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Measuring clinician experience of providing care

An Evidence Check rapid review brokered by the Sax Institute for the NSW Ministry of Health— August 2019

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Contents

1 Executive summary

Background

In New South Wales, value-based health care is conceptualised as: delivering services that improve health outcomes that matter to patients, the experience of receiving care, the experience of providing care, and the effectiveness and efficiency of care. Reflecting on other health systems internationally, a number of initiatives in NSW Health that stem from the Leading Better Value Care program have sought to enhance health outcomes, effectiveness, efficiency and consumer experience. Limited work has been oriented to the experience of providing care as a clinician to date. In progressing this agenda, NSW Health seeks to establish the knowledge base regarding definition and assessment of the clinician experience of providing health care.

Healthcare services are facing continuous change in the context of longer life, increasingly complex health conditions, and the associated technological and service innovations. In Australia, and NSW specifically, substantial investment in health infrastructure programs has driven growth in transformational change projects. Clinicians have a central role in creating change and ensuring that benefits are realised.

While measures of patient experience are well established, the measurement of clinicians' experiences of providing care are disparate and have been undertaken in the context of transformational change projects and smaller scale changes focused on quality improvement. As NSW Health is working towards establishing mechanisms to monitor and evaluate all aspects of value-based care, definitions and measures of clinician experience are being sought that focus on the clinical and supportive care aspects of the clinician role in the context of change and innovation, rather than on job satisfaction more broadly.

Review questions

This review aimed to address the following questions:

Question 1: How has clinician experience of delivering health care been defined in the literature?

Question 2: What survey instruments and measures of clinician experience have been developed, and applied to evaluate the impact of a health system change or monitor health system performance?

Question 3: How have clinician experience measures been used to assess the impact of health system change on the experience of giving care?

Summary of methods

The review team used rapid evidence assessment (REA) methodology, developing a range of text words, synonyms and subject headings for the major concepts of clinician experience, experience of providing care, and the changing healthcare environment. We searched two electronic databases (Medline and PubMed) from January 2009–June 2019, in addition to hand searching relevant journals, reference lists and grey

literature. Results were merged using reference-management software (Covidence) and duplicates removed. Three reviewers independently applied the inclusion criteria to potentially relevant articles. Findings were presented in a narrative synthesis to highlight key concepts addressed in the published literature.

Key findings

In all, 94 articles were included in the review; 79 from the peer-reviewed literature obtained via the electronic database searches, 14 articles from the grey literature obtained and one article obtained via hand searching. Articles emerged from Australia[21], the United Kingdom[6], the United States[13], Canada[10], Denmark[8], Sweden[6], Spain[2], Switzerland[2], Italy[2], Norway[3], France[2], New Zealand[2], The Netherlands[2], Singapore[1], Hong Kong[1], Northern Ireland[1], Israel[1] and Germany.[1]

Question 1

Clinician experience of delivering health care was inconsistently defined in the literature, with formal definitions rarely employed in the identified articles. The literature indicated there was overlap between 1) clinician experience of delivering care, 2) health workforce job satisfaction, and 3) clinician engagement.

Clinician experience was most commonly explored using qualitative methods that focused on experiences of discrete healthcare activities or events in which a change was occurring. In these contexts, clinician experience was captured in terms of the self-reported information that clinicians provided about the healthcare activity or event, their perceptions of its value, the lived impacts they experienced, and the specific behaviours they completed in relation to the activity or event.

Similar to patient experience, clinician experience data are complex and nuanced; these data may be captured in relation to a wide range of disparate or connected activities and instances of care. Unlike patient experience, clinicians' overall experience of being in any given healthcare system and providing clinical care in broader terms has not been a focus for researchers or policy makers in recent years. As such, the definition of clinician experience is under-developed and highly varied. Extensive work exploring organisational outcomes reported by clinicians of their work and psychological traits and states add complexity to the notion of clinician experience and the optimal definition of this concept. To date, the interplay between clinician experience, psychological traits and states, and organisational outcomes such as job satisfaction and retention lacks sufficient exploration. This knowledge is critical in the context of developing a working definition for clinician experience and the assessment of this concept.

Question 2

In the context of an underdeveloped definition of clinician experience, the assessment of clinician experience to date has primarily been qualitative in nature.

Few articles reported the use of survey instruments to measure clinician experience and no single instrument was employed across multiple articles. Survey instruments utilised fell into three major categories: 1) validated survey tools of clinician engagement, safety attitudes or behaviours, and team climate that included additional items that captured experiential data, 2) survey tools developed by researchers to capture experiential data relating to a specific healthcare change activity, and 3) survey tools that captured experiential data of the workplace that were developed to examine the nursing work environment, particularly in hospitals.

Question 3

Included articles primarily sought to identify impacts of change at local level within a health system, with most studies assessing cross-sectionally the experiences of community health professionals involved in implementing a change within a department or unit of a healthcare organisation.

The search of grey literature identified work that explored experiences in relation to change at a health system level; within this work we can distinguish between research seeking to understand factors that impact on adoption and adherence to system or service-level changes, and those seeking to understand how health professionals adapt and learn to work differently in the context of changes. Qualitative methods have been primarily used to inform health services and systems about the impacts of change on clinician experiences.

Gaps in the evidence

This evidence synthesis identified key gaps in the literature in studies seeking to define clinician experience, in its delineation from other psychological and organisational constructs, and in the holistic examination of clinician experiences. The study of clinician experiences as discrete episodes relating to specific healthcare changes or activities provides a reduced view of the experience of delivering care. Clinicians' experiences of change are currently captured in a highly contextualised way focused on particular projects, which is not comparable with current conceptualisations of patient experience in which questions are asked about commonly occurring experiences in healthcare generally or over a period of inpatient stay. Recognising experience as being both episodic and cumulative is critical for understanding the role of care provision and the factors influencing this within a care process, and also within the wider healthcare system.

Discussion of key findings

This Evidence Check of the measurement and application of clinician experience data in health systems retrieved 94 articles from the peer-reviewed[79] and grey[15] literature from 18 countries. We identified a large number of articles that incorporated qualitative studies exploring clinician experiences in the context of changes occurring in health services and systems[85], with fewer articles including surveys[24] and just two survey studies reporting a service or system-level clinician experience survey. In two studies, the Picker Staff/Employee Questionnaire was adapted and administered. Key findings from the Evidence Check were that clinician experience is closely connected to work and psychological experiences; there was limited understanding of the relationship between experience and related constructs. Clinician engagement was commonly captured alongside experience data, along with information about the work environment and job satisfaction.

Conclusion

Knowledge of clinicians' experiences of providing care in NSW Health is lacking, with studies to date focused on the capture of the subjective experiences of clinicians involved in episodes of change. A small number of health systems internationally have sought to capture clinician experience data via staff surveys, although these data are not clearly distinguished from data of the work environment, engagement and

psychological experiences associated with clinical work. Evidence to date does not establish the contribution of existing service or system-level survey tools to health service or system enhancement.

Evidence to date indicates that clinician experience data have been utilised for understanding barriers to the adoption of changes and approaches that clinicians take to adapt to manage change in their environment. The assessment of clinician experience may be captured through adapting existing staff survey tools, but psychometric and content analysis is required for system relevance. In progressing the value-based healthcare agenda, NSW Health may wish to consider the proposed application of clinician experience data towards system enhancement as a basis for exploring the optimal measurement strategy.

2 Background

Towards value-based health care

The enhancement of healthcare quality has increasingly focused on achieving high value in healthcare delivery: ensuring that resources in health are distributed to care that has demonstrated effectiveness, and that has distributed equitably across populations utilising any given system.

The notion of 'value-based health care' is broader than the quality agenda and is therefore attracting significant support across many health systems internationally, including in Australia and specifically in the state-system across New South Wales. Value-based health care in some jurisdictions has been conceptualised in terms of the 'health outcome achieved per dollar spent', but more recently also in terms of optimising the value of resources through their utilisation for each patient sub-group.[1,2]

In New South Wales, value-based health care is not a formulistic approach and is conceptualised as delivering services that improve health outcomes that matter to patients: the experience of receiving care, the experience of providing care, and the effectiveness and efficiency of care.[3] Reflecting on other health systems internationally, a number of initiatives of NSW Health stemming from the Leading Better Value Care program have sought to enhance health outcomes, effectiveness, efficiency and consumer experience.[4] Limited research has been oriented to the experience of providing care as a clinician to date. In progressing this agenda, NSW Health should seek to establish a knowledge base regarding the definition and assessment of the clinician experience of providing health care.

Enhancing experiences of health care

Utilisation of patient experience data is now recognised as a core component of enhancing health systems, along with improving the health of populations and reducing the per capita costs of care.[5] Patients are uniquely positioned to provide insight regarding their care. Furthermore, they are the only common link between healthcare services and care processes through which the overall care experience can be documented. Patient experience data can therefore inform healthcare providers of problems in the care process, which could involve the coordination of care, the care environment or the provision of treatment (6). Patient experience data are also powerful in an ideological sense in the movement away from paternalism in health care, recognising patients as individuals rather than as disease areas.[7] Research to date has focused primarily on the value of data regarding patients' "*direct experience of [the] care process through clinical encounters or as an observer*" (page 2), and its positive association with patient safety and clinical effectiveness across multiple disease areas and settings.[6]

Incorporation of the patient experience ensures that healthcare provision is responsive to the preferences, needs and values of each patient.[8,9] In Australia, the National Safety and Quality Health Service Standards require "*the involvement of consumers in the organisational and strategic processes that guide the planning, design and evaluation of health services*".[10] This involvement has translated into routine capture of patient experience data to support health systems' assessment and evaluations in NSW Health.[11]

Defining and capturing experience

Capturing experience data is challenging.[12–16] For many years, patient satisfaction surveys were used to provide an indication of patients' experiences.[17] For health professionals, job satisfaction has been explored extensively internationally using a range of validated survey tools, often in terms of its association with stress and burnout.[18–20] Whether exploring health care from the patient viewpoint or health care as a work environment, surveys of satisfaction do not provide information about the experiences that lead to feelings of satisfaction or dissatisfaction. Data regarding satisfaction provides only a judgement of whether an individual's expectations were met in any given context usually at one snapshot in time, which can be influenced by a range of factors. Satisfaction ratings may therefore vary widely between individuals and among individuals who have experienced identical circumstances.

In addition to exploring job satisfaction, clinician-level data have focused on data regarding (predominantly negative) physical and psychological symptoms arising from clinical work such as burnout, depression, stress, fatigue and experiences of challenging clinical events such as clinical error.[21–23] Such findings convey important information about the impacts of clinical work, highlighting the vulnerability of clinicians to detrimental psychological effects, but do not provide experiential data comparable to the information sought from patients holistically about their experiences in the healthcare system or during an episode of care. The impacts of experience of providing care for clinician engagement, absence and retention have also been widely documented.[23]

Evidence regarding clinician's experiences of healthcare delivery

Healthcare services are facing continuous change in the context of longer life, increasingly complex health conditions, and the associated technological and service innovations.[24,25] In Australia, and New South Wales specifically, substantial investment in health infrastructure programs has driven a growth in transformational change projects.[26–28] These projects include: 1) clinical and non-clinical business process re-engineering for better patient care, compliance and hospital administration, 2) information communication and technology integration towards digital healthcare services, 3) workforce realignment to attract and retain talents for operating new hospitals, 4) clinical redesign leading to better value care, and 5) new medical equipment in response to new models of care.

Clinicians have a central role in creating change and ensuring that benefits are realised. While measures of patient experience are well established, measurement of clinicians' experiences of providing care in the context of transformational change projects and smaller scale change focused on quality improvement are disparate and generally captured in relation to specific change projects.[27] As NSW Health is working towards establishing mechanisms to monitor and evaluate all aspects of value-based care, definitions and measures of clinician experience are sought that focus on the clinical and supportive care aspects of the clinician role in the context of change and innovation, rather than on job satisfaction more broadly. This rapid review of evidence was therefore commissioned by NSW Health to address the following review questions:

1. How has clinician experience of delivering health care been defined in the literature?
2. What survey instruments and measures of clinician experience have been developed, and applied to evaluate the impact of a health system change or monitor health system performance?
3. How have clinician experience measures been used to assess the impact of health system change on the experience of giving care?

3 Methods

This literature review utilised a rapid evidence assessment (REA) methodology. A Rapid Evidence Assessment (REA) is a research methodology that uses the same methods and principles as a systematic review but makes concessions to the breadth or depth of the process, in order to suit a shorter timeframe and address key issues in relation to the topic under investigation.[29-31]

The purpose of an REA is to provide a balanced assessment of what is already known about a specific problem or issue. The shorter time frame, lower cost (relative to full systematic reviews), and evaluation of the strength of the evidence make REAs particularly helpful in informing policy and decision makers, program managers and researchers.

REAs utilise a number of strategies to assist in facilitating rapid synthesis of information. These strategies include having a narrow question, limiting the time frame in which studies are published, limiting the scope to English language articles and making concessions on how the published studies are synthesised. Often REAs make use of existing high-quality guidelines or systematic reviews and meta-analyses to assist making them rapid. Thus, undertaking an REA maximises information in the existing synthesised literature in order to minimise time and cost.[30]

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was used to guide the reporting of this rapid review.[31] The PRISMA statement is an evidence-based approach for reporting systematic reviews and meta-analyses.

Inclusion criteria

- *Types of publication:* Publications were eligible that are available in English that reported original primary empirical or theoretical work published from January 2009–June 2019.
- *Types of settings:* Any healthcare setting, including but not limited to public or private hospitals, day procedure centres, general practice or other primary/community care
- *Types of study design:* Conceptual, theoretical, quantitative or qualitative studies of any research design
- *Interventions:* Studies examining changing, new, or innovative healthcare delivery that includes but is not limited to the introduction of technologies of other innovations; introduction of new models of care or redesign of care processes; workflow and service restructure or the introduction of new programs or policies
- *Outcomes:* Experience data from clinicians defined as self-reported information about what happened to any given clinician whilst providing health care.

Exclusion criteria

Articles were excluded if they did not meet the inclusion criteria. Non-empirical literature such as opinion pieces, letters and editorials were excluded, along with studies that employed hypothetical vignettes. Studies from developing countries were excluded because the review aimed to identify approaches that would be applicable to the Australian healthcare context.

Peer review literature

A range of text words, synonyms and subject headings were developed for the three major concepts in this review of *clinician experience, change* and *health care*. These text words, synonyms and subject headings were used to undertake a systematic search of two electronic databases that index journals of particular relevance to the review topic (Medline and PubMed) from January 2009–June 2019 in order to focus the search on contemporary policy development. See Appendix 1 for search strategy. Hand searching of reference lists of published papers ensured that all relevant published material was captured. The results were merged using reference-management software (Endnote, version X8) and duplicates removed.

Grey literature

Qualitative studies reported in the grey literature (for instance, reports and papers published by government departments, intragovernmental agencies, public or private health service providers, non-government agencies, professional bodies and advocacy groups) were identified by searching the websites of relevant organisations (see Appendix 2 for a list of the organisations included). The literature identified was assessed along with the papers from the database searches.

Study selection and data extraction

Two reviewers (EM; LM) independently screened the titles and abstracts or the executive summaries for grey literature. Copies of the full articles were obtained for those that were potentially relevant. Inclusion criteria were then independently applied to the full text articles by two further reviewers (RH; MPI). A team member (EM) then conducted a face validity check of the identified material. Disagreements were resolved through final discussion between the whole of the review team. The following data were extracted from eligible literature: author(s), publication year, location and setting, objective, healthcare provision that was the focus of the research and clinician experience data.

Data synthesis

Findings were analysed using a narrative empirical synthesis in stages, based on the study objectives.[32] A narrative approach was necessary in order to synthesise the qualitative and quantitative findings. We did not believe that a quantitative analytic approach would be appropriate due to the heterogeneity of study designs, contexts and inclusion of grey material. Initial descriptions of the eligible studies and results were tabulated (Appendices 1 and 2). A narrative synthesis of the findings was produced by exploring patterns in the data to identify consistent findings in relation to the review objectives. Interrogation of the findings explored relationships between publication characteristics and their findings; the data emerging from different publications; and the influence of the use of different outcome measures, methods and settings on the resulting data.

Included studies

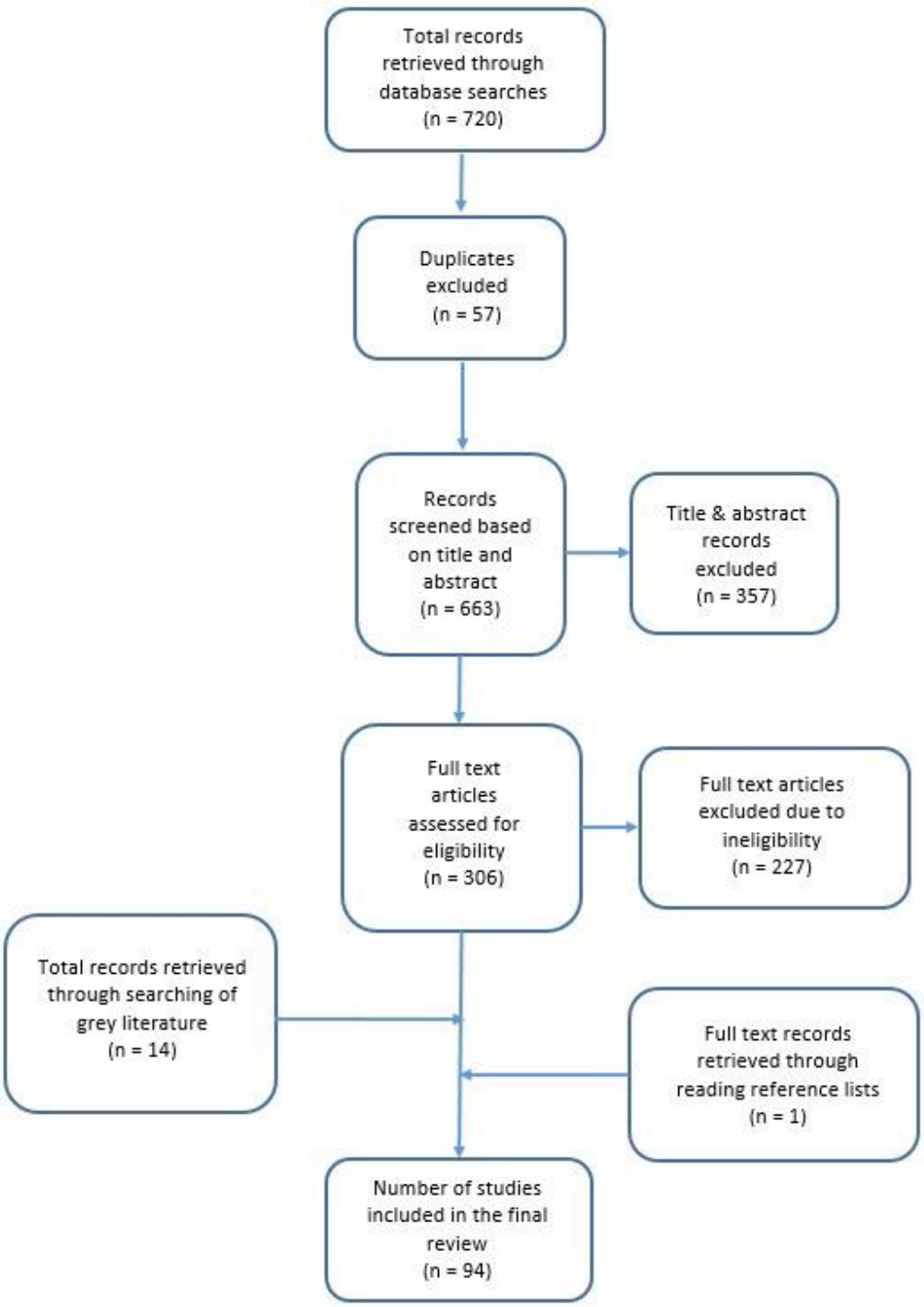
After removing duplications, 663 records electronic database were identified. The title and abstract screening review resulted in 306 references that fulfilled the inclusion criteria; full text of these publications was obtained. Seventy–nine articles were identified as eligible from the database full text review, 14 further articles were identified from the grey literature and one additional publication was identified via hand-

searching. A total of 94 publications were included in the review based on the inclusion and exclusion criteria.

