structured interviews, audio recordings transcribed verbatim responses	26 acute care healthcare professionals, self selected from a larger 276 respondents MRSA questionnaire	Healthcare professionals experiences, perceptions and attitudes with implementation of infection prevention and control precautions	Challenges with consistent hand hygiene and contact precautions experienced by healthcare professionals. High motivation to adhere to hand hygiene.	Hand hygiene and other patient safety measures discussed in terms of challenges and barriers.
Wyer M, Jackson D, Iedema R, Gilbert G L, Jorm C, Hooker C, O'Sullivan M V N, Carroll K. 2015.	Field 300 hrs ethnographical observations, 11 hours video footage, 8 occasions of 1:1 reflexive sessions	14 adults: 12 videoed, 6 reflexive sessions, 2 extras joined study later.	Experiences of patients participation and speaking up in relation to infection prevention and control including hand hygiene.	Patient contribution to their own safety, success depends on quality of patient provider relationships and conversations.	Patient voices heard re IPC practices and identifies challenges for patient participation in safety behaviors such as speaking up for hand hygiene.

Appendix III: Excluded studies (QARI)

1. Lee K. Student and infection prevention and control nurses' hand hygiene decision making in simulated clinical scenarios: a qualitative research study of hand washing, gel and glove use choices. *J Infect Prev.* 2013;14:3.

Reason for exclusion:

This study did not fit the systematic review PICO.

The study was more related to the decision making process regarding the use of personal protective equipment (PPE) and gel use over hand washing by healthcare professionals.

The study focused on nursing students and infection prevention and control nurses being recorded while working through clinical scenarios on a computer.

The focus was more on the interpretation of answers to set clinical scenarios and the subsequent development of a risk assessment self directed learning tool, as opposed to the lived experience of partnering with patients for hand hygiene compliance.

2. Schwappach DLB, Gehring K. 'Saying it without words': a qualitative study of oncology staff's experiences with speaking up about safety concerns. *BMJ Open.* 2014;4.

Reason for exclusion:

This study did not fit the systematic review PICO.

Discussion with supervisors deduced that although this was a good qualitative paper, healthcare professionals voices re speaking up to colleagues re safety breaches did not align with the phenomena of interest of the systematic review.

The study did not have a focus on the patient and healthcare professional partnering relationship for compliance with hand hygiene. It particularly reported on breaches relating to medication errors, isolation and hygiene, treatment decisions, invasive procedures, communication and ordering of laboratory tests.

Appendix IV: List of study findings with illustrations

Healthcare-associated infection and the patient experience: a qualitative study using patient interviews. 2009 Burnett et al.¹⁷

Finding 1	A minority of patients felt that they would be happy to challenge staff.
Illustration	One patient reported personally challenging a doctor about not using gloves and another patient stated that a family member had asked questions and challenged staff. Page 44.
Finding 2	The majority of infected patients stated that the communication throughout their stay was poor and that they received little or no verbal or written information.
Illustration	"I didn't even know I had one (an infection).I was only told after I got home that I had MRSA" Page 44. "They said they had got to the bottom of the bug, but they never said what it was" Page 44
Finding 3	The majority of patients said that they felt quite comfortable asking staff questions about their healthcare associated infection or infection prevention and control issues.
Illustration	"There was a band of doctors round every day. I would have been happy enough to have asked them" Page 44
Finding 4	Patients said that they did not feel comfortable asking questions. One patient perceived that doctor and nurse to be experts, and therefore presumed that they would know what they were doing.
Illustration	"She (spouse) wont challenge authority." "A doctor, I think I would feel a bit awkward (i.e. challenging)" "They are the experts so they know best" Page 44.
Finding 5	Patient felt that he could not ask questions or challenge staff because he did not want to alienate himself.
Illustration	"You don't want to alienate yourself" Page 44.
Finding 6	Patient stated that a nurse took a grudge against her when she did challenge.
Illustration	"When I did speak up, the nurse took a grudge" Page 44.
Finding 7	When asked about how the risk of healthcare associated infection could be

	reduced, the majority of patients, regardless of their infection status, said that the wards needed more staff, especially nurses.
Illustration	“Definitely more staff, maybe even more cleaning staff.” Page 45.
Finding 8	The level of patients' confidence in relation to acquiring an infection while in hospital varied.
Illustration	<p>“You sign up for an op(eration) and you sign up for an infection”, “It comes with the territory. If you go into hospital, you have to put up with it” Page 45.</p> <p>“In case they put me in hospital, I dread it, I dread it. It’s a constant source of worry. I dread going into hospital.” “I have this nightmare scenario that I end back there. “It’s one of my biggest fears (infection)” Page 45.</p>

Preventing transmission of MRSA: A qualitative study of health care workers' attitudes and suggestions. 2014 Seibert et al.¹⁶

Finding 1	Negative prevention perceptions included concerns that personal protection may adversely affect patient care and inhibit healing derived from physical contact with a caregiver
Illustration	“A barrier to touch, just to provide comfort or a healing touch goes away when you have the barrier of PPE (personal protective equipment)” “I feel like I don't make a connection and a contact (with) my patient the gloved hands versus the skin-to-skin contact of trying to make that connection with the patient” Page 406
Finding 2	The healthcare professionals responsibility for patient care was a common positive attitude.
Illustration	“First of all, I feel responsible for the person I am dealing with. That's where it really impacts me. If I touch somebody and I haven't washed my hands properly, then I am going to be the carrier and trigger for that MRSA to go forward” Page 406
Finding 3	Some healthcare professionals have negative attitudes to contact precautions adherence could have significant repercussions for patient safety.
Illustration	“I think the biggest things are that people either think, well I'm only doing this one little task; it doesn't matter” “do I really need to put on and use all the isolation or all the preventative things I should?” Page 406.

