Improving ICU transitional care by combining quality management and nursing science – two scientific fields meet in a systematic literature review

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Abstract

Purpose – The purpose of this literature review was to explore to what extent quality management (QM) and nursing science offer complementary perspectives to provide better quality care, by looking at QM core concepts and tools.

Design/methodology/approach – A systematic literature review was conducted. Papers published in academic journals between January 2013 and December 2019 were included. A deductive content analysis was chosen using QM core values as an analytical framework.

Findings – The results showed that QM core values, methodologies and tools were found in the reviewed articles about intensive care unit (ICU) transitional care. The results indicated that core values in QM and the core competencies within nursing science in ICU transitional care are mutually dependent upon each other and exist as a whole. ICU transitional care is, however, a complex interpersonal process, characterized by differences in organizational cultures and core values and involving multidisciplinary teams that collaborate across hospital units. The QM core value that was least observed was committed leadership.

Research limitations/implications – Combining QM and nursing science can contribute to a deeper understanding of how to improve the ICU transitional care process by bringing complementary perspectives.

Practical implications – The included articles portray how QM is applied in ICU transitional care. Implications for future research focus on enhancing the understanding of how QM and nursing science can bring complementary perspectives in order to improve ICU transitional care and how QM values, methodologies and tools can be used in ICU transitional care. Committed leadership and team collaboration in ICU transitional care are areas that call for further research.

Originality/value – The findings contribute to the body of literature by providing important insights in terms of how QM core values, methodologies and tools are present in research about ICU transitional care and how the two research subjects, namely, QM and nursing science, bring complementary perspectives.

Keywords Values, Quality management, Patient care, Healthcare quality, QM

Paper type Literature review

Introduction

The health care system is facing major challenges, as it is tasked with providing adequate person-centered care with limited resources while simultaneously ensuring quality of care and patient safety. This is a complex task, and creating a valuable organizational culture and working with continuous improvements are important parts of building quality and safety for the patients. Breaking down organizational silos becomes crucial in creating continuity of care for patients being moved between hospital units. One example of a transition is when a patient is transferred from an intensive care unit (ICU) to a general ward. This transfer process is called ICU transitional care (Chaboyer *et al.*, 2005). The discharge of patients from the ICU to a ward is one of the most challenging and high-risk transitional care processes (Li *et al.*, 2015). A poorly coordinated discharge from the ICU can be a potential patient safety risk and can lead to readmission to the ICU, additional healthcare costs and preventable deaths (Gantner *et al.*, 2014; Kramer *et al.*, 2013; Whittaker and Ball, 2000).

Quality management (QM) is a set of core values, methodologies and tools (Bergman and Klefsjö, 2010). The core values within QM are "focus on customers," "committed leadership," "let everybody be committed," "improve continuously," "focus on processes" and "base decisions on facts." These values can be seen as mutually dependent and constituting a system that promotes customer satisfaction, works with continuous improvements and creates a quality culture. A focus on organizational culture is central to QM because culture is a general factor that affects almost every part of organizational interactions (Henri, 2006).

Nursing research is a crucial factor to guarantee safe, high-quality, person-centered healthcare for both today's and tomorrow's patients. Strategies for improving the quality of nursing should comprise components such as ethical responsibility, core competencies, continuous quality improvement and prioritization, safety, knowledge-based care and, finally, the implementation of strategy, its conditions, and objectives (Swedish Society of Nursing, 2017). There are six so called core competencies in nursing science proposed as being applicable to all healthcare professionals. These competencies are particularly crucial for achieving good-quality and safe healthcare (Cronenwett *et al.*, 2007) and have similarity with the core values in QM: person-centered care (focus on customers), safe care (committed leadership), evidence-based care (base decisions on facts), team collaboration (let everybody be committed), quality improvement work and improvement knowledge (improve continuously) and, information and communication technology. According to, for instance, Leotsakos *et al.* (2014), leadership is essential for making care safe and effective.

With the purpose to improve the ICU transitional care process and therefore to increase patient safety and quality of care, it is of great interest to investigate how QM and nursing science can work together and provide additional value to the ICU transitional care process.

This systematic literature review aims to explore to what extent QM and nursing science offer complementary perspectives to provide better quality care, by looking at QM core concepts and tools.

QM and organizational culture

QM can be seen as a management system including values, methods and tools (Bergman and Klefsjö, 2010). In QM, system thinking is essential (Juran, 1974; Deming, 1994). Bicheno (2008), and Jackson (2003) argue that system thinking gives a holistic perspective on the

organization. System thinking is also central for successful work, and organizations should be managed as a system and including the future (Deming, 1994).

The foundation for QM are the core values "focus on customers," "let everybody be committed," "improve continuously," "focus on processes" and "base decisions on facts" (Bergman and Klefsjö, 2010). A "committed leadership" acts as an overall basis for the core values. Leadership is of great importance, and managers are important actors when an organizational culture is created (Ingelsson, 2013).

According to Dahlgaard-Park (2012), core values support co-workers' spiritual and ethical needs. If those values are not practiced, there will be consequences regarding quality, efficiency and effectiveness in the organization.