Excluded studies

The reasons that studies were excluded from the database search (n = 227) were: non-inclusion of clinician experience data[176], a focus on job-related outcomes such as job satisfaction, engagement and retention[13], and a focus on readiness for change at an individual or organisational level.[38]

See the flow diagram of the literature selection process below.



4 Findings

Characteristics of included studies

In total, 94 articles were included in the review; 79 from the peer-reviewed literature obtained via the electronic database searches, 14 articles from the grey literature and 1 article obtained via hand searching. Articles emerged from Australia[21], UK[16,] US[13], Canada[10], Denmark[8], Sweden[6], Spain[2], Switzerland[2], Italy[2], Norway[3], France[2], NZ[2], The Netherlands[2], Singapore[1], HK[1], Northern Ireland[1], Israel1 and Germany.[1] Articles reported data from the health system level[8], across multiple areas within one or more hospitals[60], specific specialities within hospitals[10], integrated care settings[8], primary care[6], community health care[1], and ambulance.[1] Diverse health care settings were utilised, comprising mainly inpatient hospital settings. Hospital settings in which studies were conducted included intensive care, perioperative care, emergency care and maternity settings. Articles were qualitative[41], quantitative[24] or mixed- or multi-methods.[31] Where multi- or mixed-methods approaches were used, these approaches often combined qualitative methods. Quantitative studies were all surveys, with some incorporating a small portion of open-ended items. Summary tables of the included studies from the database and grey literature respectively are attached as Appendices 3 and 4.

Most of the research papers on clinician experience comprised qualitative research designs involving the conduct of interviews and focus groups. Health professional groups examined in the studies mainly involved nurses and doctors, but a number of studies also included allied health samples or pharmacists. Other health professional discipline groups examined involved midwives and dietitians. Some studies involved examinations of health care experiences between discipline groups, such as between doctors and nurses. Interestingly, few studies involved the conduct of observational work, which would have enabled examination of clinical experiences in actual practice. Similarly, there were few studies that involved the conduct of survey studies (n = 24), which often examined the psychometric properties of variables underpinning clinician experiences.

Question 1: How has clinician experience of delivering health care been defined in the literature?

Clinician experience was not explicitly defined in the identified literature, but the intent of the identified research when capturing experiential data was to gather attitudes and perceptions of experiences by asking for subjective reports through self-reported data, rather than seeking to gain objective experience data. The distinctions and relationships between attitudes, perceptions and experiences were not made clear.

Psychological literature defines attitude as the way an individual thinks about a matter, an individual's predisposed state of mind towards a given topic or object. Attitudes comprise both conscious and unconscious aspects and evolve continually. Attitudes are derived as a result of an individual's values, beliefs, perceptions and experiences.[33] Perception describes the way that a situation or object is seen and understood by an individual, often thought to be influenced by past experiences. The same event can therefore be perceived in different ways by different individuals.[34] The relationship between attitudes, perceptions and experiences is complex and a matter of much psychological research beyond the scope of this review. In the context of the present review questions, clinician experience has largely been understood

as self-reported information presented by clinicians about how they practise patient care, the activities they undertake and how providing care makes them feel. In some instances, observational data were also collected and synthesised to capture the events that occurred within care provision. When gathering observational data, clinician experience could be defined in an alternative way, as the events that occurred in a given instance of care provision.

Rather than being overtly expressed in any given article, these two conceptualisations of clinician experience, as subjective reports of a past experience and of the process of undertaking a change, are evident from the question scope and content of the included studies. Questions commonly explored clinicians' perceptions of the need or justification for change, their perceived impact of change on personal care practices, and their impressions of contributing to change. For example, when examining clinician experiences of trying to meet a four-hour target in the Emergency Department (ED) through a new model of care, clinicians were asked about their perceptions of the need for a four-hour target, the perceived impacts on care giving and opportunities arising from the change.[35] Similarly, when redesigning post-natal care, midwives were asked to discuss their experiences of the changes made by talking about the perceived impacts of the changes on the care provided and their views of how it felt to be in a change process.[36] These examples reflect the body of the evidence in the kinds of questions asked about a given change in provision of care or about providing care in a changing context more broadly.

Only one study identified in the electronic search sought to develop and validate a clinician experience measure.[37] This survey was also utilised as the basis for one article in the grey literature.[38] Both survey instruments are described in detail on pages 17–18. Experience of work was defined as encompassing a number of facets that are included in the Picker Staff/Employee Questionnaire.[39] This survey instrument is associated with the Picker Staff Experience Programme that comprises surveys for welcome interviews for newly commencing staff, staff engagement, whistleblowing and exit interviews. The Picker Programme does not define its use of the term 'experience' beyond it being feedback from individuals regarding their encounters. The items within the Picker surveys indicate that work experience data comprise a range of self-reported information about the work environment interactions within this experience, perceptions of environment and interactions, and satisfaction with the work environment.

The literature indicated there was overlap between: 1) clinician experience of delivering care, 2) health workforce job satisfaction, and 3) clinician engagement. These elements were often assessed in conjunction, including in the Picker surveys, but definitions and delineation between these constructs were not sufficiently discussed.[39] It was apparent that self-reported experiences of providing care were closely linked to both resulting job engagement and satisfaction. The nature of this relationship was not sufficiently examined to draw links. For example, a lack of clinician engagement was identified in professional allegiances across and along boundaries for clinicians.[40] This lack of engagement reproduced inequalities among professional groups and prevented some groups from participation in service change. However, there was little information about the relationship between engagement and experience, such as whether clinicians' experiences had led to a lack of engagement or whether lack of engagement further affected clinician experience.[40] In a further article, interviews with doctors in cancer care services demonstrated that the organisation of cancer services comprised a work system, which consisted of a set of tasks broken down into narrowly focused tasks. This experience underestimated the emotional components of patient-doctor encounters, which impacted on job satisfaction. The creation and maintenance of genuine patient-doctor relationships was therefore more difficult to attain, leading to perceptions of failed encounters on behalf of the doctor.[41]

In contrast to the limited definition and conceptualisation of clinician experience and related constructs, a number of indicators emerged from the literature as contributing to positive or negative clinician

experiences. Positive indicators of clinician experience related to clinicians' attributes, the environment in which they worked and system changes. Active patient participation in health care contributed to positive clinician experiences, while clinicians' respect for each other's competencies and valuable contributions to patient care influenced their ability to collaborate effectively.[42,43] In the introduction of an antimicrobial stewardship program in private hospitals, the use of an expert team to provide prescribing advice and education without intruding on existing patient-specialist relationships was regarded as an effective influence on clinician experience.[44] In a qualitative study, nurses were observed and interviewed to examine how they used x-rays and other medical images through picture archive and communication systems (PACS) in intensive care settings. With the introduction of PACS, nurses were able to view images relatively quickly, which enhanced their ability to act autonomously and enhance patient care.[45] The development of trust among team members of different disciplines was regarded as essential for effective clinician experience. The co-location of team members working on common projects in hospitals and medical and nursing leadership facilitated interdisciplinary practice between the nursing and medical professions.[46]

The introduction of ICT into health care settings supported enhancing the experiences of nurse practitioners in a number of ways. The availability and completeness of electronic patient information enabled timely access to patient data and high-quality diagnostic and therapeutic decision making. This timely access and efficient decision-making facilitated patient care. Ready retrieval of patient data from a central database supported and improved communication between health professionals within and across sites, and facilitated holistic care.[47] The leadership style of clinicians was a positive indicator of experiences. In a qualitative study, dietitians were interviewed about their perceptions relating to the uptake of universal nutritional care processes. An inclusive leadership style and work culture that encouraged dietitians to speak out about how to carry out their work practices facilitated dietitians to embrace practices that ensured the collection of consistent and clear patients' nutrition records.[48]

Factors that occurred at a systems level were reported as indicators of clinician experience. Senior management support for how clinicians conducted their work, the availability of ongoing education and training tailored to the needs of various professional groups, and the presence of an organisational culture that addressed patient care needs facilitated positive clinician experiences, such as those encompassing end-of-life care.[49] Clinicians situated in clinical settings that practised patient-focused models of care enhanced clinicians' experiences. Pharmacists who were in patient-focused practice settings were more likely to adopt advanced prescribing practices, over those in product-focused practice settings. Pharmacists were also more likely to seek out opportunities to collaborate with physicians to discuss their prescribing practices in patient-focused settings.[50]

Negative indicators of clinician experiences included tensions in balancing their professional responsibilities and the quality of patient care.[51] The presence of a fragmented system of care with multiple members of health professionals on teams, and multiple teams responsible for patient care, impacted clinician experience. In a study examining doctors' views about the adoption of venous thromboembolism (VTE) guidelines, doctors spoke about how all health professionals shared the responsibility of implementing and using the guidelines, but no one was responsible.[52] Similarly, in a cross sectional study examining the implementation of evidence-based discharge services for the management of stroke, there was a lack of clarity regarding the referral decision-making process, delays in securing social care input and lack of appropriate follow-on services for patients after discharge.[53] In a qualitative interview study evaluating the implementation of a palliative care intervention in an outpatient Chronic Obstructive Pulmonary Disease (COPD) clinic, while nurses and doctors were very experienced in delivering care, nurses expressed fear of failure. Nurses stated that they were concerned about their own skills in delivering care. Conversely, doctors did not question their own skills and were very confident about the skills of nurses.[54] In a related study, nurses faced challenges in obtaining medical reviews from junior doctors for patients with early

deterioration. Nurses spent considerable time presenting 'convincing' evidence about their patients' pending deterioration and collating this information for junior doctors.[55]

Environments involving extensive hierarchical structures in hospitals adversely affected clinician experience. In a cross-sectional survey focused on psychosocial job characteristics, clinicians' perceived health, psycho-organisational constraints and higher organisational constraints were associated with clinician relocation between health care sites.[56] Dietitians were ambivalent about implementing change in clinical practice in environments involving extensive hierarchical structures. Similarly, environments where dietitians received no support from managers also were associated with lack of implementation.[48] Nurse practitioner integration into health settings were also affected by complicated organisational structures and a lack of recognition of the valued role of nurse practitioners, which in turn adversely influenced their uptake into health settings.[57] Communication practices within intensive care settings were perceived to be ineffective for staff engagement since these practices were based on a hierarchical approach to knowledge transfer and project awareness.[58] In research evaluating the reconfiguration of respiratory services in four primary care organisations, managers and clinicians worked to protect and expand their claims to particular practices, which sometimes led to conflicts and contests between professional groups.[40]

Question 2: What survey instruments and measures of clinician experience have been developed, and applied to evaluate the impact of a health system change or monitor health system performance?

The under-developed conceptualisation of clinician experience was reflected in the lack of survey research in this field. Assessments of clinician experience developed and applied to evaluate the impact of a health system change or monitor health system performance were primarily qualitative, and these findings are summarised in relation to Question 3. A plethora of survey studies captured data using validated instruments of psychological or organisational outcomes that may be linked to clinicians' experiences of providing care, such as their degree of job satisfaction or burnout, but not of the experience itself.

Twenty studies (18 from the database search and 2 from the grey literature) included survey methods to capture clinician experience data, with no single survey instrument widely adopted within these studies.[37,38,56,59–73] Of the identified studies, only two survey studies sought to assess clinician experiences of providing care beyond a specific change event and using a survey instrument explicitly capturing experience outcomes.[37,38] Surveys were generally cross-sectional, with no studies detailing survey research over extended periods.

Stahl et al. (2017) adapted the Picker Employee Questionnaire, comprising 75 closed questions relating to work environment, experience and engagement, for use with midwives in Germany. Psychometric evaluation was completed via exploratory factor analysis, reliability analysis and construct validity assessment.[37] Eight scales emerged with a Cronbach's alpha of 0.7 or more, and the findings indicate that the survey can distinguish between subgroups of midwives and hospitals. The original Picker Employee Questionnaire included 111 questions, with 14 subscales comprised of 91 questions. Topics included managerial support, intra- and interprofessional teamwork, workload, organisational structure and process, work scheduling, physical work environment, patient care, education and training, information technology, food and contractual conditions. Four items examined overall job satisfaction. Response options varied between items with do not apply options. Stahl et al. (2017) used expert groups of midwives to examine the face validity of the original instrument and identify those items relevant to the midwifery context, in addition to those items critical but absent in the original tool. Cognitive interviews were then employed to determine content validity. Reliability and validity assessments were completed with two groups of four midwives each from

five different hospitals. Twenty-seven items in the survey were retained in their original form, 14 further items were altered slightly for contextual relevance. Fifteen new midwifery-specific questions were added which related to: workload (three items); midwifery model of care (one item), immediate superior (two items), support for education and training (one item), and development of working conditions during the past three years (eight items). Four items on engagement were added. Eleven items were added on working conditions were added on: contractual working time, on-call duty and overtime (seven items), pay (two items), and type and amount of community midwife services provided (two items). In all, 71 questions were removed from the sections on managerial support, intra- and interprofessional teamwork, physical environment, information technology, food, organisational structures and processes, patient care, and coordination of care with areas not linked to midwives.[37]

The UK National Health Service (NHS) has engaged Picker Europe to undertake a staff survey across the NHS each year, which comprises a core composite and additional optional elements for individual services or groups within the NHS to utilise such as leadership assessments.[38] Data regarding the validation of the purpose built adaptation of the Picker Staff Questionnaire were not identified, the survey items were retrieved along with results of the annual staff survey which are presented online. Results are presented as summary information regarding experiences defined extremely broadly by encompassing experiences of: safety culture, equality, diversity, inclusion, physical and psychological health, bullying, abuse, harassment, work environment, engagement and management support. Staff experiences are reported as the percentages of staff citing particular events or symptoms.

Studies often reported experience data within another outcome including: clinician engagement, team climate, emotional exhaustion, information systems expectations or safety attitudes, with some degree of experiential data within each of these studies.[59,63–65,70,74] As noted, delineating experience from other concepts such as engagement or safety attitudes and behaviours was challenging, given the limited focus on clinician experience in the identified survey research beyond the Stahl et al. (2017) paper.

Lack of clarity regarding the relationship between experience and engagement was apparent in the conceptual framing of clinician engagement. Definitions of clinician engagement varied substantially, and its relationship with experience was poorly defined. Some studies therefore captured engagement using validated measures and then added on specific items to capture experiential data that were linked to engagement. For example, in a study by Dellve et al. (2018), clinician engagement was conceptualised as *"attitudes toward engagement in organizational development, work engagement as a cognitive state, and clinical engagement behaviour in developing patient safety and quality of care in practice"*.[59] The latter component of the definition enabled the study to explore the engagement activities that clinicians were involved in and experience data relating to these. Clinician engagement behavior was captured on two scales. For patient safety, the scale consisted of four items: *1)"At our clinic, we: (a) work actively to improve patient safety; (b) discuss how to avoid errors; (c) work actively to improve reporting of errors; and (d) report directly and without hesitation when we see something that can harm patients' safety."* For quality of care, the scale consisted of three items: *"At our clinic: (a) we have an active dialogue about how to improve good care for the patients; and (b) we have the possibility to meet patients' needs; also, (c) the values of providing good care are my own values"*.[59] These items ask clinicians about their experiences of engaging in safety and quality, but are limited to key behaviours, which do not encapsulate holistic experiential data about providing care.

The term 'engagement' was used in a much broader sense in a study that discussed nurse engagement with an intentional rounding initiative utilising a survey. In this study by Dix et al. (2012), outcome variables included data of nurses' perceptions of the change, buy-in, experiences of impacts on the caregiving process and satisfaction.[74] Further details of the survey instrument and its development were not provided.

The included studies indicate that clinician experiences and engagement are interlinked but not synonymous; experience of providing care captures a broader range of information about what happened to a clinician in the course of healthcare provision.