Finding 4	Time issues were mentioned by healthcare professionals as relating to infection control precautions.
Illustration	“Getting gowned, gloved, washing hands before and washing hands after and cleaning my equipment. So it definitely takes a lot of time” Page 407
Finding 5	Knowledge and educational opportunities were identified 23 times for the healthcare professionals and 18 times for the patients, visitors and the community.
Illustration	“People know what the right thing to do is. How do we help people to do the right thing?” “Get patients involved in prevention” “I think it is all about education, and I think we have to get buy-in from everybody” Page 407.
Finding 6	Recognized the importance of hand washing as a team.
Illustration	“All co-workers, all the people that work in the hospital. First they have to wash their hands, that's the main thing. Before they go in the patient's room and even after. Wash their hands before using gloves and after they take the gloves off; wash their hands. We just have to make sure that everybody understands a team” Page 409.
Finding 7	Many healthcare professionals identified no challenges because they considered contact precautions and hand hygiene to simply be standard practice.
Illustration	“I don't know what barrier, I mean, they try to have sinks all over and the right equipment for us to use” Page 410. “I don't see a challenge” Page 410.
Finding 8	Cross-contamination between patients or staff to patients was identified as a concern.
Illustration	“So I know it affects my daily life here and I don't to bring anything home. And I'm aware we have to make sure we don't pass anything on to patients either, from patient to patient” Page 410

Involving patients in understanding hospital infection control using visual methods.
2015 Wyer et al.¹⁸

Finding 1	Hand hygiene should be performed donning gloves initially; hand hygiene was just a good an option as gloves.
Illustration	<p>“If they washed their hands in front of you or you or I seen them wash them at the tap and they didn't touch the tap afterwards that would be fine” Page 5.</p> <p>“I've had the odd doctor who's put in a cannula and have been un-gloved so they can feel it... well their hands were washed so I felt no problems with contamination” Page 1722.</p>
Finding 2	Some participants believed that gloves used in the footage were sterile when in fact they were just clean gloves.
Illustration	“She's already sterile she's gloved” Page 1722.
Finding 3	The first thing they noticed was the presence of absence of gloves.
Illustration	“The first thing I noticed was she wasn't wearing gloves. Is that normal procedure?” Page 1722.
Finding 4	Would speak up if she noticed someone had not done hand hygiene but also made a backup plan.
Illustration	“I'd try. I don't know if I would do it every time. But I'd be wary of who and I'd tell my nurse.” Page 1726.
Finding 5	Fear of offending, some patients devised strategies that would allow healthcare professionals to save face.
Illustration	“I'd probably try to grab her gloves or something, just destroy the field so she'd re glove” Page 1726.
Finding 6	He insisted he would speak up... However he came to realize he did not always speak up to doctors.
Illustration	<p>“Because I'm thinking they should know? They're in a highly trained position and they should follow the rules too. More so than me. I'm just a patient sitting here”</p> <p>“Its not me that has to follow the rules. Yet I'm the one sitting here with the disease”</p> <p>“It's another reason why I don't really bother to say anything to them. Because I think Oh well that's up to you. You should know” Page 1724.</p>

Finding 7	When they could not directly observe staff, patients used other senses
Illustration	“Listened for the sound of hand hygiene being performed on the other side of the curtained bed-space” Page 1723.
Finding 8	To compensate for these challenges, participants had developed a range of diversionary tactics.
Illustration	“Used humor or asked naïve questions of staff to signal their concern about practice.” “Others praised good practice to indicate care preferences” Page 1723.
Finding 9	Felt that attempts to learn more about infection prevention and control would result in them feeling negated or even berated.
Illustration	“She could have snapped at me or something. I know what I’m doing. You don’t need to I’m not touching your skin.” Page 1723.
Finding 10	The patients in this study placed greater emphasis on the use of gloves over hand hygiene as an important infection control measure.
Illustration	“For many patients, gloves had come to represent safety.” Page 1722.
Finding 11	Fear of offending healthcare professionals and possible repercussions for future care.
Illustration	“It would be hard to ask because they’d think you were undermining them. If I offend them today, what are they going to do to me tomorrow? I find that because I’m not a professional, at times that talking to anyone on a professional subject I would at times get a response of, Oh well I’m the professional and I can tell you that the likelihood of you catching something or anything like that is very low” Page 1723.
Finding 12	Patients initially stated that they had no role to play in infection prevention control.
Illustration	“You don’t think about that do you? I mean you come in here, you do what they tell you to do and that’s it....Me? I cant really do much” Page 1722.
Finding 13	Patients as equal partners in preventing infection transmission.
Illustration	We are like one big community. And everybody does a bit and it helps” Page 1722.