Focusing on an organization's customers is central in striving for quality. The customers are those who lastly define what quality is according to their needs and expectations. This means to actively determine what customers want and how this can be fulfilled (Bergman and Klefsjö, 2010). Facilitating employees to be involved and actively influence fact-based decisions and participation in quality improvements is important. The basic rule for quality improvements in an organization is that there is always a way to do something more efficiently to reach a higher customer value and lower costs (ibid). Thus, this requires creativity and innovation. Processes can be seen as activities linked together, creating value to the customer (ibid).

The core values in an organization form a sustainable system of thinking, which is necessary for the organization to improve and succeed. Sustaining in this context can be defined as "maintaining a process of continuous improvement" (Dale *et al.*, 2007, p. 127). Sustainability can therefore be seen as a part of QM. Åslund *et al.* (2019) recommend a complementary value of QM to support and accelerate sustainable development in organizations - the value of "focus on sustainable development".

Team work can be seen as a key element in total quality management (TQM) (Dale *et al.*, 2007). Making full use of the skills and knowledge of all employees and creating a group culture is one aspect of working in teams.

QM initiatives often focus on problem solving and within health care, the same approach is often used. To create a balance, a more strength-based approach can be practiced, such as appreciate inquiry (AI), a theory and mind-set leading to creativity and organizational learning (Watkins and Cooperrider, 2000). AI is a positive way to discover possibilities and transform systems and teams in the organization towards a shared vision (Cooperrider, 2005).

The core values cannot exist by themselves and must be supported by methodologies and tools in order to build a desired organizational culture (Bergman and Klefsjö, 2010). Organizational culture can be seen as a pattern of shared assumptions learned by a group and adapted to new members as the correct way to manage problems of external adaptation and internal integration (Schein, 2009). Organizational culture is a complex concept, and Schein describes different levels of culture that have to be understood and managed. Those levels are artifacts, espoused values and underlying assumptions. Artifacts are the visible organizational structures; espoused values are the strategies, goals and philosophies, and underlying assumptions are the beliefs, perceptions, thoughts and feelings in an organization.

ICU transitional care

High quality of care and patient safety are important factors when transferring patients within and between hospital units. The transfer of a patient from an ICU to a general ward

can be a challenging process due to the complex health situation of critically ill patients (Häggström and Bäckström, 2014).

ICU transitional care is care:

[. . .] provided before, during, and after the transfer of an ICU patient to another care unit that aims to ensure minimal disruption and optimal continuity of care for the patient. This care may be provided by ICU nurses, acute care nurses, physicians, and other healthcare professionals (Chaboyer *et al.*, 2005, p. 16).

As ICU transitional care involves multiple types of health-care providers, it can be difficult to ensure safe care. Planning for discharge from an intensive unit is a process that aims to provide continuity of care for the patient (Whittaker and Ball, 2000).

According to Lin *et al.* (2013), the process of discharging patients from the ICU is an intricate activity that requires team work both between the disciplines within the ICU and between co-workers from different hospital units. Another conclusion by Lin *et al.* was that handover and communication tools could be misused if co-workers from different care areas have different goals. In a study by Häggström *et al.* (2009), the result showed that knowledge about ICU transitional care, collaboration, routines, and the educational environment can be improved.

Overall project description

The research presented in this paper is conducted as part of a research project called *Increased Quality and Efficiency in Patient Transfers*. This project is financed by The Kamprad Family Foundation and was initiated in January 2018. The overall purpose of the project is to gain new knowledge about how efficiency and quality in patient transfers within ICU transitional care can be improved, focusing on leadership, continuity of care, safety culture and learning. The purpose will be achieved through cooperation between the two research subjects, QM and nursing science.

Methodology

Research design

A systematic literature review was undertaken to present the recent research, focusing on QM applied in patient transfers from ICU to general ward. The review followed the stages proposed by Tranfield *et al.* (2003) and started with planning the review, conducting a management review protocol and discussing the research problem. The next stage in the methodology was to conduct the review. This stage comprised identifying keywords and search terms. A structured database search was made, with support of a librarian with deep knowledge of database searching. Search terms and search blocks derived from the aim of this paper (Table 1). The search blocks were combined with "AND."

The electronic databases used for the searches were PubMed, Cinahl, Business Source, Scopus and Web of Science.

The review protocol developed in the planning stage included criteria for inclusion and exclusion. The inclusion criteria for articles were as follows:

(1) published between January 2013 and December 2019,

(2) peer-reviewed articles,

(3) contained full text,

(4) written in English,

(5)   focused on patient transfer from ICU to general ward, and

(6)   focused on improvement of quality of care and/or patient safety.

No restriction was made in terms of research design, with the exception of literature reviews, which were excluded as they are considered as secondary literature and therefore not relevant (Polit and Beck, 2017). Articles that were assessed not meeting the inclusion criteria (mentioned above) were excluded due to not being relevant for the review. The process for selecting the articles resulted in 27 articles and is visualized in a flow chart diagram in Figure 1. To strengthen the objectivity of the selection process, article screening should be conducted by more than one reviewer (Tranfield *et al.*, 2003). For this review, the first author read all titles and abstracts as a first screening. Articles that did not meet the inclusion criteria (Criteria 1–4) were excluded. When there were doubts about inclusion, another author was consulted. A second screening was conducted by the first author, who read all titles and abstracts again. Articles that did not involve patient transfer from ICU to general ward and improvements in quality of care or patient safety (Criteria 5–6) were excluded. Thereafter, the first author read the reference lists of the included articles, and additional articles were found. Articles found from this snowballing sampling process were screened by the first author against the inclusion and exclusion criteria.