In a strategic insights paper utilised by Western Australia Health to inform an investigation of engagement, morale and working conditions of staff in Perth Children's Hospital (described on page 23), Press Ganey (2017) make the link between patient experience, workforce engagement and financial outcomes for healthcare organisations. This work contributes to the predominant focus on clinician engagement rather than experience in some of the identified literature.66 Their research utilised two survey tools that contributed to the Perth Children's Hospital Investigation: physician engagement and the Practice Environment Scale–Nursing Work Index (PES–NWI).[66,75] The survey tool for engagement is not disclosed. The PES-NWI was derived from the Nursing Work Index (NWI) and developed specifically to capture the hospital practice environment. Items of the PES-NWI consist of five subscales that capture experiences in relation to key aspects of the work environment of hospitals: 'Nurse Participation in Hospital Affairs', 'Nursing Foundations for Quality of Care', 'Nurse Manager Ability, Leadership and Support of Nurses', 'Staffing and Resource Adequacy', and 'Collegial Nurse-Physician Relations'.[76] The Press Ganey report focuses on subscale data in relation to safety and quality outcomes, reporting a relationship between a positive work environment, engagement and safety and quality of care.[66]

In a further group of nine studies, authors developed their own surveys in the absence of existing validated measures to capture experiential data from clinicians about current processes of care provision or specific changes to care provision, including the introduction of an electronic health record (EHR), the treatment of sepsis and redesign of observational charts.[36,60-62,67-69,71,73] In these studies, surveys were often lengthy with multiple components. Reducing and assessing clinician experience is simplified when examining a single feature of care provision, and this was demonstrated in several studies. In focusing on a specific activity within the healthcare environment, these study surveys were able to capture explicit opinions but also experiential data about what happened to clinicians involved in the process of introducing the EHR. For example, in studying experiences of implementation of an EHR, Bloom and Huntington (2010) examined clinicians' reports of the amount of time spent documenting, number of documents completed, effect on patient care, interference with other activities, effect on communication and relationships, coding and billing processes, and the perceived efficiency of the overall process.[60] Similarly, in an evaluation of the implementation of HealthPathways, a further study captured data of the duration of patient consults, ease of use of the new system and experiences of referral from clinicians' post-implementation.[71]

Two multi-instrument studies combined validated measures and purposively developed items.[56] In the first, the Karasek Job Content Questionnaire, the Nursing Work Index-Extended Organisation (NWI-EO), the SF-12 Health Survey and 51 researcher-developed items were used to explore the impact of a departmental relocation on psychosocial job characteristics, perceived health and psycho-organisational constraints amongst a range of health care workers in France.[56] The 51 researcher-developed items were derived from semi-structured interviews conducted in an initial phase that captured experience data around how the service was organised, the work environment within and career plans of individual staff.[56] This study provided the most holistic assessment of clinician experience, and highlighted that in order to capture holistic experience data, it was important to synthesise a range of validated and purposively developed survey instruments. Similarly, a study of staff experiences of closing a psychiatric ward captured uncertainty and self-efficacy using validated tools, and experiences of perceived functioning on the ward through a researcher-developed tool.[72]

Question 3: How have clinician experience measures been used to assess the impact of health system change on the experience of giving care?

Qualitative research, and in some cases surveys, were used primarily for evaluations of the implementation of a change project, ranging from the introduction of new models of aged care, to a new technology such as electronic medical record (EMR) across a health service, to local-level quality improvement projects (see Appendix 3). Change projects acted as case studies for clinician experience in the context of change. Case study approaches enabled the complexity associated with health system change to be captured.[77] The synthesis of these case study style change projects reveals a wider approach taken to measuring and applying clinician experience in order to understand the impact of health systems change.

Clinician experience was primarily captured for the purpose of providing feedback on a single change project or issue, to understand its perceived value, impacts on care delivery, and factors that may impact its uptake and ability to achieve maximum benefits realisation.[71,73,78] Far fewer studies examined clinician experience in a holistic sense, exploring experience of providing care across a range of events, interactions and points in the care-giving process.[37] The body of evidence strongly indicated that clinician experience was captured and valued appropriately for the purpose of improving care, but also that consideration of the experience of providing care on clinician's personal and professional lives was not a key driver of the data collection.[78] Most studies retrieved from the database search captured cross-sectional information from clinicians after a change had been implemented. In qualitative work, clinicians were recruited as key informants about the use of a new system, technology or model of care.[79,80] The data from studies retrieved through the electronic search were primarily concerned with barriers to implementation of a change, with the ultimate goal of promoting implementation through alleviating these barriers as opposed to looking beyond a unit or service for system impacts.

The grey literature provided several examples of evaluations of system level changes and the way that clinician experiences were measured and used to assess the impacts beyond a discrete unit or service. Research designs that included a survey around benefits realisation in terms of clinical and process outcomes, coupled with qualitative interviews to capture experience data, were apparent in many articles as a strategy to capture data from clinicians about change projects. In evaluating the introduction of innovative healthcare models for the provision of aged care services through the 'Better Health Care Connections' program, data were captured from clinicians, along with consumers and system-level representatives, as the three stakeholder groups impacted by the change.[78] A survey was implemented to capture data about the model of change applied in each project, which enabled the project leads to report on the change management approach used and allowed an understanding of the outcomes sought at each stage of implementing the change. This information was critical for the evaluation of benefits realisation. Qualitative interviews were used to capture experiential data from the involved clinicians about barriers and enablers to implementation of the change. The data collected were entirely focused to the achievement of the change project and the impacts of the model of change and the current work environment (such as leadership and siloed working) on clinicians' ability to realise the benefits.[78] Whilst the framing of the findings was directed towards the change projects, it was clear that experiences of the specific change project were impacted and influenced by wider experiences of delivering care. For example, clinicians talked about the aged care environment more generally and professional roles and interactions within this environment as underpinning their change efforts.

Survey and interview data, along with case studies were used to evaluate the *"Take the lead"* program, which develops nurse managers through education and professional development. Data collected captured clinician experiences and reports of the changing capabilities and skills of nurses at the mid-point of the program roll-out.[81] Experiences regarding improvements in unit level outcomes from the change project

such as impacts on rates of adverse events, staff satisfaction and a range of management activities were captured via survey only. Experience data captured primarily related to experience of the Program itself and of its perceived impacts on nurse manager behaviour. The respondents often focused on outcomes of changes they had instigated as a result of the program; however, limited information was captured about being in the role of nurse manager and of providing care.[81] Similarly, work by the King's Fund in the UK exploring clinicians' experiences of transformational change gathered data to understand how it felt to be part of a change process and told stories of their experiences of providing care through this lens.[27] Clinicians were interviewed as 'change participants' and talked of how their role and relationships with consumers and communities developed through the process of transformational change.[27] The fundamental changes to the experience of providing care as a result of going through transformational change came through strongly in the accounts from the clinicians involved, for example, of bringing together health and social care services.[27]

A similar application of clinician experience data was evident in the report by the NSW Agency for Clinical Innovation.[82] Interviews with system-level stakeholders and clinicians were utilised, along with document and observational analysis, to understand the model of change applied, its value and the factors impacting implementation. A key finding in relation to clinician experience data was the underpinning approach to implementation of transformational change. The authors highlight the distinction between "*transformations that instruct practitioners in what is required (that is, adoption and adherence) and those that expect practitioners to adapt how they work using the change initiative as springboard for its redesign (that is, adaptation and learning).*"[82] The nature of clinician experience data captured is likely to be determined by its desired application; surveys may lend themselves to capturing adherence information, whereas qualitative data is likely to be more informative when exploring experiences of adaptation and learning in the context of change.

The distinctions made between adoption and adherence and adaptation and learning are apparent in articles that examine implementation of evidence-based guidelines. In such articles, successful implementation and change is signaled by adoption and adherence.[83] In the context of adoption and adherence, clinician experience data is used to understand barriers to implementation. When implementing Traumatic Brain Injury Guidelines, the need to address mismatches between payment models and trauma care costs and a number of professional and personal barriers were identified from interviews and case studies with involved clinicians.[83]

Using qualitative methods, some studies capturing experiential data over prolonged periods (several months or years) were able to gather information about adaptation and learning amongst clinicians in the context of healthcare change.[84,85] The HealthLinks evaluation, exploring a novel funding approach for chronic care, exemplified the notion of clinician experience of implementation and change as being about adaptation and learning.[86] Clinician experience data were captured to explore how they adapted to the new funding model and altered their thinking and behavior in relation to chronic care. Experiences were discussed qualitatively in terms of system and leadership support that enabled new practices and adaptation.[86] Similarly, a process evaluation of the implementation of discharge planning using Normalization Process Theory captured data from healthcare staff to explore how and when the discharge planning process was embedded into everyday practice, and examined how staff adapted to the change.[84] Qualitative data were also used to understand the range of impacts of any given change on clinicians' experiences of providing care. These data were generally very specific to the change being made or to a unit of care in which a change was being made. For example, several studies explored experiences of health professionals shifting to interprofessional working, but these were limited to an orthogeriatric unit, a cardiac unit, the escalation of deteriorating patients or an intensive care unit.[87;43,58,88] The single-site and unit approach taken created challenges for generalising the data collection tools or findings to wider clinician experiences of care provision.

Five articles from the retrieved literature captured clinician experience more broadly, rather than in relation to a change project.[37,38,41,75,89] The focus of this work was primarily around the changing role of clinicians in contemporary healthcare. In the UK, the Kings Fund in partnership with the Royal College of Physicians gathered data through a series of events comprised of four components, of which two captured experience data through electronic polling and focus group style discussion at each table using topic guides.[89] Clinicians discussed several factors impacting their experiences of providing care including changing personal and career expectations of those working as doctors, increased desire for partnership by consumers and system-level organisations, the blurring of boundaries between health professions and the role of clinicians as managers, and specifically doctors as leaders. Although experience contributed to the formation of these perspectives, experiential data of providing care often provided information about the context of providing care as opposed to specific experiences. In Germany, a study of midwives' experiences of providing care using the adapted Picker Employee Questionnaire revealed that those employees of a higher age or seniority in their job or working in a larger unit size were significantly more positive about their experiences of providing care.[90]

Several reports of investigations into poor quality care or stemming from such investigations were identified in the grey literature that discussed the issue of clinician experience of care provision and its intersection with safety, quality and patient experience. Selected articles included an investigation of engagement, morale and working conditions of staff in Perth Children's Hospital.[75] A survey tool drawn from the US (described on page 19) enabled the capture of information about a range of different factors across the organisation impacting on clinician experience but not focused to changes in care specifically. Some of the key findings were that the hospital was a very unhappy place to work with extremely low morale leading many to resign. Discontent was expressed in relation to the consultation and communication strategies employed for the organisational changes experienced by the hospital staff.[75] The data were used to guide service-level changes based on an understanding of common experience and perceptions of the working environment and the impacts on clinicians.[75]

Gaps in the evidence

Whilst a large number of articles retrieved were relevant to the capture and application of clinician experience, two significant evidence gaps were identified. The first is the lack of research studies related to the use of large-scale clinician experience surveys at a health service- or system-level. Whilst large-scale data were captured in surveys such as in the NHS, we did not identify any evidence of the application of these data for driving or exploring service or system improvements, or for any other purpose. It is currently unclear how clinician experience data are being used and what value this use might add towards health system outcomes.

Secondly, few studies captured a holistic perspective of clinician experience, with most examining experiences in relation to discrete changes occurring within a service or system. Clinician experience appeared to be valued primarily in relation to the implementation of change and the associated barriers and enablers. A result of this focus was that clinician experience data comprised disjointed information about certain clinical experiences. Clinician experiences are closely interconnected with work experiences, with a complex array of factors that contribute to a positive or negative experience of providing care that have not been disentangled. By studying clinician experience on a case study basis around a single change event in a health service or system, the complexity of clinician experience is reduced to the issues surrounding that specific change event. Yet these data do not provide a good understanding of how clinicians as individual people, and not only clinical employees, are experiencing being care providers.

5 Discussion

This Evidence Check of the measurement and application of clinician experience data in health systems retrieved 94 articles from the peer-reviewed (79) and grey (15) literature from 18 countries. We identified a large number of qualitative studies exploring clinician experiences in the context of changes occurring in health services and system, with fewer (24) survey studies, and just two articles that reported a service or system-level clinician experience survey.[37,38] In these two studies, the Picker Staff/Employee Questionnaire was adapted and administered. Key findings from the Evidence Check were that clinician experience is closely connected to work and psychological experiences; there was limited understanding of the relationship between experience and related constructs. Clinician engagement was commonly captured alongside experience data, along with information about the work environment and job satisfaction.

Question 1: How has clinician experience of delivering health care been defined in the literature?

Clinician experience of delivering care is not well defined in the literature, with attitudes and perceptions of a given issue or event generally captured in the retrieved studies. The predominant use of self-reported data collection methods and of qualitative approaches specifically, suggests that clinician experience is currently defined as self-reported information about what happened in the course of clinical work and how this impacted a clinician. Few studies utilised observation or structured surveys to document what happened in a given period or process. The inclusion of work-related measures, particularly regarding engagement, work environment, culture and job satisfaction when capturing experience data suggests that such factors are important in the context of clinician experience. Psychological research across multiple sectors highlights the association between workforce engagement, retention and organisational commitment, with higher levels of engagement also associated with job satisfaction, health and performance.[91–93] These findings, coupled with the availability of discrete definitions and measures of workforce engagement have made it a topic of research.

In contrast, experience is a multi-dimensional concept and many factors can contribute to this. Experience can be the knowledge and learning gained after an event, which may contribute to the formation of attitudes, beliefs and perceptions, or it may be the process of living through or undergoing an event. There is also an affective or emotional component to the concept of experience.[94] The complexity of the construct of experience is reflected in the limited understanding in the research relating to the concept of clinician experience and how this can be measured. Yet, knowledge of the factors that contribute to experience and of what an optimal experience outcome is in the context of clinical care is required to both measure and apply the information to enhance clinician experience.[94]

Features of the work environment appear to be indicators of a positive or negative clinician experience, with factors such as leadership, work scheduling, professional relationships, management support and safety culture identified across multiple articles.[48,49,56] Assessment of the work environment in the context of understanding experience is therefore important. Further work to delineate the relationships between these features of the work environment, clinician experience and outcomes of care would be valuable.

Question 2: What survey instruments and measures of clinician experience have been developed, and applied to evaluate the impact of a health system change or monitor health system performance?

Survey tools were utilised in 24 of the identified articles. Where surveys were used to assess clinician experience in relation to health systems change or performance, the surveys were generally comprised of researcher-developed items about the topic of the research accompanied by validated tools capturing data of work environment, satisfaction, engagement or psychological outcomes.[59,65; 63,64,74; 70]

The limited application of survey tools and the need for researcher-developed components reflects the lack of clarity regarding definitions of clinician experience and the limited availability of existing validated tools in this area as a result. The Picker Staff/Employee Questionnaire was the only tool that emerged that attempted to provide a validated instrument for capturing experience data amongst clinicians. The two articles in which this was used reported different adaptations of the Picker Questionnaire and only one of these (Stahl et al. 2017) provided validation data.[37,38]

The nuanced nature of experience lends itself to qualitative research methods, reflected in the high volume of qualitative research articles identified.[95] The use of qualitative methods to establish the features of clinician experience that are impacted by health system changes would provide a firm basis for survey development to meet the requirements of NSW Health in undertaking clinician experience measurement and analysis.

Question 3: How have clinician experience measures been used to assess the impact of health system change on the experience of giving care?

Clinician experience data have been utilised for the implementation and evaluation of change projects in health services and systems in many countries. A key purpose of clinician experience data is the provision of information from clinicians about factors that encouraged or enabled them to adopt, adhere or adapt to new practices, technologies and circumstances. Most studies identified in the peer-reviewed and grey literature were focused on a specific project and clinicians were viewed as critical to ensuring that proposed health service or system changes were taken up in practice so that benefits could be realised. The grey literature provided several strong examples of this uptake in the Australian context.[81,82]

Less is known about how experiences of providing care more generally impact clinicians and health system change. In the studies that examined clinicians' experiences beyond specific change projects, the articles did not discuss the impacts of clinician experience on health system changes. Data in such articles were used primarily to provide understanding of the experience of undertaking clinical work in changing contexts.[37,89] Patient experience has been explored in the context of key features of the healthcare process, which have also been examined in the context of specific healthcare events.[96] Key features of clinician experience have been identified as those that link to retention, well-being and performance, such as clinician engagement. A more developed understanding of the key features of clinician experience that are impacted by health system changes would be valuable for developing measures that capture the effects of health system change on the experience of providing care. A broader 'clinician pulse' style assessment may be valuable to compliment this information and to understand the experience of clinical work on a continuum rather than in the context of episodes of change or care.

6 Applicability

This rapid review of evidence was limited to articles from countries with broadly comparable health systems to that in NSW. As such, the findings are relevant to the NSW context and highlight some key areas for consideration towards achieving the Better Value Care agenda. In seeking to understand and enhance clinicians' experience of providing health, NSW Health may consider the following:

- Unlike patient experience, clinician experience intersects with experience of and satisfaction with work. The interrelationship between clinician experience, engagement, job satisfaction and a range of psychological outcomes associated with clinical work requires clarifying in the context of the value-based healthcare agenda. Specifically, establishing the indicators of a 'good clinician experience' and the extent to which these require assessment of clinician engagement, work environment, job satisfaction and psychological outcomes of work is critical. Findings from this evidence check indicate that both positive and negative indicators of clinician experience include features of the work environment and engagement
- This rapid review highlights that whilst some health systems are capturing data of clinician experience, little is known about the use of these data at a health system level and the value of this information for health system enhancement relating to any given health system outcomes. Establishment of the way in which clinician experience data at a health system level might be applied to enhance rather than simply understand experiences in the health system is needed
- Where there is evidence of how clinician experience data have been applied, this evidence relates to specific change projects within a health service or system. Self-reported data of clinicians' attitudes, perceptions and perceived experience provide feedback to enhance implementation by detailing barriers to adoption that a service or system can address or detailing approaches to adaptation to enable clinicians to change their thoughts and/or behaviour. NSW Health may wish to consider the extent to which this reflects the goals of the Leading Better Value Care Program and the type of clinician experience data that is most relevant to achieving these goals
- Observational data of clinician experiences were limited in the retrieved articles but may provide relatively objective insights into what happens in the process of care that is complementary to capturing subjective experiential data. Observations could be also utilised to understand how clinician experiences change over time and to consider how these understandings can be used to create change
- System and service-level clinician experience data to date has been integrated in staff surveys through third party organisations such as Picker Europe. Items from existing surveys would require psychometric and content analysis to establish relevance to NSW Health. Adaptation of existing survey approaches may be appropriate dependent on the proposed application of clinician experience data in NSW Health.

7 Conclusion

Knowledge of clinicians' experiences of providing care in NSW Health is lacking, with studies to date focused on the capture of the subjective experiences of clinicians involved in episodes of change. A small number of health systems internationally have sought to capture clinician experience data via staff surveys although these data are not clearly distinguished from data of the work environment, engagement and psychological experiences associated with clinical work. The application of clinician experience data at a health system or service level beyond discrete projects is lacking. Clinician experience data appear to be primarily used to provide an overview of how clinicians are feeling about the service or system in which they work and to enhance understanding rather than to create change. The assessment of clinician experience may be captured through adapted existing staff survey tools, but psychometric and content analysis is required for system relevance. Evidence to date does not establish the contribution of existing service or system-level survey tools to health service or system enhancement. Evidence to date indicates that clinician experience data has been utilised for understanding barriers to the adoption of changes and approaches that clinicians take to adapt to change in their environment. In progressing the Better Value Care agenda, NSW Health may wish to consider the proposed application of clinician experience data towards system enhancement as a basis for exploring the optimal measurement strategy.