The included articles (27) were different in research approach, originated from different countries and were published on different years. 26% of them were quantitative in their research design, 41% qualitative and 33% used mixed methods. Most of the articles were from the United States, Canada, Sweden and Australia. In all, 63% of the articles were published between 2017 and 2019 and thus 37% between 2013 and 2016.

Quality assessments of included articles in a literature review are necessary and refers to a study's internal validity in terms of the research questions and methodology (Tranfield *et al.*, 2003). Before starting the quality assessment process in this study, a pilot test for quality assessment was conducted by all authors. The pilot test included one quantitative, one qualitative and one mixed methods study chosen from the included articles. As there were no questions about how to assess the articles, the first author assessed the remaining articles herself. The quality of the included articles was assessed with help of checklists from the Swedish Agency of Health Technology Assessment and Assessment of Social Services according to evaluating qualitative and quantitative studies. Studies with a mixed methods design were evaluated with help of a checklist freely translated from Polit and Beck (2017).

The third stage in the literature review process can be divided into two parts (Tranfield *et al.*, 2003). First, the data in the extraction matrix provided a descriptive analysis of the selected articles (see table 2). Second, the data were analysed using a deductive qualitative

Search blocks	Search terms	
Intensive care	Intensive care unit*, emergency department, ICU, critical care unit*,	
Ward	Hospital unit, general ward*, hospital ward*, ward*, patient room*	
Transfer	Patient transfer*, handover*, discharg*, transition, handoff*, handout, mobil*	
QM	TQM, total quality management, quality management, quality improvement, six sigma, quality tech*, lean, PDSA, PDCA, appreciative inquiry, value*	

Table 1.
Search blocks and terms used in the electronic databases. * was used to find other variants associated with the term
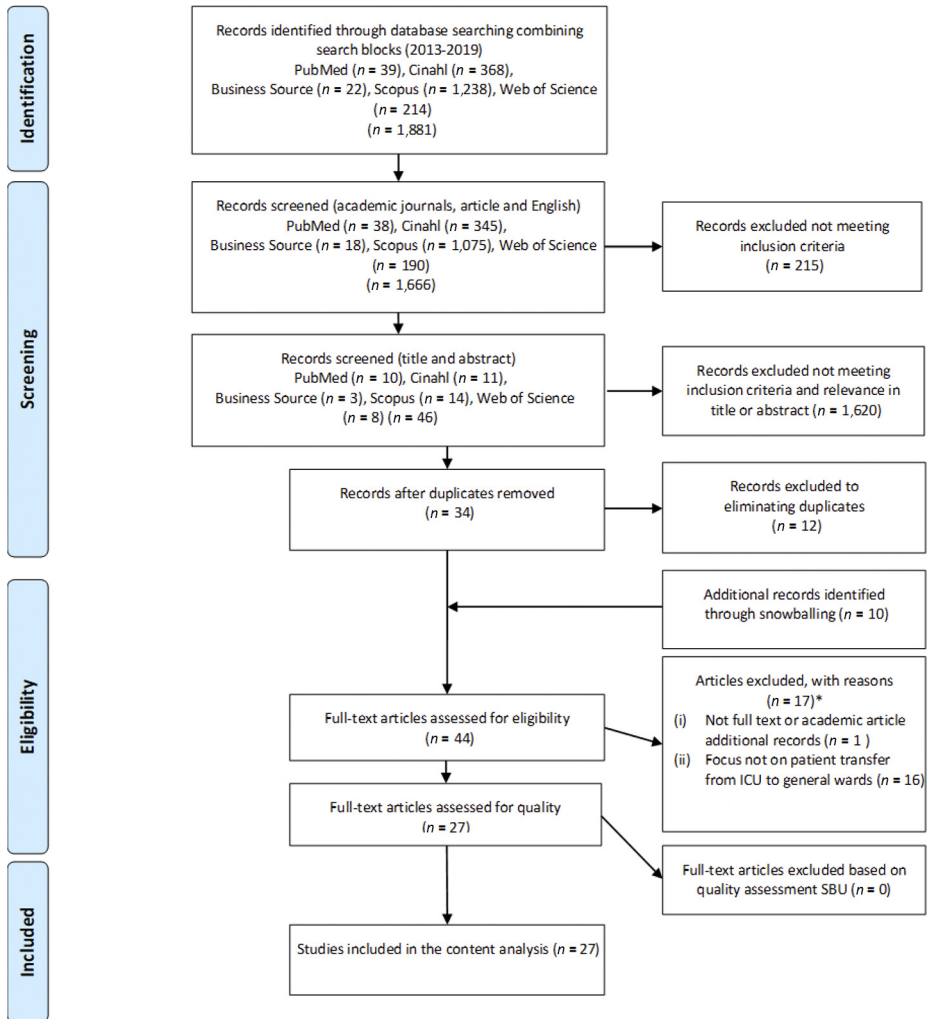
Figure 1.
Search process for the
articles included in
the review

Flowchart contents:

Identification

Records identified through database searching combining search blocks (2013-2019), PubMed (*n* = 39), Cinahl (*n* = 368), Business Source (*n* = 22), Scopus (*n* = 1,238), Web of Science (*n* = 214) (*n* = 1,881)

Screening

Records screened (academic journals, article and English) PubMed (*n* = 38), Cinahl (*n* = 345), Business Source (*n* = 18), Scopus (*n* = 1,075), Web of Science (*n* = 190) (*n* = 1,666)

Records excluded not meeting inclusion criteria (*n* = 215)

Records screened (title and abstract) PubMed (*n* = 10), Cinahl (*n* = 11), Business Source (*n* = 3), Scopus (*n* = 14), Web of Science (*n* = 8) (*n* = 46)

Records excluded not meeting inclusion criteria and relevance in title or abstract (*n* = 1,620)

Records after duplicates removed (*n* = 34)

Records excluded to eliminating duplicates (*n* = 12)

Additional records identified through snowballing (*n* = 10)

Eligibility

Full-text articles assessed for eligibility (*n* = 44)

Articles excluded, with reasons (*n* = 17)*
(i) Not full text or academic article additional records (*n* = 1)
(ii) Focus not on patient transfer from ICU to general wards (*n* = 16)

Full-text articles assessed for quality (*n* = 27)

Full-text articles excluded based on quality assessment SBU (*n* = 0)

Included

Studies included in the content analysis (*n* = 27)

content analysis, inspired by Elo and Kyngäs (2008). The content analysis contained the following steps: preparation, organizing and reporting.

The preparation phase started with selecting the unit of analysis, which in this case were the articles fulfilling the inclusion criteria. The analysis was carried out with a manifest approach. When using a deductive content analysis approach, the categorization matrix should be advantageously pretested in a pilot (Schreier, 2012). This is specifically important when two or more researchers are involved in extracting the data. In this review, the researchers independently extracted data into the developed categorization matrix. After extracting data, the researchers discussed the difficulties in using the test matrix and if the data have been interpreted differently.

Author (year)	Title	Focus on customers	Committed leadership	Let everybody be committed	Improve continuously	Focus on processes	Base decisions on facts
Alali *et al.* (2019)	Reducing unnecessary delays during the transfer of patients from the paediatric intensive care unit to the general ward: a quality improvement project		X	X	X	X	
Bergs *et al.* (2018)	A tailored intervention to improving the quality of intrahospital nursing handover		X			X	
Boyd *et al.* (2018)	Administrator Perspectives on ICU-to-Ward Transfers and Content Contained in Existing Transfer Tools: a Cross-sectional Survey	X		X	X	X	X
Brown *et al.* (2018)	Transfers from intensive care unit to hospital ward: a multicentre textual analysis of physician progress notes	X					X
Bunkenborg *et al.* (2017)	Handing over patients from the ICU to the general ward: A focused ethnographical study of nurses' communication practice	X	X	X		X	X
Cognet and Coyer (2014)	Discharge practices for the intensive care patient: A qualitative exploration in the general ward setting	X		X		X	X
de Grood *et al.* (2018)	Patient, family and provider experiences with transfers from intensive care unit to hospital ward: a multicentre qualitative study	X	X	X	X	X	X
Enger and Andershed (2018)	Nurses' experience of the transfer of ICU patients to general wards: A great responsibility and a huge challenge	X	X	X	X	X	
Goulding *et al.* (2015)	Improving critical care discharge summaries: a collaborative quality improvement project using PDSA	X	X		X		X
Halvorson *et al.* (2016)	A multidisciplinary initiative to standardize intensive care to acute care transitions	X		X	X	X	
Hoffman *et al.* (2017)	Development and implementation of a risk identification tool to facilitate critical care transitions for high-risk surgical patients		X			X	X
Häggström *et al.* (2013)	To reduce technology prior discharge from intensive care – important but difficult? A grounded theory	X			X	X	
Häggström *et al.* (2014)	Important quality aspects in the transfer process	X				X	
James *et al.* (2013)	Staff perception of patient discharge from ICU to ward-based care	X				X	
Kauppi *et al.* (2018)	Ward nurses' experiences of the discharge process between intensive care unit and general ward	X	X	X	X	X	X

(continued)

Table 2.
Structured categorization matrix of the QM core values

Table 2.