8 References

1. Gray M. Value based healthcare. British Medical Journal Publishing Group; 2017.
2. Porter ME, Lee TH. From volume to value in health care: the work begins. Jama. 2016;316(10):1047-8.
3. New South Wales Health. Value-Based Healthcare 2019 [Available from: https://www.health.nsw.gov.au/Value/Pages/default.aspx.
4. New South Wales Health. Leading Better Value Care 2019 [Available from: https://www.health.nsw.gov.au/Value/Pages/leading-better-value-care.aspx.
5. Bate P, Robert G. Bringing user experience to healthcare improvement: The concepts, methods and practices of experience-based design: Radcliffe Publishing; 2007.
6. Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. BMJ open. 2013;3(1):e001570.
7. Wiig S, Storm M, Aase K, Gjestsen MT, Solheim M, Harthug S, et al. Investigating the use of patient involvement and patient experience in quality improvement in Norway: rhetoric or reality? BMC health services research. 2013;13(1):206.
8. Gerteis M, Edgman-Levitan, Daley J, Delbanco TL. Through the patient's eyes: understanding and promoting patient-centered care. San Francisco: Jossey-Bass; 1993 1993.
9. Luxford K, Newell S. New South Wales mounts "patient based care" challenge. Bmj. 2015;350:g7582.
10. Matete-Owiti S. Review of patient experience and satisfaction surveys conducted within public and private hospitals in Australia. Australian Comission on Safety and Quality in Health Care; 2012.
11. Information NSWBoH. New South Wales Patient Survey Program 2019 [Available from: http://www.bhi.nsw.gov.au/nsw_patient_survey_program.
12. Ward JK, Armitage G. Can patients report patient safety incidents in a hospital setting? A systematic review. BMJ Qual Saf. 2012;21(8):685-99.
13. Australian Commission on Safety and Quality in Health Care. Australian Safety and Quality Framework for Health Care. 2010 [Available from: www.safetyandquality.gov.au/wp-content/uploads/2012/01/32296-Australian-SandQ-Framework1.pdf.
14. Goldstein E, Farquhar M, Crofton C, Darby C, Garfinkel S. Measuring hospital care from the patients' perspective: An overview of the CAHPS® hospital survey development process. Health services research. 2005;40(6p2):1977-95.
15. Department of Health. Creating a Patient Led NHS Delivering the NHS Improvement Plan: Department of Health; 2005.
16. Department of Health. Equity and excellence: liberating the NHS: The Stationery Office; 2010.
17. Aiken LH, Sermeus W, Van den Heede K, Sloane DM, Busse R, McKee M, et al. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. Bmj. 2012;344:e1717.
18. Sibbald B, Bojke C, Gravelle H. National survey of job satisfaction and retirement intentions among general practitioners in England. Bmj. 2003;326(7379):22.

19. Lu H, While AE, Barriball KL. Job satisfaction among nurses: a literature review. International journal of nursing studies. 2005;42(2):211-27.
20. Kluger M, Townend K, Laidlaw T. Job satisfaction, stress and burnout in Australian specialist anaesthetists. Anaesthesia. 2003;58(4):339-45.
21. Chunming WM, Harrison R, MacIntyre R, Travaglia J, Balasooriya C. Burnout in medical students: a systematic review of experiences in Chinese medical schools. BMC medical education. 2017;17(1):217.
22. Imo UO. Burnout and psychiatric morbidity among doctors in the UK: a systematic literature review of prevalence and associated factors. BJPsych bulletin. 2017;41(4):197-204.
23. Lui JNM, Andres EB, Johnston JM. Presenteeism exposures and outcomes amongst hospital doctors and nurses: a systematic review. BMC health services research. 2018;18(1):985.
24. Amalberti R, Nicklin W, Braithwaite J. Preparing national health systems to cope with the impending tsunami of ageing and its associated complexities: towards more sustainable health care. International Journal for Quality in Health Care. 2016;28(3):412-4.
25. Beard JR, Bloom DE. Towards a comprehensive public health response to population ageing. Lancet (London, England). 2015;385(9968):658-61.
26. Gilpin-Jackson Y. Participant experiences of transformational change in large-scale organization development interventions (LODIs). Leadership & Organization Development Journal. 2017;38(3):419-32.
27. Dougall D, Lewis M, Ross S. Transformational change in health and care: reports from the field: King's Fund; 2018.
28. Austin J, Bentkover J, Chait L. Leading strategic change in an era of healthcare transformation: Springer; 2016.
29. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Health Information & Libraries Journal. 2009;26(2):91-108.
30. Varker T, Forbes D, Dell L, Weston A, Merlin T, Hodson S, et al. Rapid evidence assessment: increasing the transparency of an emerging methodology. Journal of evaluation in clinical practice. 2015;21(6):1199-204.
31. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. Annals of internal medicine. 2009;151(4):264-9.
32. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC methods programme Version. Lancaster, UK: University of Lancaster; 2006.
33. Allport GW. Attitudes. A Handbook of Social Psychology. . Worcester, MA: Clark University Press; 1935.
34. Gregory RL. Perceptions as hypotheses. Philosophical Transactions of the Royal Society of London B, Biological Sciences. 1980;290(1038):181-97.
35. Weber EJ, Mason S, Carter A, Hew RL. Emptying the corridors of shame: organizational lessons from England's 4-hour emergency throughput target. Annals of emergency medicine. 2011;57(2):79-88.e1.
36. Morrow J, McLachlan H, Forster D, Davey MA, Newton M. Redesigning postnatal care: exploring the views and experiences of midwives. Midwifery. 2013;29(2):159-66.
37. Stahl K, Schirmer C, Kaiser L. Adaption and Validation of the Picker Employee Questionnaire With Hospital Midwives. JOGNN - Journal of Obstetric, Gynecologic, & Neonatal Nursing. 2017;46(3):e105-e17.

38. NHS England. National NHS Staff Survey 2019 [Available from: https://www.nhsstaffsurveys.com/Caches/Files/ST19_Core%20questionnaire_FINAL_20190705.pdf.
39. Picker Europe. Staff experience 2019 [Available from: https://www.picker.org/working-with-us/measuring-experiences/staff-experience/.
40. Huby G, Harris FM, Powell AE, Kielman T, Sheikh A, Williams S, et al. Beyond professional boundaries: relationships and resources in health services' modernisation in England and Wales. Sociology of Health & Illness. 2014;36(3):400-15.
41. Obling AR. Ascribing emotion to reasonable use in accelerated cancer services. Journal of Health Organization & Management. 2013;27(4):432-48.
42. Amann J, Brach M, Rubinelli S. How healthcare professionals experience patient participation in designing healthcare services and products. A qualitative study in the field of spinal cord injury in Switzerland. Patient Education & Counseling. 2018;101(8):1452-9.
43. Abrahamsen C, Norgaard B, Draborg E, Nielsen D. Reflections on two years after establishing an orthogeriatric unit: a focus group study of healthcare professionals' expectations and experiences. BMC Health Services Research. 2017;17(1):602.
44. Cotta MO, Robertson MS, Marshall C, Thursky KA, Liew D, Buising KL. Implementing antimicrobial stewardship in the Australian private hospital system: a qualitative study. Australian Health Review. 2015;39(3):315-22.
45. Creswick N, Hains IM, Westbrook JI. Innovation in intensive care nursing work practices with PACS. Studies in Health Technology & Informatics. 2011;169:402-6.
46. Kilpatrick K, Lavoie-Tremblay M, Ritchie JA, Lamothe L, Doran D. Boundary work and the introduction of acute care nurse practitioners in healthcare teams. Journal of Advanced Nursing. 2012;68(7):1504-15.
47. Li J, Westbrook J, Callen J, Georgiou A. The role of ICT in supporting disruptive innovation: a multi-site qualitative study of nurse practitioners in emergency departments. BMC Medical Informatics & Decision Making. 2012;12:27.
48. Lovestam E, Bostrom AM, Orrevall Y. Nutrition Care Process Implementation: Experiences in Various Dietetics Environments in Sweden. Journal of the Academy of Nutrition & Dietetics. 2017;117(11):1738-48.
49. McConnell T, O'Halloran P, Donnelly M, Porter S. Factors affecting the successful implementation and sustainability of the Liverpool Care Pathway for dying patients: a realist evaluation. BMJ supportive & palliative care. 2015;5(1):70-7.
50. Klein EY, Makowsky M, Orlando M, Hatna E, Braykov NP, Laxminarayan R. Influence of provider and urgent care density across different socioeconomic strata on outpatient antibiotic prescribing in the USA. Journal of Antimicrobial Chemotherapy. 2015;70(5):1580-7.
51. Baathe F, Rosta J, Bringedal B, Ro KI. How do doctors experience the interactions among professional fulfilment, organisational factors and quality of patient care? A qualitative study in a Norwegian hospital. BMJ open. 2019;9(5):e026971.
52. Chapman NH, Lazar SP, Fry M, Lassere MN, Chong BH. Clinicians adopting evidence based guidelines: a case study with thromboprophylaxis. BMC Health Services Research. 2011;11:240.
53. Chouliara N, Fisher RJ, Kerr M, Walker MF. Implementing evidence-based stroke Early Supported Discharge services: a qualitative study of challenges, facilitators and impact. Clinical Rehabilitation. 2014;28(4):370-7.

54. Bove DG, Lavesen M, Jellington MO, Marsaa KB, Herling SF. First year experiences with a palliative out-patients structure for patients with COPD: a qualitative study of health professionals' expectations and experiences. BMC Palliative Care. 2018;17(1):113.
55. Chua WL, Legido-Quigley H, Jones D, Hassan NB, Tee A, Liaw SY. A call for better doctor-nurse collaboration: A qualitative study of the experiences of junior doctors and nurses in escalating care for deteriorating ward patients. Australian critical care : official journal of the Confederation of Australian Critical Care Nurses. 2019.
56. Bellagamba G, Michel L, Alcaraz-Mor R, Giovannetti L, Merigot L, Lagouanelle MC, et al. The Relocation of a Health Care Department's Impact on Staff: A Cross-Sectional Survey. Journal of Occupational & Environmental Medicine. 2016;58(4):364-9.
57. Lowe G, Plummer V, Boyd L. Nurse practitioner integration: Qualitative experiences of the change management process. Journal of Nursing Management. 2018;26(8):992-1001.
58. Dainty KN, Scales DC, Sinuff T, Zwarenstein M. Competition in collaborative clothing: a qualitative case study of influences on collaborative quality improvement in the ICU. BMJ Quality & Safety. 2013;22(4):317-23.
59. Dellve L, Stromgren M, Williamsson A, Holden RJ, Eriksson A. Health care clinicians' engagement in organizational redesign of care processes: The importance of work and organizational conditions. Applied Ergonomics. 2018;68:249-57.
60. Bloom MV, Huntington MK. Faculty, resident, and clinic staff's evaluation of the effects of EHR implementation. Family Medicine. 2010;42(8):562-6.
61. Burney M, Underwood J, McEvoy S, Nelson G, Dzierba A, Kauari V, et al. Early detection and treatment of severe sepsis in the emergency department: identifying barriers to implementation of a protocol-based approach. Journal of Emergency Nursing. 2012;38(6):512-7.
62. Elliott D, Allen E, McKinley S, Perry L, Duffield C, Fry M, et al. User acceptance of observation and response charts with a track and trigger system: a multisite staff survey. Journal of Clinical Nursing. 2016;25(15-16):2211-22.
63. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat AH, Dellinger EP, et al. Changes in safety attitude and relationship to decreased postoperative morbidity and mortality following implementation of a checklist-based surgical safety intervention. BMJ Quality & Safety. 2011;20(1):102-7.
64. Kirkendall ES, Goldenhar LM, Simon JL, Wheeler DS, Andrew Spooner S. Transitioning from a computerized provider order entry and paper documentation system to an electronic health record: expectations and experiences of hospital staff. International Journal of Medical Informatics. 2013;82(11):1037-45.
65. Leong K, Hanskamp-Sebregts M, van der Wal RA, Wolff AP. Effects of perioperative briefing and debriefing on patient safety: a prospective intervention study. BMJ open. 2017;7(12):e018367.
66. Press Ganey. Achieving excellence: The convergence of safety, quality, experience and caregiver engagement. . Indiana: Press Ganey; 2017.
67. Solhaug M, Bjork IT, Sandtro HP. Staff perception one year after implementation of the the newborn individualized developmental care and assessment program (NIDCAP). Journal of Pediatric Nursing. 2010;25(2):89-97.
68. Rapson A, Kersun L. Oncology house physician model: a response to changes in pediatric resident coverage. Journal of Pediatric Hematology/Oncology. 2014;36(7):524-7.
69. Murray O, Christen K, Marsh A, Bayer J. Fracture clinic redesign: improving standards in patient care and interprofessional education. Swiss Medical Weekly. 2012;142:w13630.

70. Meredith LS, Schmidt Hackbarth N, Darling J, Rodriguez HP, Stockdale SE, Cordasco KM, et al. Emotional exhaustion in primary care during early implementation of the VA's medical home transformation: Patient-aligned Care Team (PACT). Medical Care. 2015;53(3):253-60.
71. McGeoch G, McGeoch P, Shand B. Is HealthPathways effective? An online survey of hospital clinicians, general practitioners and practice nurses. New Zealand Medical Journal. 2015;128(1408):36-46.
72. Melnikov S, Shor R, Kigli-Shemesh R, Gun Usishkin M, Kagan I. Closing an open psychiatric ward: organizational change and its effect on staff uncertainty, self-efficacy, and professional functioning. Perspectives in Psychiatric Care. 2013;49(2):103-9.
73. van Doormaal JE, Mol PG, Zaal RJ, van den Bemt PM, Kosterink JG, Vermeulen KM, et al. Computerized physician order entry (CPOE) system: expectations and experiences of users. Journal of Evaluation in Clinical Practice. 2010;16(4):738-43.
74. Dix G, Phillips J, Braide M. Engaging staff with intentional rounding. Nursing Times. 2012;108(3):14-6.
75. Geelhoed G, Keenan, J., Miller, S., Munyard, G. Child and Adolescent Health Service (CAHS) Review of the morale andengagement of clinical staff atPrincess Margaret Hospital (PMH): Final Report. Australia: Government of Western Australia Department of Health; 2017.
76. Lake ET. Development of the practice environment scale of the Nursing Work Index. Research in nursing & health. 2002;25(3):176-88.
77. Kennedy MM. Generalizing from single case studies. Evaluation quarterly. 1979;3(4):661-78.
78. Masso M, Samsa P, Fildes D, Duncan C. Evaluation of the better health care connections: models for short term, more intensive health care for aged care recipients Program. final report, Centre for Health Service Development, Australian Health Services Research Institute, University of Wollongong[Google Scholar]. 2015.
79. Ludwick D, Manca D, Doucette J. Primary care physicians' experiences with electronic medical records: implementation experience in community, urban, hospital, and academic family medicine. Canadian Family Physician. 2010;56(1):40-7.
80. Liberati EG, Ruggiero F, Galuppo L, Gorli M, Gonzalez-Lorenzo M, Maraldi M, et al. What hinders the uptake of computerized decision support systems in hospitals? A qualitative study and framework for implementation. Implementation Science. 2017;12(1):113.
81. Travaglia J, Debono D, Milne J, Erez-rein N, Plumb J, Wiley J, et al. Report of the mid program evaluation of 'take the lead'. Sydney: University of New South Wales; 2011.
82. Iedema RP, D. Three ACI-sponsored initiatives: Lessons for system-wide change. Australia: Agency for Clinical Innovation; 2017.
83. March A. Facilitating implementation of evidence-based guidelines in hospital settings: learning from trauma centers: Citeseer; 2006.
84. Nordmark S, Zingmark K, Lindberg I. Process evaluation of discharge planning implementation in healthcare using normalization process theory. BMC Medical Informatics & Decision Making. 2016;16:48.
85. Newman L, Bidargaddi N, Schrader G. Service providers' experiences of using a telehealth network 12 months after digitisation of a large Australian rural mental health service. International Journal of Medical Informatics. 2016;94:8-20.
86. CSIRO. HealthLinks Chronic Care Evaluation; Summary of implementation and outcomes 2016-17. Australia: Victorian State Government Health and Human Services; 2018.

87. Baik D, Zierler B. Clinical nurses' experiences and perceptions after the implementation of an interprofessional team intervention: A qualitative study. Journal of Clinical Nursing. 2019;28(3-4):430-43.
88. Chua WL, Legido-Quigley H, Jones D, Hassan NB, Tee A, Liaw SY. A call for better doctor-nurse collaboration: A qualitative study of the experiences of junior doctors and nurses in escalating care for deteriorating ward patients. 2019;13:13.
89. Levenson R, Dewar S, Shepherd S, King's Fund. Understanding doctors: harnessing professionalism. London: King's Fund : Royal College of Physicians; 2008.
90. Kragh A, Elmstahl S, Atroshi I. Older adults' medication use 6 months before and after hip fracture: a population-based cohort study. Journal of the American Geriatrics Society. 2011;59(5):863-8.
91. Bakker AB, Leiter MP. Work engagement: A handbook of essential theory and research: Psychology press; 2010.
92. Bakker AB, Schaufeli WB, Leiter MP, Taris TW. Work engagement: An emerging concept in occupational health psychology. Work & stress. 2008;22(3):187-200.
93. De Beer LT, Pienaar J, Rothmann Jr S. Job burnout, work engagement and self-reported treatment for health conditions in South Africa. Stress and Health. 2016;32(1):36-46.
94. Palmer A. Customer experience management: a critical review of an emerging idea. Journal of Services marketing. 2010;24(3):196-208.
95. Stake RE. Qualitative research: Studying how things work. New York: Guilford Press; 2010.
96. Harrison R, Walton M, Kelly P, Manias E, Jorm C, Smith-Merry J, et al. Hospitalization from the patient perspective: a data linkage study of adults in Australia. International Journal for Quality in Health Care. 2018;30(5):358-65.