Author (year)	Title	Core values in quality management (Bergman and Klefsjö, 2010)					
		Focus on customers	Committed leadership	Let everybody be committed	Improve continuously	Focus on processes	Base decisions on facts
Kowitlawakul et al. (2015)	Observation of handover process in an ICU: barriers and quality improvement strategy	X			X		X
Lee et al. (2019)	A Queueing network model for analysis of patient transitions within hospitals					X	X
Manente et al. (2017)	Transitioning patients from the ICU to the general pediatric unit: a piece of the puzzle in family-centered care	X	X	X		X	
McBeth et al. (2017)	Interprofessional Huddle: One Children's Hospital's Approach to Improving Patient flow	X	X	X		X	
McKenzie et al. (2017)	Reconciling patient and provider priorities for improving the care of critically ill patients: A consensus method and qualitative analysis of decision-making	X		X	X		X
Parenmark et al. (2019)	Reducing night-time discharge from intensive care. A nationwide improvement project with public display of ICU outcomes	X		X	X		
Peet et al. (2019)	Strengthening nursing surveillance in general wards: A practice development approach	X					
Pottenger et al. (2016)	Comprehensive unit-based safety program to improve patient experience: how a hospital enhanced care transitions and discharge processes	X		X	X	X	
Sheth et al. (2016)	Changes in efficiency and safety culture after integration of an I-PASS supported handoff process	X				X	X
Stelfox et al. (2016)	Critical care transition programs and the risk of readmission or death after discharge from ICU	X	X		X	X	X
Uhm et al. (2018)	The impact of a standardized inter-department handover on nurses' perceptions and performance in Republic of Korea	X				X	
van Sluisveld et al. (2017)	Barriers and facilitators to improve safety and efficiency of the ICU discharge process: a mixed-methods study	X	X	X	X	X	X
		23	11	14	14	21	14

The included articles were then divided equally among all the authors and the articles were read through several times by the authors to obtain a sense of the whole. Meaning units were coded by the authors individually. All authors extracted the data into the matrix. After extracting data, a meeting with all authors was held. The aim of the meeting was to reach consensus about all articles fulfilling the inclusion criteria and that the data were placed in the most suitable category of the matrix. Data that did not fit into the matrix with the core values but were characteristic of QM were categorized into additional categories. A new version of the matrix was developed with the additional categories: Organizational Culture, Team Collaboration, System View, Sustainability, Methodologies and Tools. Collaboration among the authors to ensure that there was consistency regarding the way the data were classified refer to the reliability of a study. Being clear in describing the steps taken in a study and to be consistent in the way it was conducted, can help increase reliability of a qualitative study (Yin, 2014).

Results

The results from the content analysis can be found in the three attached tables. Table 2 consists of the results from the content analysis when the QM core values were used as an analytical framework. Tables 3 and 4 present additional identified categories according to QM.

| Author (year) | Additional categories identified in the content analysis | | | |
	Organizational culture	Team collaboration	System view	Sustainability
Alali *et al.* (2019)		X	X	
Bergs *et al.* (2018)	X	X	X	
Boyd *et al.* (2018)		X		
Brown *et al.* (2018)				
Bunkenborg *et al.* (2017)	X	X		
Cognet and Coyer (2014)	X			
de Grood *et al.* (2018)		X		
Enger and Andershed (2018)		X		
Goulding *et al.* (2015)	X			X
Halvorson *et al.* (2016)	X			
Hoffman *et al.* (2017)		X		
Häggström *et al.* (2013)	X			
Häggström *et al.* (2014)	X			
James *et al.* (2013)	X		X	
Kauppi *et al.* (2018)	X	X		
Kowitlawakul *et al.* (2015)	X			
Lee *et al.* (2019)			X	
Manente *et al.* (2017)				
McBeth *et al.* (2017)				
McKenzie *et al.* (2017)		X		
Parenmark *et al.* (2019)				
Peet *et al.* (2019)	X			X
Pottenger *et al.* (2016)		X		
Sheth *et al.* (2016)	X			
Stelfox *et al.* (2016)		X		
Uhm *et al.* (2018)	X			
van Sluisveld *et al.* (2017)	X	X		

Table 3.
Structured categorization matrix for organizational culture, team collaboration, system view and sustainability

Author (year)	Methodologies and tools
Alali *et al.* (2019)	PDSA, Six Sigma, DMAIC, Lean, control chart, process map, checklist, root cause analysis
Bergs *et al.* (2018)	Normalization Process Theory (NPT), AI and 4 D, boxplots
Boyd *et al.* (2018)	Checklist, tool
Brown *et al.* (2018)	Bar chart, tool
Bunkenborg *et al.* (2017)	
Cognet and Coyer (2014)	
de Grood *et al.* (2018)	Checklist, tool
Enger and Andershed (2018)	
Goulding *et al.* (2015)	King's Improvement Science (KIS), PDSA, patient storytelling, run chart, Hawthorne effect, process mapping, SQUIRE
Halvorson *et al.* (2016)	Checklist, Lean, waste, root cause analysis
Hoffman *et al.* (2017)	Ishikawa diagram, visual aid, protocol
Häggström *et al.* (2013)	
Häggström *et al.* (2014)	
James *et al.* (2013)	
Kauppi *et al.* (2018)	
Kowitlawakul *et al.* (2015)	Tools, checklists, Hawthorne effect
Lee *et al.* (2019)	
Manente *et al.* (2017)	Pamphlet
McBeth *et al.* (2017)	
McKenzie *et al.* (2017)	
Parenmark *et al.* (2019)	Visualization of data (in diagrams) at a public website for the co-workers in their daily work.
Peet *et al.* (2019)	
Pottenger *et al.* (2016)	
Sheth *et al.* (2016)	Statistical process control chart, handover protocol
Stelfox *et al.* (2016)	
Uhm *et al.* (2018)	Handover protocol/checklist/tool
van Sluisveld *et al.* (2017)	Checklist, tool

Table 4.
Structured categorization matrix for the methodologies and tools

QM core values within ICU transitional care

Extracted data from the included articles were placed into the QM core values matrix (Table 2). The results from Table 2 are described more in detail in the following sections.