9 Appendices

Appendix 1 Electronic search strategy

Database(s): Ovid MEDLINE(R) ALL 2010 to June 26, 2019

Search strategy:

#	Searches	Results
1	exp hospitals/ or exp hospital departments/ or Emergency Service, Hospital/	411649
2	(acute care hospital* or acute hospital*).mp. or Hospital?.ti,ab. or Emergency Department*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1097356
3	Medical Staff, Hospital/ or Nursing staff, hospital/ or Dental Staff, Hospital.mp. or Hospital staff.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	68130
4	1 or 2	1284646
5	exp health personnel/ or exp Patient Care Team/	539427
6	(Clinical staff or Clinicians or Health professionals or Allied health or Medical staff or Physicians or Midwife* or Midwive* or Nurses or Nursing staff or Health care professional*).mp. or Nursing.hw. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1148864
7	5 or 6	1357635
8	Diffusion of innovation/ or Health Plan Implementation/ or Hospital Restructuring/ or Organizational Innovation/ or Personnel Downsizing/	48723
9	(change management or downsize* or organi?ational change* or organi?ational reform* or organi?ational restructure* or practice change or structural change*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	46931
10	8 or 9	94060
11	Attitude of health personnel/ or Experience*.mp. or Perspective*.mp. or Perception*.mp. or Reaction*.mp. or Perceived.mp. or Focus group*.mp. or Change fatigue.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword	3373064

	heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	
12	3 and 10 and 11	1013
13	4 and 7 and 10 and 11	1895
14	12 or 13	2286
15	limit 14 to (abstracts and english language)	1999
16	limit 15 to yr="2010 -Current"	740
	To include developed countries of interest	
17	(developed countries or european union).af.	78235
18	europe/ or andorra/ or austria/ or belgium/ or exp france/ or exp germany/ or exp united kingdom/ or greece/ or ireland/ or exp italy/ or liechtenstein/ or luxembourg/ or monaco/ or netherlands/ or portugal/ or exp "scandinavian and nordic countries"/ or spain/ or switzerland/ or exp australia/ or new zealand/	1302040
19	exp canada/	150370
20	(united kingdom or england or scotland or wales or denmark or finland or iceland or norway or sweden).af.	7752198
21	(canada or oecd).af.	1014168
22	(europe or andorra or austria or belgium or france or germany or greece or ireland or italy or liechtenstein or luxembourg or monaco or netherlands or portugal or spain or switzerland or australia or new zealand).af.	10027348
23	or/17-22	16583900
24	16 and 23	517
25	remove duplicates from 34	663

Appendix 2 Grey literature search strategy

The websites of the following organisations were searched to identify relevant work, publications and/or reports into clinician experience of care delivery. The search was restricted to health systems such as England, Canada, New Zealand and Northern Europe; generally not the United States. Searches were focused to the concepts of 'changing' and 'new'.

Key search terms were: chang*, transform*, clinician engagement, implement*, introduce*, clinician experience, ways of working, disrupt*, models of care.

Key sites for each country included:

- Quality and Safety Commissions
- Departments/Ministries of Health
- Professional bodies, e.g. medical colleges
- Other health organisations (government or NGO) that support healthcare quality and safety initiatives or commission reports.

1. Australian Commission on Safety and Quality in Health Care (Australia)
2. Department of Health (including state DoH/MoH websites) (Australia)
   - NSW Health Agency for Clinical Innovation (Australia)
   - NSW Health Clinical Excellence Commission (Australia)
   - Safer Care Victoria (Australia)
   - Clinical Excellence Queensland (Australia)
3. Australian College of Nursing (Australia)
4. Royal Australasian College of Physicians (Australia and New Zealand)
5. Health Quality & Safety Commission (New Zealand)
6. Ministry of Health (New Zealand)
7. Ko Awatea Health System Innovation and Improvement (New Zealand)
8. Health Canada (including provincial websites) (Canada)
9. Royal College of Physicians and Surgeons (Canada)
10. Canadian Foundation for Healthcare Improvement (Canada)
11. Care Quality Commission (UK)
12. National Health Service (including NHS England, NHS Scotland and NHS Wales) (UK)
    - NHS Improvement (UK)
13. Royal Colleges of Physicians, Surgeons, Nursing (UK)
14. The Health Foundation (UK)
15. International Society for Quality in Healthcare

16. World Health Organisation (particularly Regional Office for Europe)

17. European Society for Quality in Healthcare

18. Institute for Healthcare Improvement (US)

    - (particularly the IHI Health Improvement Alliance Europe)
    - Platform for Continuous Improvement of Quality of Care and Patient Safety (PAQS) (Belgium)
    - Danish Society for Patient Safety (Denmark)
    - The Kings Fund (UK)
    - STZ Hospitals (The Netherlands)
    - Qukturum, Jonkoping (Sweden).

Additional European websites:

19. Ministry of Health (Denmark)

20. Healthcare Denmark (Denmark)

21. The National Board of Health and Welfare (Sweden)

22. Ministry of Health and Social Affairs (Sweden)

23. Ministry of Health and Care Services (Norway).

Appendix 3: Summary of included studies from electronic database search

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Abad-Corpa E et al.	2013	Implement Evidence based Clinical Practice (EBCP) (participatory action research)- PAR	To gain a better understanding of the experience of change	Tertiary level general university hospital Spain	• Qualitative, multi • Six nurses • Five group meetings • Individual reflections in participants' dairies • Participant observation	• PAR was adopted to implement EBCP • Nursing staff were invited through a project presentation; initially this started with 40 nurses but reduced to 6 nurses because only they were able to participate in all the sessions planned for this project • An initial needs assessment was carried out about the current clinical practice (CP) in the unit which showed that enormous variability in CP which had repercussions for the quality of care and the healthcare results of the patients • The variability was related to training deficit and limited institutional support and resources • Participants perceived that using evidence would standardise practice to work better in teams, improving both confidence and professional recognition • The changes proposed in terms of clinical practice guidelines were more pragmatic for the PAR group who acted as a 'user' of evidence • The PAR group began to self-organise and began to revise the evidence of important clinical topics • The nurses/ participants were leading implementing the changes- this is what aided in bringing the change in CP

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Abrahamsen et al.	2017	Introduction of a new (Orthogeriatric) unit	To gain understanding of clinicians' experience of delivering care with an interprofessional group	Hospital Denmark	• Qualitative • Four focus groups interviews with 19 healthcare workers	• The introduction of the new unit took place and the experience of the clinicians (including geriatricians, orthopedic surgeon, nurses, nurse assistant, occupational therapist and physiotherapist) was explored post-two years • Three main themes: holistic-patient centred care, professional growth and interprofessional collaboration • Allowed to deal with more complex issues • This arrangement also posed challenges and more stress for nursing staff and nursing assistants because of work overload. They also had feeling of inadequacy

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Alami H et al.	2017	Eastern Quebec Telepathology Network (EQTN)	The aim was to evaluate EQTN in order to identify and analyse the factors and issues associated with its implementation and deployment, as well as those related to its sustainability and expansion	Hospitals Canada	• Qualitative, multi • Interviews, focus groups, and discussions with 9 clinicians (pathologists and surgeons) and other stakeholders • (including decision-makers, clinical and administrative project managers, and technologists)	• In this case, telepathology helped curtail pathologist travel to several locations, a phenomenon which has resulted in clinical time gains • Clinicians thought that telepathology could also be relevant for other clinical activities and other specialties (e.g. endoscopy, gynecology and orthopedics) • The use of technology has influenced an evolution of scientific evidence and changes in clinical protocols • The clinical change implemented has changed the retention and recruitment of doctors in rural sites for example: Telepathology was found to be of little help when it comes to promoting the recruitment and retention of pathologists in remote areas. On the other hand, telepathology has enabled recruiting and retaining surgeons in certain locations • New roles have gained importance in the provision of care. For example: Technologists have seen their work evolve and have to some extent become “pathologists’ assistants.” However, this status is not yet recognised in Quebec

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Amann et al.	2018	adopted a pragmatic epistemological approach	This study explored healthcare professionals' accounts of patient participation, focusing particularly on aspects related to patients' contributions to the planning and design of healthcare services and products	Hospitals (four specialised centres for spinal cord injury) Switzerland	• Qualitative • Semi-structured interviews with healthcare professionals	• Participants referred to three types of patient contributions that would usually emerge from informal exchange: (1) bringing in information unknown to staff; (2) reporting problems; and (3) providing concrete suggestions for improvement • Patient participation was favourably viewed by the clinicians • Participants reported that patients provide feedback on the healthcare organisation by identifying problems and making formal or informal complaints
Auta et al.	2015	Extended role of pharmacist in prescribing medications	This study investigated the facilitators of change in hospital pharmacy practice in England in order to identify lessons that might assist in the potential changes needed in other countries for extended clinical roles	Hospital pharmacy practice in England	• Qualitative • Semi-structured interviews were conducted with 28 participants, comprising 22 pharmacists and 6 pharmacy technicians	• New role of the pharmacist is introduced which has improved efficiency of health care provision. • The new role also needs a change in the educational systems for example in this case, participants reported about the changes in education and training of pharmacists. These changes including the introduction of the postgraduate clinical pharmacy programmes to address many of the shortcomings of pharmacists' clinical knowledge and skills as a result of the expansion of pharmacy services into clinical areas • In the beginning the changing roles faced challenges but many also supported this new role • Strategies were identified to facilitate pharmacists' new roles - these included freeing-up pharmacists' time for clinical roles

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Baathe F, Rosta J, Bringedal B et al.	2019	Clinicians' perceptions about professional fulfilment, organisational factors and quality of patient care.	The aim of this study was to explore how doctors experience the interactions among professional fulfilment, organisational factors and quality of patient care.	Surgical department of a mid-sized hospital France	• Qualitative • Seven exploratory, semi-structured interviews with doctors (representing approximately 30% of the population) • A feedback session was held with rest of the doctors to confirm the findings of this study	• Clinicians describe 'stretching themselves' in order to provide quality care to the patients, that is, handling the tensions between quantity and quality and to overcome organisational shortcomings • Experiencing a workplace emphasis on production numbers and budget concerns led to feelings of estrangement among the doctors • Clinicians reported a shift from serving as trustworthy, autonomous professionals to becoming production workers, where professional identity was threatened. They felt less aligned with workplace values, in addition to experiencing limited management recognition for quality of patient care • The clinicians value patient care and thus individually develop initiatives to facilitate their workflow
Baik and Zierler	2019	purposeful interprofessional (IP) team intervention in practice	To aim was to explore clinical nurses' experiences and perceptions following a purposeful interprofessional (IP) team intervention in practice.	Academic medical hospital. US	• Qualitative study • Exploration of using focus group interviews of registered nurses (n=10) who care for patients with advanced heart failure	• During the intervention there was improved communication (in terms of clarity and accuracy) between staff members which helped better understand roles. This experience then impacted how care was provided. Although there were reports of no improvement when dealing with attending physicians • More openness in the work environment • IP intervention improved quality of patient care • Improved job satisfaction because of improved teamworking and communication

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
Bayes et al.	2018	Introduction of the best available evidence into health care practice Overall model was Glaserian Grounded Theory methodology	The aims of this study were to explore Australian change-leader midwives' experiences of implementing evidence-based innovations, the factors that contribute to evidence based clinical practice or process change implementation success or failure in midwifery practice settings	midwifery practice contexts Australia	• Qualitative • Semi-structured interviews • n=16	• The midwives change in practice initiatives were explored. • Midwives reported that initiating change, whether requested to by the service they work in or on their own, face myriad challenges from inception to the end of the process • Bringing a change in practice is often faced with mistrust, opposition and resistance • There is a lack of resources and broader organisational support when introducing the change
Bellagamba et al.	2016	five departments (304 workers) relocation (medical, paramedical, administrative and technical staff) between two public health sites	This aim of this study is to compare quality of work-life factors between a relocated work group and a control group	Five departments relocated between two sites of a public university hospital France	• Surveys and qualitative interviews, multi-method • Pre and post-test analysis with a comparison control group • The interviews (n=22) focused on the organisational of the service, the working	• The survey explored the workers' psychosocial job characteristics, their perceived health, and psycho-organisational constraints • Survey: o 51 ad-hoc questions exploring socio-professional characteristics and perceptions of working conditions o 26 items of the Karasek Job Content Questionnaire (JCQ), which describes the ''job strain'' and ''isostrain'' associated with psychological demand, decision latitude, and social support (SS) o 12 questions measuring the perceived mental health (MCS ''Mental Component Summary'') and perceived physical health (PCS ''Physical Component Summary'')

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
					environment, and career plans	o 22 issues validated in French from Nursing Work Index-Extended Organization (NWI-EO). These questions explored the psycho-organisational constraints that describe the health care givers work environment • One third staff volunteered for the transfer • Most staff were satisfaction with their new location and had sufficient autonomy • Challenges were also present in terms of increased workload and stress which was make them consider leaving the job altogether. They also experienced deteriorated co-worker relationships
Bennetts et al.	2012	Current pain management practice in Australian Emergency Department (ED)	To explore current pain management practice in Australian EDs and identify enablers and barriers for best-practice pain management.	Hospital (Emergency department) Australia	• Qualitative, multi-method • Five focus groups and two in-depth interviews were held with ED clinical staff (n=47) from six hospitals in three states	• Emergency department staff identified a gap between evidence-based pain management recommendations and everyday practice • Perceived barriers to improving pain management (care provision): a lack of time and resources, a greater number of urgent and serious presentations that place pain management as a lower priority, organisational protocols and legislative issues. All groups noted difficulty in applying pain management guidelines in the context of competing priorities in the challenging ED environment • Enablers: A culture of learning clinical practice should be driven from respected senior staff and peers • Participants expressed the view that evidence-based practice improvement should be championed by senior clinical staff, and that evidence to demonstrate the

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
						benefits of change must be presented to support the need for change
Bloom and Huntington	2010	Electronic Health records (EHR) Implementation on clinical practice	The objective was to explore how faculty, residents, and both clinical and nonclinical staff view the effects of EHR implementation on a broad range of issues such as amount of time spent documenting and occurrence of documentation, effect on patient care, interference with other activities, effect on communication and relationships, coding/billing process, and overall efficiency	Primary care/family medicine US	• Quantitative- Survey at 8 months and 12 months post HER implementation	• Perception of faculty, residents, and clinic staff did not observe a benefit of the EHR system to patient care • Initially physicians were spending approximately 16 minutes for documentation and this reduced to 13 minutes. Physicians and residents are very dissatisfied with the amount of time required for documentation using the EHR system
Bogh et al.	2018	Impact of hospital accreditation (DDKM) on clinician experience	The aim of this study was to explore how staff understand hospital accreditation and its relation to quality improvement	Newly accredited hospital Denmark	• Qualitative • Semi-structured interviews with staff members: doctors, nurses, quality coordinators	• Initially the DDKM was unclear and with time it began to make more sense • During the DDKM, clinicians were expected to spend more time on administrative tasks rather than patient care • During the DDKM and online library was established-this led to improved patient care levels despite staff

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
						turnovers. They were also using this library to seek information about care
Bove et al.	2018	palliative outpatients' structure for patients with COPD	The aim of this study was to explore the health professionals' expectations and experiences of a new palliative outpatients structure for patients with advanced COPD	Hospital (new outpatient organisational - CAPTAIN) Denmark	• Qualitative • Focus groups and individual interviews were conducted with pulmonary nurses, pulmonary doctors and municipality nurses	• The overall methodology was interpretive description (ID) an inductive approach that focuses on meaning and how generated knowledge apply to clinical practice • Qualitative data from the pre-CAPTAIN phase was mostly concerns of the clinicians about the new program, the competency to use it and how it was to be delivered to the patients. There were many aspirations for how this new program will encourage clinical practice • Post-CAPTAIN phase- the clinicians thought that this was a positive change for patients, but this triggered new concerns. Although the new program provided continuity of care and better understanding of the patient's everyday life, their perceived values and preferences. Meanwhile this increased insight in the patients' life and the awareness of suffering added an element of stress on the clinicians. In this phase new roles emerged for the clinicians; for example: new role moved from being highly specialised toward a general pulmonologist more similar to a GP. Also this program encouraged effective interprofessional collaborative work
Burau and Bro	2015	two different discharge models: add-on' model and 'embedded model	This study presents the case study of the introduction and routinisation of explicit discharge arrangements for	Hospital Denmark	• Qualitative • 12 focus groups with doctors, nurses and secretaries	• Clinicians acknowledged the specific advantages of the new discharge arrangements for the department at large (reducing the number of control appointments and, thereby, freeing resources for other patients)

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
			patients with prostate cancer in hospitals			• Clinicians distanced themselves from the streamlined process, however they kept control of the decision about who to discharge through their individual professional judgment • Engagement of the clinicians in this program greatly varied
Burau and Overgaard	2015	Organisational change: introduction of case load midwifery	This study focuses on midwives' role in introducing and developing caseload midwifery.	Three hospitals Denmark	• Qualitative • Individual and group interviews • Participants included: caseload midwives, ward midwives, obstetricians and health visitors, management by chief midwives and their deputies	• The new caseload organisation facilitated their role in providing the care. The midwives pursued both professional and organisational interests in the new work environment. • The new model had midwives' interest because it allowed a good work-life balance enabling them to combine work with family responsibilities • This model also provided an opportunity for professional development • Increased professional satisfaction because it allowed midwives to provide holistic and continued care to their patients • On the other hand, some midwives felt that the quality of work and their personal work satisfaction were challenged by the frequent and long duty turns
Burney et al.	2012	Needs assessment of treatment of sepsis in the emergency department	This study explored specific barriers to maximise benefits of a planned sepsis treatment initiative. A baseline assessment was conducted for knowledge, attitudes,	Hospital US	• Quantitative Survey • The survey explored: (1) baseline knowledge and self-reported confidence in identification of systemic	• N=101 clinicians including staff and nurses completed a questionnaire which was designed to assess (1) baseline knowledge and self-reported confidence in identification of systemic inflammatory response syndrome and sepsis; (2) current practices in treatment; (3) difficulties encountered in managing sepsis cases; (4) perceived barriers to implementation of a clinical pathway based on early quantitative resuscitation goals; and (5) to elicit

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			and behaviours regarding detection and treatment of severe sepsis from clinicians		inflammatory response syndrome and sepsis (2) current practices in treatment (3) difficulties encountered in managing sepsis cases (4) perceived barriers to implementation of a clinical pathway based on early quantitative resuscitation goals (5) to elicit suggestions for improvement of sepsis treatment within the department	suggestions for improvement of sepsis treatment within the department. • Different barriers identified: delay in diagnosis, interprofessional work, organisational support in terms of access to equipment and space • Discrepancy in familiarity with the criteria of sepsis
Chapman et al.	2011	Needs assessment to explore reluctance to adopt guidelines	This study was conducted to explore clinicians' attitudes and the clinical environment in which they work to understand their reluctance to adopt	Two metropolitan hospitals Australia	• Qualitative • Semi structured, open ended questions	• Interviews revealed that barriers to evidence-based practice include i) the fragmented system of care delivery where multiple members of teams and multiple teams are responsible for each patient's care; ii) the culture of practice where team practice is tailored to that of the team head • Participants described how senior clinicians practice

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			VTE prophylaxis guidelines			• An 'art of medicine' which is the combination of medical knowledge, intuition, experience and judgement. That is Clinicians develop preferences or an 'art' towards patient management and treatment medicine which is considered to take precedence over guidelines
Chouliara et al.	2014	Implementation of an evidence-based stroke early supported discharge services	To explore the perspectives of healthcare professionals with stroke Early Supported Discharge service in relation to: (1) the factors that facilitate or impede the implementation of the service, and (2) the impact of the service	Hospital (Discharge services) UK	• Qualitative • Semi-structured interviews	• Facilitators of this program: (1) the adaptability of the intervention to the healthcare context, (2) the role of rehabilitation assistants and (3) cross-service working arrangements • Perceived challenges included: (1) lack of clarity regarding the referral decision making process, (2) delays in securing social care input and (3) lack of appropriate follow on services in the region • perceived impact of the services was: (1) reduction in hospital stay, (2) aiding the seamless transfer of care from hospital to the community and (3) providing intensive stroke specific therapy
Chua et al.	2019	Escalating care for clinically deteriorating patients in General wards	The objective of this study was to explore the experiences of junior doctors and nurses in escalating care for clinically deteriorating patients in general wards	Emergency Department teams (METs) in Changi General Hospital Singapore	• Qualitative • Twenty-four individual interviews were conducted with 10 junior doctors and 14 registered nurses	• The decision to call a MET or the primary team doctors is a complex judgement • Participants' decisions to call the MET or to escalate to the primary team doctors depends on the severity of a patient's deterioration and perceptions of the primary team doctors' capacity to manage the patient • Both doctors and nurses also reported the fear of criticism from others above them in the medical hierarchy if they were perceived to have activated the MET 'unnecessarily'

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						• Nurses reported the use of ISBAR (Identify, Situation, Background, Assessment and Recommendation) in their communication of deterioration to ward doctors • Nurses face challenges in obtaining medical reviews from junior doctors for patients with deterioration • Nurses were more inclined to call the MET after office hours because on call doctors lacked an understanding of the deteriorating patient's condition
Cooper et al.	2013	Action research approach to enable staff on rehab ward for older patients to engage in change activities	To explore the facilitating factors that enabled staff on a rehabilitation ward for older people engage in change activities	Hospital (Rehabilitation wards) UK	• Qualitative • In-depth interviews with staff and managers	• Findings related to improvements in rehabilitation care arising from implementation of the action plan together with the facilitating factors that it was perceived enabled such changes and improvements to take place • Staff members felt standards of care had improved on the ward with the patient allocation system being seen as a contributory factor - improved relationship, more continuity of care and more patient focused • Increased engagement with rehabilitation was also reflected in the involvement of staff and patients in social activities • Staff identified that this work gave them a voice and that they felt valued and cared for as a result of someone listening to and showing an interest in them and their work • The presence of the researcher was seen as a catalyst that 'got the ball rolling' through helping staff to highlight

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						problems, come up with possible solutions and get them started • Staff felt their knowledge and understanding was improved through formal and informal conversations and discussions that took place, work on change activities and informal prompting and coaching by the researcher when present on the ward • Motivation for staff to improve practice was also increased through the achievements they made along the way. All staff were proud of the part they had played in helping change happen and care standards to improve, together with the recognition their work was receiving
Cotta et al.	2015	Implementing antimicrobial stewardship	To explore organisational factors and barriers contributing to limited uptake of antimicrobial stewardship (AMS) in Australian private hospitals and to determine solutions for AMS implementation	Private hospital system Australia	• Qualitative study • series of focus group discussions with a semi-structured guide	• Consultant specialists practised with significantly more autonomy in private hospitals than in public hospitals because they were practicing as individual contractors. Also, it was difficult to expect a specialist to be accountable to anyone else in this environment • Private hospital lacked ability to influence antimicrobial prescribing • Most private hospitals viewed consultant specialists as their 'customers' and so were apprehensive about enforcing guidelines and hospital policies and procedures • It was reported that many specialists wanted to know what their colleagues were prescribing and whether they were consistent with the practice of others – this could be used, in the form of perceived peer pressure, to promote uniformity in clinical practice

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						• Referral to ID physicians - lack of ID physicians and Consultant specialists were willing to refer patients to ID physicians when appropriate • Barriers and potential solutions were discussed in relation to the implementation of how AMS could be implemented
Creswick et al.	2011	Implementation of PACS picture archive and communication systems	This study examined whether and how ICU nurses view and use images and whether access to PACS promotes innovation in work practices	ICUs at 3 metropolitan teaching hospitals Australia	• Qualitative, multi • Interview and observation of ICU nurses	• PACS to ICU settings promotes changes in nursing work practices by providing nurses with the ability to act more autonomously • Spending less time searching for x-rays, and the turnaround time for the availability of images for viewing had decreased • Nurses reported viewing images at the start of their shifts, especially for intubated patients who routinely receive a chest x-ray early each morning, and later in the day if required
Dainty et al.	2013	Implementation of a large-scale quality improvement project	The aim of this study is to understand ICU staff perspectives on collaborative QI based involvement in a multi-organisational improvement network and its impact on providing care	Community hospitals ICUs Canada	• Qualitative • Key informant interviews were conducted with staff from 12 community hospital ICUs	• Clinicians reported that belonging to a collaborative network provided recognition for the high-quality patient care that they already provided. It also was form of feedback to how well they were performing compared to other ICU participating sites • QI collaborative networks promote behaviour change by improving intrateam communication

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Dellve et al.	2018	Organisational redesign of care processes	This study focuses on how work conditions contribute to different aspects of engagement including clinical engagement behaviour (during organisational redesign of care processes among different groups of healthcare clinicians)	5 hospitals Sweden	• Quantitative- Survey • Surveys were distributed at the start and then one year	• In this context of healthcare clinicians' engagement in organisational improvements: o engagement means attitudes toward engagement in organisational development o work engagement as a cognitive state o clinical engagement behaviour in developing patient safety and quality of care in practice • Clinical engagement behaviour assessment: Two scales were used to assess clinical engagement in patient safety and quality of care • There were associations between positive attitudes toward organisational improvements and stronger clinical engagement in developing quality of care (r=0.37, p<0.00) and patient safety (r=0.34, p<0.00, respectively). Negative attitudes were associated with decreased clinical engagement behaviour
Dix et al.	2012	Intentional rounding for nursing staff	This study discusses the roll out of intentional rounds and its impact on providing care	Hospital UK	• Audit and Quantitative survey • Audit of the number and frequency of call bells at the same time but different days of the week	• Reduced frequency of call bells • Early identification of pressure ulcers • Increased patient satisfaction • In terms of staff perception there was reduced time spent with the patient • Staff could not spend more time with patients who needed more attention • Staff were less satisfied with the new arrangement
Draper	2018	transition from student to newly	To explore the experiences of NQNs also employed as	Health system UK	• Qualitative	• Participants frequently talked about the increased responsibility of their new role. This heightened sense of

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		qualified nurse (NQN)	health care assistants (HCAs) during their pre-registration education programme and how this prior and ongoing HCA experience influenced their transition experiences		• Telephone interviews with participants	responsibility also encouraged them to ask questions if they needed help or to question practice • There were raised expectation of others around them and how they were perceived by patients and relatives as a person in a position of authority • Realisation that being a qualified nurse was more complex and busier than previously imagined • Management of identities previous and new • The change in attitude towards them as a result of this change in uniform came as a surprise • Informal support was provided by family, friends (some of whom were also nurses) and by workplace colleagues, while Formal support structures included preceptorship only
Elliot et al.	2016	New format of charts for recording observations and as a prompt for responding to episodes of clinical deterioration in adult medical–surgical patients	To examine user acceptance with a new format of charts for recording observations	Hospital Australia	• Quantitative and qualitative survey • Surveys had open-ended comments and narrative from short informal feedback groups providing elaboration and context of user experiences	• 28-item survey was developed to examine staff perceptions and experiences with the design and content of the chart for usability in the clinical setting: clarity of text, layout, completeness, ease of documenting and utility in prompting a response for a deteriorating patient • Easy to use but does not fit patient file • The 'modifications to calling criteria' section was most frequently commented on during handover debriefings • Respondents reported that the charts assisted in identifying a patient at risk, aided management of the

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						deteriorating patient and enabled effective clinical handover of the patient's condition
Foster et al.	2016	Service delivery innovation	This study explores the perspectives of clinicians and managers involved in a general practitioner-led integrated diabetes care innovation	GP-led integrated diabetes care in primary health care Australia	• Qualitative, multi • Focus groups and semi-structured interviews at two primary health care sites	• There were three main themes: (1) trusting and embedding new professional relationships; (2) synchronising services and resources; (3) reconciling realities of innovation work • There was a change in the traditional way of thinking about diabetes care and professional roles • There was reluctance among specialists for GPs to provide care because of the negative experiences with GPs delivering less than expected follow up care for patients • It was important to take steps to improve communication with patients' regular GPs (i.e. peer-to-peer communication between the model's clinical fellows and referring GPs was critical) • Added benefits of earlier access for patients and reduced waiting lists • Good communication and information sharing about patient care was critical
Fowler et al.	2018	Patient access to primary care	This study aims to explore general practitioners' (GPs') views and experiences of an Enhanced Primary Care programme (EPCP) which works to	Primary care practice, Sheffield UK	• Qualitative • Semi structured interviews with GPs across 24 practices	• GP views were variable about their acceptance to the EPCP and this was due to their view about the role of GP practice • Some viewed EPCP program as a short-term centrally driven initiative while others saw it as a pragmatic solution to manage additional demand

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			extend patient access to primary care			• GPs were skeptical about the use of additional appointments for non-urgent cases and questioned their relative benefit to recipients of care • Financial imperatives were key drivers for involvement in the program. GPs saw the opportunity to use incentive payments within the EPCP as additional funding for their practice • Most GPs indicated limited awareness of most of the schemes in relation to additional services and professionals, which were intended to provide new ways of working • Some GPs who evidently needed to manage capacity and demand within the finite resources and workforce reflected on the opportunities afforded by additional out of hours (OOH) clinics • GPs also questioned the acceptability of a centrally delivered scheme to patients who are best served by ensuring continuity of care
Haynes et al.	2011	implementation of a checklist-based surgical safety intervention	To assess the relationship between changes in clinician attitude and changes in postoperative outcomes following a checklist-based surgical safety intervention	8 Hospitals US	• Quantitative Survey • Pre- and post-intervention survey with clinical staff working in the operating room	• The survey used is a modified operating-room version Safety Attitudes Questionnaire (SAQ) • Main outcome measures include: Change in mean safety attitude score and correlation between change in safety attitude score and change in postoperative outcomes, plus clinician opinion of checklist efficacy and usability

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						• The degree of improvement in mean SAQ score at each site correlated with a reduction in postoperative complication rate • The checklist was considered easy to use, some thought it took a long time to complete, and others felt that the program prevented errors. Overall, majority would want the checklist used if they were undergoing operations
Høstgaard et al.	2017	Constructive eHealth evaluation method (CeHEM)	The aim of this study is to explore the introduction of electronic health records (EHR)	4 hospitals Denmark.	• Qualitative and Quantitative, multi-method • Observations in wards • Interviews • Document access • Survey of the clinicians' assessment of the clinical benefits of the new EHR after implementation	• The main interest of the clinicians (and of the physicians in particular) was the clinical benefits and high user-friendliness • The new EHR improved patient health and safety and the quality of treatment • Some physicians indicated that they did not use the system at all because they felt it hampered their clinical work
Huby et al.	2014	This article uses theories of social capital to understand ways in which negotiation of professional boundaries among healthcare professionals	This study explored how negotiation of professional boundaries among healthcare professionals relates to health services change	Primary care organisations (PCOs) in UK	• Qualitative • Serial Interviews with key clinicians as they progressed with collaboration, negotiation and contesting developments	• A great deal of explicit expansion and consolidation of professional and organisational territory which depended on collaboration that was to everybody's advantage • Professionals' work to protect and expand their claims to work territory • Remuneration and influence is a catalyst for development and was also necessary to establish professional boundaries that underpinned novel service arrangements.

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		relates to health services change				For example, the new arrangements created a more business-like approach to the establishment, monitoring and running of services. Services previously based on informal collaboration and with no budget came under threat. Existing services had to be redefined by their cost and income • Conflict and contest was less of a threat to change; however, a lack of engagement in boundary work brought change because this engagement produced relationships based on shifting professional allegiances across and along boundaries, and these relationships mediated the social capital needed to accomplish change
Irvin et al.	2013	Oncology Nursing Society (ONS) and ONS Foundation worked together to develop the Institute for Evidence-Based Practice Change (IEBPC) program to facilitate the implementation of evidence-based practice (EBP) change in nursing	This study explored the experience of 19 teams of nurses from various healthcare settings who participated in the IEBPC program	Hospitals US	• Qualitative and observations • Qualitative analysis of verbatim narratives of activities and observations during the process of implementing an EBP project	• EBP implementation enabled participants to learn about their own practice and to experience empowerment through the evidence, and it ignited the spirit of inquiry, team work, and multidisciplinary collaboration • Several teams incorporated recognition and the use of incentives into project implementation. These strategies aimed to get staff attention and encourage participation in project activities and related changes to patient care • Conversely, lack of engagement of key groups inhibited progress. Inadequate communication inhibited progress, and teams noted that good communication was a critical success factor • Areas of discovery expressed in narratives included learning about their practices, learning about each other, igniting the spirit of inquiry, experiencing empowerment

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						through evidence, and learning about the challenge of sustaining improvement
Jeffs et al.	2015	Implementation of Antimicrobial Stewardship at 3 Academic Hospitals	To assess the perceptions and experiences of antimicrobial stewardship program leaders in terms of clinicians' attitudes toward and behaviours related to antimicrobial prescribing	3 academic hospitals Canada	• Qualitative • Semi structured interviews were conducted with 6 antimicrobial stewards (2 physicians and 4 pharmacists)	• Antimicrobial stewardship program engaged to get the right people on board throughout the organisation • Building relationships with clinicians in each ICU was also identified as a key process for the antimicrobial stewards. This occurred both formally (e.g. during rounds and face-to-face meetings) and informally (e.g. having coffee or hallway conversations) • During the implementation it was considered how best to overcome the possible reluctance and resistance of prescribers in the ICU to change their current antimicrobial practices so as to minimise the use of unnecessary broad-spectrum antimicrobials and how best to influence the uptake of rational antimicrobial use • Over time, the antimicrobial stewards were able to demonstrate that antimicrobial use and positive patient outcomes were associated with a reduction in costs through prospective auditing of and feedback about antimicrobial prescribing practices • The stewards were mindful and respectful when working with the ICU clinicians, tailoring the program according to each ICU's culture and context
Johansson et al.	2013	Experience of working on a locked acute psychiatric ward	This study explores the experience of health-care staff working on a locked, acute psychiatric ward	Hospital (Acute psychiatric ward) Sweden	• Qualitative • Interviews with health-care staff (n=10)	• Health-care staff have to manage a changing and demanding work environment including a heavy and intense workload with limited opportunities for relaxation • Positive experiences include: meaningfulness and personal development

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						• The health-care staff described the importance of delivering good quality care • Health-care staff were engaged in ongoing changes to what should constitute the focus of care. For example: The staff said that it was the need for specialised nursing care, not primarily medical needs, that determined whether or not a patient should be admitted to the ward • Nursing was adjusted to patients' needs concerning • Clinicians wanted a stable management, continuity in patient contact and control of patients • Knowing the patients was important for the health-care staff's sense of security; they described how, when a new and unknown patient arrived on the ward, it felt safer to meet them together with a colleague • Clinicians felt a sense of responsibility, which was illustrated as a driving force in completing work tasks and caring for the patients' well-being, but it could also lead to feelings of burden
Jones et al.	2013	Safety netting advice first contact clinicians give parents of acutely sick young children	The aim of this study is to understand what safety netting advice first contact clinicians give parents of acutely sick young children, how, when, and why.	General practice surgery, a District General Hospital emergency department, a paediatric	• Qualitative, multi-method • Interviews and focus groups were held with doctors and nurses	• They described that safety netting advice includes advising parents what to look for, when and where to seek help • No participants described being trained in this area • Safety netting appeared to be rarely documented and was left to individual preference • Participants described that safety netting was influenced by clinicians' experience, confidence, time and

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				emergency department, and an out-of-hours service UK		knowledge; and perceived parental anxiety, experience, and competence • Participants noted several limitations to safety netting including not knowing if it has been understood by parents or been effective; parental difficulty interpreting information and desire for face-to-face reassurance; and potential over-reassurance
Kilpatrick et al.	2012	Boundary work following the introduction of an acute care nurse practitioner role in healthcare teams	This study aims to understand the process by which the boundaries between professions changed, following the introduction of an acute care nurse practitioner (ACNP) role and how this would affect the scope of practice and the team's ability to give patient care	Two university-affiliated teaching hospitals in Canada	• Qualitative • Individual and/or focus group interviews and document analysis	• The need to create space for the ACNP role was particularly salient for the team that was in place prior to the arrival of the ACNPs and this was done by making adjustment to own activities to integrate their role • They talked about creating a psychological space or a mindset where the physicians could accept that ACNPs assumed some of their functions • Participants described specific instances of lost role functions in the context of the professional groups following the introduction of the ACNP role in the team • Participants described how experienced staff nurses lost status in the team and with the physician group because the physicians sought out the ACNPs for information • As an early reaction to loss, the professional groups who had experienced the most losses described a sense of mourning, a feeling of being abandoned and being pushed aside • Trust was believed to be the key to the successful completion of boundary work among team members and was enhanced between the ACNPs and team members as the ACNPs gained experience

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						• Some interpersonal dynamics improved the team dynamics with this new arrangement, while there was an overlap of many roles
Kirkendall et al.	2013	Transition to a full electronic health record (HER)	To examine healthcare worker's perceptions, expectations, and experiences regarding how work processes, patient-related safety, and care were affected when a quaternary care centre transitioned from one computerised provider order entry (CPOE) system to a full electronic health record (EHR)	Hospital US	• Quantitative Survey • Pre- and post-test using the Information Systems Expectations and Experiences (I-SEE) survey • The I-SEE survey was administered prior to and 1-year after transition in systems	• The I-SEE contains 35 questions/items distributed across 7 scales: o Provider–patient communication (3 items) o Inter-provider communication (3 items) o Inter-organisational communication (2 items) o Work life changes (4 items) o Improved care (7 items) o Support and resources (8 items) o Patient care processes (8 items) • The majority of respondents were nurses and personnel working in the acute care setting • Mean scores for each factor indicated that attitudes and expectations were mostly positive and score trends over time were positive or neutral • Nurses generally had less positive attitudes about the transition than non-nursing respondents, although the difference diminished after implementation
Lacasta Tintorer et al.	2018	Telemedicine systems available to facilitate communication between care levels between	The objective of this article is to explore healthcare professionals' views on communities of clinical practice	Primary Care Service (PCS) Spain	• Qualitative, mixed • Focus groups, triangular groups and individual interviews	• For a system of communication between PC and SC to become a tool that is habitually used and very useful, the interviewees considered that it would have to be able to find quick, effective solutions to the queries raised, based