Focus on customers. The ICU transitional care process has both external and internal customers. The external customers are the patients and their families. A facilitator of high quality in ICU transfers is patient- and family-centered care (de Grood *et al.*, 2018). This includes preparedness for transfer with relatives considered, along with the information needs of the family (Cognet and Coyer, 2014; Manente *et al.*, 2017) and ensuring that the relatives feel they are a part of the patient's care (Häggström *et al.*, 2014).

In an interview study with ward nurses, Kauppi *et al.* (2018) described that the nurses found it difficult to feel proud because they could not satisfactorily meet the needs of the patients and their families. Not being able to provide good care for all patients causes nurses to feel stress, uncertainty and frustration (Enger and Andershed, 2018; Kauppi *et al.*, 2018).

Uhm *et al.* (2018) included an internal customer perspective in their study on developing a standardized inter-department handover protocol for improving perceptions of handover among general ward nurses, as well as handover performance.

Committed leadership. In a mixed-methods study by van Sluisveld *et al.* (2017), they found that improving the ICU discharge deserves more attention from management. Kauppi *et al.* (2018) described that nurses did not feel that the hospital management understood the

conditions in the general wards and that they thought more about staff numbers than about competence (Enger and Andershed, 2018). To direct the process and keep on track, it is necessary to have official management support through approved policies, memos or guidelines (Alali *et al.*, 2019). Hoffman *et al.* (2017) concluded that the role of effective leadership and senior level support in ICU transitional care could not be underestimated.

Let everybody be committed. Let everybody be committed is about facilitating all employees to be involved in and actively able to influence decisions and participate in improvements. Facilitating discussions to reach agreement on shared goals among ICU and general ward nurses and to establish mutual knowledge of the other part is necessary for improving patient safety (Bunkenborg *et al.*, 2017). Bunkenborg *et al.* further concluded that problems can appear if nurses are communicating without shared knowledge and collaborating based on their own personal perceptions and previous experience. This is similar with the findings from the study by Cognet and Coyer (2014), where there were misunderstood differences in the prioritization and care of patients between different clinical areas and a need for a streamlined approach to discharge planning.

Early involvement of stakeholders is important (Halvorson *et al.*, 2016; Parenmark *et al.*, 2019) and involving families of patients can be one way of managing the consensus of diverse stakeholder groups when prioritizing quality improvement suggestions. In a study by McKenzie *et al.* (2017), nine individuals were selected, representing providers, decision makers and patients' families from ICUs within a single geographically defined healthcare system, forming a panel for assessing and reconciling priorities for improving the care of critically ill patients.

Improve continuously. Improve continuously is about constantly improving what an organization do, and plan-do-study-act (PDSA) is a model for continuous improvement often used in QM. In a study by Goulding *et al.* (2015), a collaborative evidence-based quality improvement project was undertaken with the aim of improving the quality of critical care discharge summaries. The PDSA methodology was used.

Stelfox *et al.* (2016) recommended that hospitals evaluate the effectiveness of their programs and consider alternative strategies to address the multidimensional challenges of ICU discharge.

In a 10-year study of an intensive care quality improvement project, Parenmark *et al.* (2019) described how the Swedish Intensive Care Registry choose to release frequently updated performance data on a public dynamic web page in addition to supporting ICUs in their efforts to improve care quality.

Focus on processes. The discharge from the ICU to the general ward is often described in the literature as a process. For example, in an exploratory descriptive study by James *et al.* (2013), both ICU and ward nurses were asked about their perception and experience of the ICU to ward discharge process. This study demonstrated that there were differing perspectives among the departments, but that the ability to sufficiently plan for the transfer was crucial for both sets of participants. For both "sides of the fence," the discharge process is to a certain degree "out of their control" (p. 303). As the process extends over several hospital units, this becomes a major challenge in regard to creating continuity of care. One way of breaking down silos as described by McBeth *et al.* (2017) is huddles. Huddles have the potential to improve relationships and the sense of community within the studied hospital. Another way of bridging the gap between the units is to establish a process and a liaison to guide and educate patients and families on what to expect during transition and how to address the transitional concerns of patients and families (Manente *et al.*, 2017).

Standardizing the patient transfer process is often discussed as a way of improving the patient transfer process (Alali *et al.*, 2019; Halvorson *et al.*, 2016). Lee *et al.* (2019) presented a

queuing network model to study patient transitions. Understanding the complete patient flow throughout the hospital is crucial for hospital administrators to predict the expected demand and plan resources appropriately.

Base decisions on facts. Decisions should be based on facts. In the ICU transitional care process, this means that decisions about discharge should be based on relevant information about the patients and process and that all decisions should be made in the same way. Making decisions about when a patient is ready for ICU discharge is crucial. van Sluisveld *et al.* (2017) addressed that there are differences among ICU physicians when considering a patient ready for ICU discharge, because there are no specific ICU discharge criteria. In addition to specific ICU discharge criteria, it is important to ensure that essential information is up-to-date at the time of transfer (de Grood *et al.*, 2018).