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		primary care (PC) and non-GP specialist care (SC) professionals - Online Communication Tool (ECOPIH platform) between Primary and Hospital Care was created	(CoCPs) and the changes that need to be made after an online communication tool			on up-to-date information that is directly applicable to daily clinical practice • Contact should be virtual – and probably collaborative – via a platform integrated into workstations and led by PC professionals • Organisational changes should be implemented to enable users to have more time in their working day to spend on the tool • It is also important to make certain technological changes, basically aimed at improving the tool's accessibility, by integrating it into clinical workstations
Langhan et al.	2015	Implementation of newly adopted technology in acute care settings	This study explored experiences of acute care providers with the introduction of technology and identified barriers and facilitators in the implementation process	Hospital US	• Qualitative • Individual interviews performed among a purposeful sample of 19 physicians and nurses within 10 emergency departments and intensive care units	• Five major categories emerged: o decision-making factors- adoption of new technologies was often varied and poorly understood by clinical staff; meanwhile Staff champions or early adopters helped to initiate the adoption of technology o the impact on practice- Participants mentioned how specific technologies on the unit are only used by certain providers or in certain patient populations, as compared to other technology that is used by all providers or is applied to all patients, such as electronic medical records or patient monitors o technology's perceived value- Technology was perceived in a positive light because it was beneficial to providers, to patients or to trainees o facilitators to implementation • Barriers included negative experiences, age, infrequent use and access difficulties

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Lelubre et al.	2018	interprofessional medication adherence program (IMAP) for chronic patients	This study assesses the capacity of a physician and a nurse at the infectious diseases service of a public hospital and of community pharmacists to implement the IMAP in their practice	Hospital Switzerland	• Quantitative and qualitative analyses of the implementation process were conducted following the RE-AIM model (reach, effectiveness, adoption, implementation and maintenance)	• In this study the aim was to specifically include naïve HIV patients and the program was presented as a package linked to the new treatment • The main reported reason for refusal was the patient's reluctance to change pharmacy, especially because of an existing trust relationship with the pharmacist • Different barriers have been encountered by healthcare professionals to reach patients. These can be HIV-related difficulties (psychosocial issues with stigmatisation, denial and need for a high confidentiality level) and the limited number of trained pharmacies, reducing the choice for patients. The small population base of HIV patients also explained the small number of included patients • All healthcare professionals agreed that the program was useful for patients. Firstly, they observed improvements in clinical results. Secondly, patients developed a relationship of trust with the pharmacist, who became a reference person for the patient at the pharmacy. Thirdly, the use of electronic pillboxes seemed to reassure patients, allowing them to visualise their medication intake • The total time needed at the hospital to deliver the program was 30 to 40 min per patient • Largest barrier encountered by healthcare professionals was a lack of time, related to lack of resources. For the physician and the nurse, the lack of time was a barrier to

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						the program when a patient had somatic problems that had to be prioritised during the medical visit
Leong et al.	2017	Introduction of a perioperative briefing and debriefing	This study was carried out to improve patient safety in the operating theatre by the introduction of perioperative briefing and debriefing, which focused on an optimal collaboration between surgical team members	Operating theatres of a tertiary care hospital Netherlands.	• Quantitative Survey • A prospective intervention study with one pre-test and two post-test measurements: 1 month before and 4 months and 2.5 years after the implementation of perioperative briefing and debriefing	• The primary outcome was changes in the team climate, measured by the Team Climate Inventory • Secondary outcomes were the experiences of surgical teams with perioperative briefing and debriefing, measured with a structured questionnaire • an independent observer observed the duration of the briefings • the team climate increased statistically significant ($p \leq 0.05$) • They perceived a higher efficiency of the surgical program with more operations starting on time and less unexpectedly long operation time • The perioperative briefing took less than 4 min to conduct
Leslie et al.	2017	Implementation of Health information technology (HIT)	To identify the impact of a full suite of health information technology (HIT) on the relationships that support safety and quality among intensive care unit (ICU) clinicians	Three ICUs in three academic hospitals US	• Ethnographic study and qualitative interviews	• Significant variation in HIT implementation rates and usage was noted. Average HIT use on the two "high-use" ICUs was 49 percent. On the "low-use" ICU, it was 10 percent • Clinicians on the high-use ICUs experienced "silo" effects with potential safety and quality implications. HIT work was associated with spatial, data, and social silos that separated ICU clinicians from one another and their patients. Situational awareness, communication and patient satisfaction were negatively affected by this siloing

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Li et al.	2012	Nurse practitioners plus adjunct information and communication technology for their new clinical role	This study aimed to investigate ways in which Nurse Practitioners (NP) have incorporated the use of Information and Communication Technology (ICT) as a mechanism to support their new clinical role within Emergency Departments	Two teaching hospitals Australia	• Qualitative • Semi-structured and in-depth interviews	• The purpose of the NP role was largely perceived by physicians as the alleviation of their sub-acute workload and expediting the treatment of patients of lower acuity • ICT supported the advanced practice dimension of the NP role in the following ways: availability and completeness of electronic patient information enhanced timeliness and quality of diagnostic and therapeutic decision-making, expediting patient access to appropriate care • improved quality of communication between health professionals within and across sites, with wider diffusion of the Electronic Medical Record holding the potential to further facilitate team-based, holistic care
Liberati et al.	2015	Introduction of patient-centred model	The aim of this study is to understand how the introduction of a patient-centred model (PCM) in Italian hospitals affects the pre-existent configuration of clinical work and interacts with established intra/inter-professional relationships	Hospital Italy	• Qualitative • exploratory interview study and case study	• The introduction of the PCM challenges clinical work and professional relationships • Frontline clinicians believe that the new criteria for patients' placement may disorient patients rather than improve their care process: clinicians suggest that patients and care givers' main psychological need is to identify their care provider (the medical specialist) rather than to be placed in the "most adequate care setting" • The "political narrative" (the views conveyed by formal policies and senior managers) focuses on the power shifts and conflict between nurses and doctors, while the "workplace narrative" (the experiences of frontline clinicians) emphasises the problems linked to the disruption of previous discipline-based inter-professional groups

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Liberati et al.	2017	Advanced Computerized Decision Support Systems (CDSSs) assist clinicians in their decision-making process, generating recommendations based on up-to-date scientific evidence	This study explores the barriers and facilitators to the uptake of an evidence-based CDSS as perceived by diverse health professionals in hospitals at different stages of CDSS adoption	Four Hospitals Italy	• Qualitative • Semi-structured interviews	• Cinicians' perceive that the CDSSs may reduce their professional autonomy or may be used against them in the event of medical-legal controversies • Meanwhile, CDSSs are perceived as a working tool at the service of its users, integrating clinicians' reasoning and fostering organisational learning
Lin et al.	2018	Redesigned intensive care units (ICUs)	The aim of this study was to explore staff members' perceived effectiveness of a transition from a shared to a single room setting	Tertiary teaching hospital Australia	• Qualitative • Group and individual interviews	• The staff members were part of the team which designed the intervention for this redesign of ICUs • The pre-move ACCESS nurse single room rounding model was helpful for staff to gain insight into what support they may get when working in single rooms, and how to provide support to others • There was concern that the incidental learning that occurred as nurses learned from each other within a multi-occupancy ICU environment was now lost in a single room environment
Lövestam et al.	2017	Nutrition Care Process (NCP) and Nutrition Care Process Terminology (NCPT) are currently being implemented by	The aim of this qualitative study was to explore Swedish dietitians' experiences of the NCP implementation process in different	Hospital and primary care (dietetics workplaces) Sweden	• Qualitative • seven focus group discussions	• The diversity of dietetics settings and their different prerequisites should be considered in NCP/NCPT implementation strategies • Different environments pose different challenges which ultimately impact how the NCP is implemented into the clinical care structure

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		nutrition and dietetics practitioners	dietetics environments			
Lowe et al.	2018	Integration of nurse practitioners	The aim of this research was to explore perceptions of organisational change related to the integration of nurse practitioners	Hospitals Australia	• Qualitative • Interviews were undertaken using a purposive sampling strategy of key stakeholders.	• The participants described nurse practitioners as being able to change health care provision by "deliver(ing) the service to the patient" and that "unmet needs are addressed" • Nurse practitioner roles are able to coordinate care and improved communication which is beneficial to patient care • There were references to barriers and participants identified funding and budgetary constraints that are hindered by existing practice models
Ludwick et al.	2010	Electronic medical records	This research aims to explore how remuneration and care setting affect the implementation of electronic medical records (EMRs)	Hospital and primary care US	• Qualitative • individually conducted semi-structured interviews	• Previous EMR experience affected their decisions about product selection. Other methods of data gathering were product presentations and market scans • Physicians made their product selections based on a number of factors o Products were selected because they supported aggregated patient reporting to be used for identifying patients for recalls o Physicians selected systems based on their ability to support interdisciplinary team care o Physicians took note of EMRs that supported patient-based task management (i.e., a feature that uses the

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						messaging infrastructure of the EMR to delegate patient-related tasks to team members) o some of our physicians selected products based on the EMR's ability to support academic research • Transition to the EMR changed the way the physicians worked. Physicians had to change the way they made encounter notes. They had to learn to fit into the documentation approach dictated by the EMR • Initially, physicians were concerned about patient perception of computer note-taking. Physicians reported that some patients complained that physician attention was focused on the computer. Interestingly, physicians purposefully developed ways of including patients in note-taking
Makowsky et al.	2013	Pharmacists' adoption of prescribing- model for the Diffusion of Innovations in healthcare services	The aim of this study was to explore factors which influence pharmacists' adoption of prescribing	Hospitals, Primary care and community Canada	• Qualitative • Semi-structured telephone interviews to discuss their prescribing practices and explore the facilitators and barriers to implementation	• Pharmacists identified a need for prescribing whether it was switching drugs because of a manufacturer's shortage, adapting the dose, or stepping in when physicians were not available • Pharmacists who had adopted prescribing practices had increased their sense of professionalism, the image of the professional healthcare provider and their own job satisfaction and happiness • Pharmacists were most comfortable prescribing for stable patients on chronic medications who were well known to the pharmacist • Pharmacists identified the need for enhanced knowledge, skills, and self-efficacy to provide higher levels of patient care including prescribing

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						• Pharmacists who were in patient focused, practice settings were more likely to adopt advanced prescribing practices • Pharmacists stated that physician relationships impacted their prescribing behaviours and individual pharmacists' decisions to apply for independent prescribing privileges
McConnell et al.	2015	The Liverpool Care Pathway (LCP) for the dying patient	The main aim of this research was to identify the influences that facilitated or hindered successful LCP implementation	Health and Social Care Trust Northern Ireland	• Qualitative • Semi-structured interviews were conducted	• The role of the LCP facilitator was to market the pathway, deliver LCP education and training, and audit how often and well the LCP was being used • Nursing staff viewed palliative care consultants as a valuable resource for ongoing support and advice; those consultants felt they could not provide adequate support in the context of rapid staff turnover and competing demands • Nurses who worked on wards that were using the LCP believed that the facilitators had successfully embedded the pathway into practice and that the pathway remained an effective part of patient care once the facilitator post had ended • Nurses were active in promoting use of the LCP, while on the medical side palliative care consultants were advocates, medical consultants ambivalent, sometimes skeptical and junior doctors' attitudes were very much dependent on the approach of their seniors

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McGeoch et al.	2015	Effectiveness of HealthPathways	The aim of this study is to explore perceptions of healthcare professionals on HealthPathways, a website that provides clinical and referral information for general practice teams, relevant to locally available health services and resources	Hospital and primary care NZ	• Online, Quantitative survey • survey questionnaire included questions on the effectiveness and ease-of-use of the website, computer literacy and use of online clinical guidance systems	• The survey questionnaire included questions on the effectiveness and ease-of-use of the website, computer literacy and use of online clinical guidance systems • Approximately 90–95% of general practice teams considered the website was easy to use and had contributed to both an increase and improvement of care in the community, with about 50% stating that it had improved their relationships with patients and hospital clinicians • Minor concerns included the website's increasing size and prescriptive nature and that it increased the duration of a patient consultation • Approximately 60% of hospital clinicians reported improvements in referral quality and triage and working relationships with general practices since the introduction of HealthPathways
Melnikov et al.	2013	Converting an open psychiatric ward to a closed one	This study explores the effects of converting an open psychiatric ward to a closed one, (in particular the before–after correlation) among self-efficacy, professional functioning, and uncertainty	Two large psychiatric medical hospitals Israel	• Quantitative Survey • Two structured pre/postconversion surveys were constructed by the researchers • respondents were asked to express their feelings and to describe their views with respect to the open-to-closed ward conversion	• Uncertainty was higher before the conversion than after the conversion • Professional functioning declined after the conversion • Self-efficacy was positively correlated with pre- and post-conversion functioning, but negatively correlated with post-conversion uncertainty

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Meredith et al.	2015	Transformation of primary care to new patient-centred models	The aim of this study is to explore Emotional Exhaustion (EE) during the initial phase of national primary care transformation	Primary care US	• Online, Quantitative survey • EE subscale of the Maslach Burnout Inventory. Predictors include clinic characteristics (from administrative data) and self-reported efficacy for change, experiences with transformation, and perspectives about the organisation	• In total, 53% of PCCs and 43% of staff had high EE • Primary Care Clinicians (vs. other primary care staff), female (vs. male), and non-Latino (vs. Latino) respondents reported higher EE • Respondents reporting higher efficacy for change and participatory decision making had lower EE scores
Morrow et al.	2013	Redesigning postnatal care	This study examines midwives' views of the changes and their impressions of the effects of the changes on women and their infants	Hospital Australia	• Quantitative Surveys • Cross-sectional surveys of midwives were conducted six months after the changes to postnatal care were introduced then again, two years later	• The changes included cessation of routine postnatal observations and the use of clinical pathways for women who gave birth vaginally; promotion of rest through minimal disturbances before 9 am; discouraging the use of the call bell system except in emergency situations; introduction of 'one-to-one' time with women; and promotion of normalcy and independence • Overall, midwives were supportive of, and complied with, the changes to postnatal care • They agreed that change was needed and believed that the new way of providing care would be better for women and increase individualised care • Midwives also agreed that the changes would facilitate rest for women, believed that removal of routine

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						observations for women after a vaginal birth was safe and that it would allow more time with women • Over time, midwives were more likely to feel autonomous when providing postnatal care • Some concerns were raised, mostly in relation to the challenges around postnatal documentation, care provision without the guidance of a care/clinical pathway, and about limiting the use of the call bell to only emergency situations • Midwives were not confident that the changes would necessarily translate to a measurable increase in women's satisfaction with care, and were not confident that the changes translated into more time to spend listening and providing support to women
Murray et al.	2012	Fracture clinic redesign	The aim of this study was to explore the perceptions of emergency room (ER) staff about the impact of the new style clinic on their education, daily practice and interprofessional relations	Hospital UK	• Quantitative Survey • Survey exploring emergency room (ER) staff perceptions • Adverse events were gathered from the 'incident record 1' (IR1) reporting system	• ER staff found the new style clinic was educational, practice changing and improved interprofessional relations, but that it did not interfere with ER duties • Adverse incidents reported fell from 8 per year to 0 per year after the introduction of the new style clinic
Musau et al.	2015	Hospitals have implemented measures related to healthcare-	This study examined the effects of healthcare-associated infectious disease	Large acute care hospital in Ontario, Canada	• Qualitative • Individual interviews	• The incidence rates of methicillin-resistant Staphylococcus aureus (MRSA), Clostridium difficile and vancomycin-resistant enterococci (VRE) at the study site decreased, but remained above provincial benchmarks

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		associated infections	outbreaks on nurses' work			• Nurses experienced workload challenges, time pressures and psychological effects stemming from outbreaks and developed various innovations in response. Patient care was also affected • Participants also acknowledged that certain aspects of their work, such as documentation, increased during outbreaks, but the nurse–patient ratio did not change in response. Nurses expressed concern that the provision of general nursing care was not completed in a timely manner or at all, particularly when their workloads were very heavy. The nurses cared for isolated patients for long periods
Newman et al.	2016	Digital Telehealth Network (DTN) Digitisation of a large Australian rural mental health service	The aim of this study was to explore service providers' experiences of an existing regional telehealth network for mental health care practice twelve months after digitisation in order to identify the benefits of digital telehealth over an analog system for mental health care purposes in rural Australia	Hospitals Australia	• Qualitative • Interviews and focus groups were conducted	• The main intended use of the DTN was for remote mental health clinical assessments by city-based psychiatrists • Marked differences were reported between sites in the extent of allocating priority DTN use to mental health assessments (rather than other uses); frequency of use varied according to need and the availability of city-based or visiting psychiatrists, from once or twice per day to once a month or less • Overall participants felt that the technical quality of the DTN was a significant improvement over the previous analog system • The DTN has impacted mostly positively on clinical practice, including improving the speed of practice and the way clinicians communicate

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						• Some GPs felt that their participation in DTN consultations with psychiatrists exposed them to opportunities to improve clinical practice with mental health interviewing • Participants observed a range of patient benefits, including improved timeliness/availability of care, reduced travel, improved access to care locally, greater opportunity to receive care without stigma, and reduced family stress
Nilsson et al.	2017	Implementation of value-based healthcare (VBHC)	The aim of this study is to gain a deeper understanding of VBHC when used as a management strategy to improve patients' health outcomes	University Hospital Sweden	• Qualitative • qualitative interviews were undertaken	• An example of improvements related to patients' health outcomes was solving the problem of patients' nausea. The nurse assistant and the registered nurses started to make investigations to find relevant assessment instruments. Thereafter they started to test how to measure the patients' nausea • Improvement related to processes was developing care planning and increasing the number of contact nurses • Improvement related to measurements was increasing coverage ratio in the National Quality Registers used, and the development of a new coding system for measurements
Nordmark et al.	2016	Implementation of discharge planning using Normalization Process Theory (NPT)	The aim of this study was to explore the embedding and integration of the Discharge Planning Process (DPP)	Hospital Sweden	• Multi, written documentation from workshops with staff, registered adverse events and system failure • Web based survey	• Clinicians saw its value in securing the patient's transition of care from home to the hospital and back home • They expressed that the quality of the DPP improved with specific discharge planners at the hospital wards • Registered Nurses (RN) saw the DPP as an extra work task and had to prioritise other work tasks such as patients'