Measuring the process and following trends and important key performance indicators are important for decision-making. Goulding *et al.* (2015) described how a quality improvement project could monitor and understand trends using run-charts. For example, they examined whether the quality of discharge summaries dipped when new staff began working in critical care and how long it took for the discharge summaries to meet the required standard. A key lesson learned from the project was the need for regular measurement. In the study by Hoffman *et al.* (2017), statistical process control charts were used to monitor the rates of readmission within 72 h. Other measures in the process were mortality within 14 days of ICU discharge (Stelfox *et al.*, 2016), wait time, department utilization and the probability of full occupancy (Lee *et al.*, 2019).

Other QM aspects within ICU transitional care

Additional categories with a focus on QM that were identified in the content analysis included Organizational Culture, Team Collaboration, System Thinking and Sustainability (Table 3). These categories are described in more detail in the following sections.

Organizational culture. In the study by Cognet and Coyer (2014), the nursing handover of critically ill patients in the ward setting was perceived to be inadequate by the participants. This was represented in the analysis by the core category "two worlds" (p. 296). Häggström *et al.* (2013) described that the ICU culture caused co-workers to continue to use technology for too long. There seemed to be a risk of being affected by cultural and contextual aspects when deciding what was best for the patient. Citations from the study by James *et al.* (2013) reflected the differences in the perceptions and practices of ICU nurses and ward nurses, which also revealed cultural differences. The ward nurses felt that the ICU nurses did not listen to them at handover times and were unfriendly. This provoked feelings of anxiety when they knew they were receiving a patient back from the ICU.

> Some nurses on the wards have an attitude to ICU nurses, almost trying to catch out the ICU nurse if things are not done. (ICU nurse)

> It saves an awful lot of time if the patient arrives with ward charts. The ICU charts are alien to the staff and maybe an avoidable risk factor. (Ward nurse) (James *et al.*, 2013, pp. 301-302)

Team collaboration. Hoffman *et al.* (2017) concluded that the role of team work in ICU transitional care cannot be underestimated. Using quality improvement methodology to develop and implement a multidisciplinary ICU transfer process and a visual aid resulted in improved communication and care coordination, which in turn altered the reasons for readmission.

One of the most frequently reported opportunities for improvement included collaboration between units (Boyd *et al.*, 2018). de Grood *et al.* (2018) concluded that

multiprofessional team huddles with ICU and hospital ward teams and handoff at bedside are suggestions to improve transfers from ICU to general ward. In addition, Alali *et al.* (2019) emphasized active involvement of the entire team when discharging patients, but that more exploration was needed. In a study by Pottenger *et al.* (2016), the authors concluded that Comprehensive Unit-based Safety Program teams might improve patient safety, performance on external measures, patient experience, and value.

System thinking. From a systems perspective, Bergs *et al.* (2018) learned that the road to improved quality during intrahospital nursing handover is long and has various obstacles. System theory implies that influencing such a complex system need a hospital-wide approach that includes not only improvement projects within a single department but also involves nurses from both the sending and receiving nursing units (ibid.).

Other research within ICU transitional care also defines this context as a system, where different parts in the system are working together. The results from the study by James *et al.* (2013) showed that some of the ICU respondents felt that the two sides, ICU and ward, should work together and not as separate entities. To solve problems such as, for example, hospital overcrowding, an integrated system where one unit's capacity affects that of the other units should be considered (Lee *et al.*, 2019). In this study, system properties were investigated to seek effective ways of reducing system delays; variabilities in the system were also studied. A project by Alali *et al.* (2019) led to positive impacts system wide, reflected by the length of stay and costs. Enger and Andershed (2018) called one subcategory in their study "a system that makes things difficult" (p. e190). Nurses and physicians working with transferring patients described the system as challenging, referring to management, the availability of physicians and nurses and bed capacity (ibid.).

Sustainability. Sustainability has become more and more important in recent years. Goulding *et al.* (2015) highlighted the challenge in developing organizational memory and the need to work towards continuous improvement rather than conducting a project that has a defined end. Peet *et al.* (2019) considered the hidden impact of dominant ideologies and control on nursing practices and patient safety, concluding that recognizing and actively challenging these influences can lead to sustained practice changes that are in harmony with the practitioner's values.

QM methodologies and tools used in ICU transitional care

The QM methodologies and tools used in the included articles are presented in Table 4 and described more in detail in the following sections.

QM methodologies, QM tools and other tools. Six Sigma, Lean and Process mapping are examples of the methodologies identified in the reviewed articles (Alali *et al.*, 2019; Goulding *et al.*, 2015; Halvorson *et al.*, 2016). Those articles described working on reducing delays, improving discharge summaries and standardizing patient transitions.

The study by Bergs *et al.* (2018) was conducted with an Appreciative Inquiry (AI) approach and the participants were asked to share their "best past stories" and "dreams" about new possibilities for patient handover.

PDSA, Ishikawa diagrams, root cause analyses and control charts are examples of tools described and used for improving ICU transitional care (Alali *et al.*, 2019; Halvorson *et al.*, 2016; Hoffman *et al.*, 2017; Goulding *et al.*, 2015; Sheth *et al.*, 2016).