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					• Individual interviews with staff	medical treatments, nursing interventions and rounds. RNs expressed that they felt pressure from physicians • They described that information exchange during the DPP depended on the nurses' individual skills, beliefs and knowledge. A lack of knowledge impeded the DPP
Nyman et al.	2013	Action Research (AR) to improve hospital based childbirth care	The aim of this study is to explore midwives' responses to a changed approach in the initial encounters with women and their partners in the labour ward	Hospital Sweden	• Qualitative • Individual interviews	• Glancing beyond routines describes how, for some midwives, the changed care approach provided increased potential for them to support each woman and partner by focusing on their individual needs in a holistic sense • For some midwives it was better by 'being confined to own routines 'capturing a belief that inherent routines were already optimal in the first encounter in the labour ward
Obling	2013	Accelerated cancer services	This study aims to explore the ways that hospital doctors relate emotions to their understanding of professional medical work and how they respond to recent organisational changes within the field.	Public teaching hospital Denmark	• Qualitative • Semi-structured interviews (n=14) with doctors from a public teaching hospital	• The doctors represented rich accounts of professional medical work, which includes an understanding of what a doctor should feel and how he/she should make him/herself emotionally available to others • The impetus for making this appearance was affected by recent new public management reforms and attempts to accelerate the delivery of services • Some of the interviewees identified a certain strategy to manage their feelings that prevented them from becoming emotionally involved with individuals who are seriously ill

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Pannick et al.	2017	Prospective clinical team surveillance (PCTS) involves structured interdisciplinary briefings to capture challenges in care delivery, facilitated organisational escalation of the issues they identified, and feedback	The aim of this study is to investigate the impact of prospective clinical team surveillance (PCTS)	Hospitals UK	• Qualitative • Ethnography and two focus groups were conducted with staff taking part in a trial of PCTS	• Hospital Event Analysis Describing Significant Unanticipated Problems (HEADS-UP)) focused on the problems most commonly identified on medical wards. A single facilitator helped teams advance the issues raised in their briefings, and also provided follow-up and feedback to stakeholders throughout the organisation. Briefings were known locally as 'HEADS-UP briefings' • The briefings formed a psychologically safe environment in which problems could be discussed openly, without fear of retribution • The style and timeliness of PCTS feedback also contributed to a sense that this was a non-judgmental forum for team learning • Reflections during the briefing often highlighted the overall management of patient flow, rather than specific actions or diagnostic processes that others could emulate • PCTS helped identify a route for more rapid resolution of practical problems. It provided an acceptable mechanism for staff to log issues into which they had immediate insight • PCTS brought about faster resolution of safety and quality issues. There was increased self-monitoring within ward teams. Also, senior ward staff at the daily briefings were more quickly aware of issues they could resolve
Petersen et al.	2018	e- message system was introduced to ensure dialogue and precise and	The aim of this study is to investigate hospital and home care nurses' experiences of how	Hospital Denmark	• Qualitative • Semi- structured focus group interviews and participation	• Nurses used internal systems and journals along with information from patients and relatives to make a comprehensive nursing assessment at admission. Int the se-system, it difficult to understand as the description of the patient's functional level was rated in a system

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		useful information exchange	an e- message system influences (cross-sectoral) communication		observation was conducted	unfamiliar to them, e.g. practical help was only described in minutes spent on the services • The home care nurses did not always find the information adequate in the e-message from hospital and often called the hospital for more details • The hospital nurses worked in an environment characterised by heavy workloads, limited access to computers and lack of continuity due to nurses working in shifts. As they did not consider cross-sectoral communication as essential for taking care of patients on the ward, they often found it problematic to prioritise writing reports over taking care of their patient • The e-message system is basically a one-way communication system. When hospital nurses sent information through the e-message system the status of the report changed to "*received.*" Neither the hospital nurses nor the home care nurses found that the e-message system promoted dialogue between them
Porter et al.	2018	Use of computerised clinical decision support (CCDS) in emergency pre-hospital care	The aim of this study was to explore paramedics' experience of the CCDS intervention and to identify factors affecting its implementation and us	Ambulance service sites UK	• Qualitative • Interviews and focus groups	• The CCDS was introduced to paramedics during formal training sessions. Experience of adoption and use of the CCDS varied between individual paramedics, with some using it with all eligible patients, some only with patients they thought were 'suitable' and some never using it • Paramedics also encountered problems with printing patient records, finding that not all vehicles were equipped with working printers, paper might be missing, or that having printers fixed to vehicles meant paramedics had to go back to their vehicles to produce

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						print-outs and then return to their patients to give them their copy • Connectivity for this web-based system was reported as a problem • Paramedics reflected on the impact of the CCDS on their practice in relation to patient care and clinical decision-making. Several paramedics discussed how the CCDS contributed to a shift towards a greater role as independent decision-makers, without taking over from their own clinical judgement • Many paramedics held mixed views about the CCDS, reporting benefits but also questioning the extent to which it could assist them with their decision-making
Rapson & Kersun	2014	Oncology House Physician Model	This study aims to explore the impact of pediatric oncology hospitalist model on the oncology unit staff	Hospital US	• Survey • The survey was developed after a literature review of subspecialty hospitalist models • The following domains were explored in the survey: continuity of care, experience of the hospitalist, efficiency of rounds, handoffs, hospitalist response to nursing, safety, and	• Respondents agreed that house physicians provide better continuity of care • House physicians are more comfortable with the experience level of the physician and are better able to answer questions • House physicians serve as backup for system-related and patient-related questions and there is an experienced provider was on the floor

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					accessibility of the hospitalist	
Rosbergen et al.	2017	Implementation of an enriched environment in an Australian acute stroke unit	This study explores the perceptions and experiences of nursing and allied health professionals involved in the implementation of an enriched environment in an Australian acute stroke unit	Hospital Australia	• Qualitative • Face-to-face, semi-structured interviews	• The staff perceived that 'the road to recovery had started' for patients. An enriched environment was described to shift the focus to recovery in the acute setting, which was experienced through increased patient activity, greater psychological well-being and empowering patients and families • The authors reported that it takes a team to successfully create an enriched environment. Integral to building the team were positive interdisciplinary team dynamics and education. The impact of the enriched environment on workload was diversely experienced by staff • Staff reflected that changing work routines was difficult. Contextual factors such as a supportive physical environment and variety in individual enrichment opportunities were indicated to enhance implementation • Education was perceived of great importance to successfully implement an enriched environment. Staff expressed that the interactive educational workshops that were provided prior to embedding the enriched environment created a basic understanding of the concept and awareness of the different components of an enriched environment

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Russ et al.	2010	Implemented electronic health record (EHR)	The aim of this study was to explore helpful and challenging aspects of electronic health information with respect to clinical workflow and identify a set of characteristics that support patient care processes	Hospital US	• Qualitative • Interviews	• Participants provided examples of how electronic information was not consistent within Health information technology (HIT), between HIT and paper documents, and also between HIT and individuals' personal knowledge • Obtaining current electronic information was sometimes challenging • A nurse practitioner (NP) described how electronic information was not always complete • In some cases, incorrect information hindered clinical workflow. Examples involved incorrect note titles, inaccurate medication lists and problems with patient phone numbers • Participants discussed automatic electronic logouts; referral forms sent to outside clinics via the virtual private network (VPN); and future technologies for electronic signatures • Interviews revealed accessibility problems when secure login processes were too long, systems were running slow or computers were down. Accessibility issues were reported by clinical workers and support staff
Samaranayake et al.	2014	Implementing a bar-code assisted medication administration (BCMA) system	The aim of this study is to explore the effects of a bar-code assisted medication administration system used without the support of computerised prescribing (stand-	Hospital Hong Kong	• Qualitative interviews and observation	• Most pharmacy staff believed that the dispensing process was slower after implementing the BCMA system • Some participants thought that work was made more difficult or complicated after implementing the technology than before • Some participants viewed that the absence of computerised prescribing was a barrier for prompt

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			alone BCMA), on the dispensing process and its users			updating of patient profiles when prescribing changes were made • The pharmacy staff believed that the new system • improved the safety in the drug administration process and benefited the nursing staff and patients
Solhaug et al.	2010	The Newborn Individualized Developmental Care and Assessment Program (NIDCAP)	The aim of this study was to explore the staff perceptions of implementation of The Newborn Individualised Developmental Care and Assessment Program (NIDCAP)	University Hospital Norway	• Survey and Qualitative • This survey instrument was developed by Swedish experts and has been used to survey staff opinion after NIDCAP implementation in several European countries such as Sweden, France and The Netherlands • The questions were related to perceptions of infant well-being, parental participation and staff working conditions	• Staff considered NIDCAP to have a positive impact on infant wellbeing as well as on their opportunities to rest and sleep during the hospital stay • Staff considered NIDCAP to have a positive impact on infant wellbeing as well as on their opportunities to rest and sleep during the hospital stay • Staff in particular perceived that NIDCAP had a positive impact on their capability to influence infant well-being. • The nurses were of the view that the structure and language in the care plans was seen as very simple. it was agreed that the observation reports to a large extent contributed to continuity of care and that the care recommendations were helpful

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Sommerbakk et al.	2016	IMPACT project (IMplementation of quality indicators in PAlliative Care sTudy)	This study aims to identify factors perceived as barriers or facilitators for improving Palliative Care (PC) in cancer and dementia	Two hospitals, one nursing home, and two local primary care Norway	• Qualitative • Individual, dual-participant and focus group interviews	• One challenge to implementing PC tools was that few tools are specifically tailored to primary care • The use of information collected in the forms motivated staff to use them • Several participants said that having the new tools integrated into the electronic system would then be easily accessible to staff • Lack of knowledge about and professional skills in PC were mentioned by several interviewees as barriers to improving PC in the services • Several nurses expressed that they felt anxious about being responsible for terminally ill patients. Training in PC was reported as an important measure to improve the confidence of staff • A barrier to a constructive culture of change was lack of support from colleagues. Staff members did not understand why some of their colleagues were given more training and responsibilities that took them away from daily clinical work. This lack of understanding from colleagues had been stressful for staff members involved in improvement processes • Staff had more administrative work to do in addition to the clinical work. The clinical workload had also increased because the patients admitted to all the services were generally in poorer condition than before
Southgate et al.	2011	Workplace nurses' injury and return-to-work	The purpose of this study was to identify the factors that facilitate or impede	Hospital Australia	• Qualitative • Focus group discussions	• Scarcity of qualified nurses had led to some healthcare employers treating nurses as a valuable resource, even

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			the successful return to work (RTW) of nurses who have sustained a workplace injury			when they were injured – workplaces were keen to retain injured nurses due to workforce shortages • It was emphasised to provide nurses with suitable duties and to incorporate clinical or patient-centred duties within RTW plans. They also emphasised that RTW plans need to meet individual life circumstances. Knowledge of the nurse's life circumstances is acquired by forging an early supportive relationship with the injured nurse
Stahl et al.	2017	Picker Employee Questionnaire	The aim of this research is to validate and adapt the Picker Employee Questionnaire With Hospital Midwives	Hospital Germany	• Quantitative- Survey • Study on adaptation and validation of the questionnaire	• The Picker Employee Questionnaire was originally designed as a general measure for use by all hospital staff • The adaption of the Picker Employee Questionnaire resulted in a tool with 75 closed questions referring to central aspects of work environment, experience and engagement • The questionnaire was suited for the measurement of midwives' work experience, environment and engagement • It is a useful tool that supports in shaping and motivating an efficient work environment for midwives
Van Doormaal et al.	2010	Computerized physician order entry (CPOE) system	The aim of this study is to explore physicians' and nurses' expectations before and experiences after the implementation of a computerised	Hospitals Netherlands	• Quantitative- Survey • Expectations and experiences of physicians and nurses with the CPOE system were measured with	• Two semi-structured questionnaires were developed targeting physicians and nurses respectively. These surveys were constructed to measure expectations and to measure experiences with CPOE • Physicians had positive expectations of CPOE being able to reduce prescribing errors and to give an improved

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			physician order entry (CPOE) system		statements on a 5-point Likert scale (1=completely disagree, 5=completely agree)	overview of patients' medication use which was in line with their experience with CPOE • Nurses experienced CPOE to improve the clarity of the prescriptions just as they had expected
Wall	2014	Self-employed nurses as change agents in healthcare	This research was an ethnographic research that investigated how self-employed nurses perceive the contemporary healthcare field, what attributes they possess that facilitate their roles as change agents, what strategies they use to influence change, and what consequences they face for their actions	Hospitals and private practice Canada	• Mixed, focused ethnography/observation • Qualitative • Self-employed nurses were sought for their point of view as possible change agents uniquely positioned within an institutionalised field	• The nurses in this study perceived overwhelming and disheartening issues in the healthcare system – they had concerns about institutionalised ideas about economics, efficiency, and reactive illness care, which contributed to a lack of real reform in the system • A concern was raised about budget consciousness by the hospital which thus eliminated some important patient care services • role in community health education was eliminated because health promotion and education is easily dropped off the slate in favour of hospital services • Self-employed nurses had a special level of character development and individuation and a sense of awakening, which was distinct from nurses in general. They were more clinically involved and ready to take risks. The nurses viewed themselves as risk takers, open to change and positioned to promote innovation in healthcare delivery • Self-employed nurses expand the professional jurisdiction of nursing, and called upon their existing professional knowledge and standards to adapt nursing • Some started their own practice centre and began to broaden their professional potential

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						• These nurses began to exercise a vision of healthcare that went beyond hospital-centred care
Weber et al.	2011	In England emergency departments (EDs) must either discharge patients or place them in a hospital bed within 4 hours of arrival	This study aimed to explore the within four hours model of care	Hospital UK	• Qualitative • Semi-structured interviews	• Respondents believed the target offered an opportunity to improve care for patients • An important concern was that the wards had not changed their processes sufficiently to be able to quickly institute continuing evaluation and treatment on patients arriving from the ED • Meeting the 4-hour target challenged departments to accept sweeping changes in traditional ways of working • The 4-hour target was a challenge for ED nurses. In addition to caring for patients within the time allotted, nurses kept an eye on the clock, prodded physicians for decisions, and reported delays to senior management or more senior clinicians. There was often a conflict between ED and ward nursing staff • The ED nurses were empowered to initiate diagnostic testing when patients arrived in the ED and to contact more senior specialists when there were delays in obtaining consultations
White et al.	2014	Intensive Care Unit Patients in the Post-anesthesia Care Unit	The purpose of this study was to understand the experiences of post-anesthesia nurses caring for intensive care unit (ICU)	Hospital Canada	• Qualitative • Case study	• Participants were functioning as both a PACU nurse and an ICU nurse at the same time • Participants felt as if they were giving less than the best care; they felt that they should be doing more for their patients but felt incapable of doing it

Authors	Year	Method/ System where clinical care is provided	Aims/Objectives	Setting and country	Method of data collection and Sample	Key findings (relating to methods of clinician experience of delivering care)
			patients in the post-anesthesia care unit (PACU).			• Nurses felt a gap in their knowledge about high-quality care which is provided in the ICU
Ziebert et al.	2016	Transition into Practice	This study explored the experiences of all newly hired nurses (at 3, 6, and 12 months post-hire) during a newly designed transition-to-practice program at a pediatric hospital.	Hospital US	• Qualitative • Interviews	• Participants appreciated opportunities for feedback and reciprocal communication • Unit socialisation was important, and participants could identify the value of feeling welcomed and recognised • They also felt they were well-supported in their new roles by seniors checking with them on their progress

Appendix 4: Summary of included grey articles (n=15)

Author/ organisation	Year	Country	Publication type
Centre for Health Service Development (found on Aust DoH Website)	2015	Australia	*Evaluation of the Better Health Care Connections (BHCC): Models for Short Term, More Intensive Health Care for Aged Care Recipients Program. Final Report* Includes sections on factors influencing implementation – 3.7 – and impact on individual providers – 5.2
UNSW (found on site of NSW Department of Health)	2011	Australia	*Report of the Mid-program evaluation of 'Take the Lead'* Nurse Manager and clinical staff perspectives of implementation of change: sections 4.2, 4.4, 4.6 and 4.7 (sustainability)
NSW Agency for Clinical Innovation	2017	Australia	Report: *Three ACI-sponsored initiatives: Lessons for system-wide change* Three case studies with discussion on staff experiences esp. on pages 21–24, 30–31
Department of Health and Human Services, Victoria	2019	Australia	*Healthlinks Chronic Care Evaluation* Qualitative evaluation is specific to the experience of staff, a mix of clinicians, managers, senior managers and executive – see Section 3.3, page 28
Queensland Health	2015	Australia	*Lady Cilento Children's Hospital Review*: Operational and building commissioning Pages 26–29 and 40–41 contain narratives of staff experiences of amalgamation of services, staff and models of care from two hospitals into one
WA Health	2017	Australia	*Child and Adolescent Health Service Review of the morale and engagement of clinical staff at the Princess Margaret Hospital* While this is titled a review of morale, this paper is reviewing the impact of a change for the clinical staff of this service. Page 10 gives a summary of the findings related to change management. Page 15 has recommendations

Author/ organisation	Year	Country	Publication type
Ministry of Health	2014	New Zealand	*An evaluation of the reorientation of child and adolescent oral health services* Pages 50–55 include analysis of clinical staff experiences of change
Ministry of Health, Ontario	2017	Canada	*Investigation report: Brant Community Healthcare System* Pages 18–23 and 27–29 detail the impact of significant change on staff Pages 40–50 is specific to medical staff
Canadian Health Services Research Foundation (found on Canadian Healthcare Improvement site)	2011	Canada	*Adopting a common nursing practice model across a recently merged multi-site hospital* Data includes quantitative surveys and focus groups with nursing staff
Royal College of Surgeons	2016	United Kingdom	*A question of balance: The extended surgical team* Experiences of staff working in different multidisciplinary team models of care
The Health Foundation	2017	United Kingdom	*Some assembly required: implementing new models of care*
The Kings Fund	2018	United Kingdom	*Transformational change in health and social care: reports from the field* Part of this study was to explore the experience of clinicians in delivering or undergoing change to healthcare delivery Summary of findings from case studies included section 6
The Kings Fund	2008	United Kingdom	*Understanding doctors: Harnessing professionalism*
The Commonwealth Fund	2006	United States	*Facilitating implementation of evidenced-based guidelines in hospital settings: learning from trauma centres*.

Author/ organisation	Year	Country	Publication type
			Very specific to guideline implementation however some snippets of clinician experience on pages 11–15 and 34–41
NHS Staff Survey	2019	United Kingdom	Staff survey comprising of core composite items and additional focused elements that can be added for assessment of leadership, patient experience etc.