Several of the reviewed articles mentioned that the co-workers either were using tools or that there was a need for strategies, standardization and structuring of information within the ICU transitional care process. Boyd *et al.* (2018) indicated that the lack of consistency in the structure and content of ICU transfer tools highlights the need for the development of an evidence-informed ICU transfer tool. Both de Grood *et al.* (2018) and Brown *et al.* (2018)

suggested implementing a standardized discharge communication tool to ensure the continuity of communication between providers and patients or their families. van Sluisveld *et al.* (2017) also concluded that there is room for improving the communication between the ICU and general ward and that a checklist to structure verbal handover would be useful including specific discharge criteria. In a study by Kowitlawakul *et al.* (2015), the results showed that 52.2% of doctors and nurses together used checklists during handovers.

Discussion and analysis

The aim of this systematic literature review was to explore to what extent QM and nursing science offer complementary perspectives to provide better quality care, by looking at QM core concepts and tools. The major findings indicate that QM core values, methodologies and tools are often applied within ICU transitional care, both to improve the process and to create a nurturing culture. This is in line with earlier research, for example, by Dahlgaard *et al.* (2011), who concluded that QM as a set of values, methods and tools can be very useful in the health care sector.

Analysing the included articles in a deductive way using the QM core values as an analytical framework was not easy, as the extracted data could be placed within one or more of the core value categories. This indicates that the QM core values may be dependent of one another and seen as a whole might be crucial. According to Dahlgaard *et al.* (2011), quality improvements in hospitals need a holistic and profound understanding but also a systematic and well-planned process. In QM, a system approach to management is fundamental to an organization's effectiveness and efficiency for achieving its goals (Dale *et al.*, 2007). This includes identifying, understanding and managing interrelated processes as a system. In several of the included articles, a need to view the ICU transitional care process as a system was reported (James *et al.*, 2013; Bergs *et al.*, 2018; Lee *et al.*, 2019).

Another finding was that the most common core values found in the analysis were focusing on the customers and focusing on processes. This indicates that researchers within ICU transitional care found the customers and the process itself as the most important parts when researching ICU transitional care. Committed leadership was the core value that was written about the least among the reviewed articles. This seems to be interesting as committed leadership is a foundation of QM and the basis for the other core values within QM. According to Ingelsson (2013), leadership and managers' own actions and presence among co-workers have a big impact on building a QM culture. In another study by Ingelsson *et al.* (2018), systematically talking about and working with values and leadership affected the culture in the studied organization. The authors recommended that leaders within organizations incorporate quality practices related to QM values if they want to increase the health of their co-workers. This is also in line with a study by Lagrosen *et al.* (2012), where the results showed that two of three dimensions elaborated from the QM core value "committed leadership" were correlated with the perception of employees' health. Leotsakos *et al.* (2014) deem that leadership is necessary for improving and managing quality and safety in health-care and earlier research in ICU transitional care show that there is a culture gap between ICU and general wards and that nurses struggle with this (Enger and Andershed, 2018; Häggström *et al.*, 2009). Hence, leaders must take responsibility in organizations for encouraging and building a collaborative environment and a culture that improves ICU transitional care (Häggström *et al.*, 2009). Improving the ICU discharge process deserves more attention from management (van Sluisveld *et al.*, 2017) and a deeper understanding of the conditions in the wards is needed (Kauppi *et al.*, 2018). According to Alali *et al.* (2019), it is necessary to have official management support through approved policies or guidelines when directing the process and keeping on track. Therefore, it was

slightly surprising that the core value "committed leadership" did not get more attention in the reviewed articles.

QM is about improving what an organization does, and sustainability is embedded within this concept. Striving for quality and performance requires sustainability. Therefore, there is a need for a long-term view when creating a QM culture and working with continuous improvements. Goulding *et al.* (2015) highlighted the challenges in developing organizational memory and the need to work towards continuous improvement. This requires sustainability.

The process of clinical handover should be understood as a complex interpersonal process (Bergs *et al.*, 2018). Working together in multidisciplinary teams is common in ICU transitional care. This interpersonal process involves multiple professional co-workers such as nurses, physicians, assistant nurses and physiotherapists. Creating a climate of mutual knowledge for each other and facilitating discussions for shared goals between organizational units is crucial when improving patient safety in ICU transitional care (Bunkenborg *et al.*, 2017). Problems often occur when those providers do not have the same aim or a mutual understanding and knowledge of each other's roles in the process. This is similar with previous research from Cullinane and Plowright (2013) suggesting that critical care nurses and ward nurses should work collaboratively in ensuring that patients are prepared for transfer to wards. Successful transitions require a high degree of collaboration and team work with all stakeholders (Tregunno, 2013; Hoffman *et al.*, 2017). Developing a culture of collaboration and coordination requires a commitment to engage in shared learning and dialogue, especially in high risk areas such as ICUs (Kydona *et al.*, 2010). In TQM, team work is one of the key features of involvement and, when gaining the commitment and participation of people throughout the organization (Dale *et al.*, 2007). QM requires co-worker involvement and teambuilding to succeed (Dahlgaard *et al.*, 2011).

The included articles have different research designs, originate from different countries and are published in a time span of 5 years. Despite the differences, the extracted and analysed data were experienced as similar by the authors. This might strengthen the trustworthiness of this literature review.

Conclusions and implications
This systematic literature review aimed to explore to what extent QM and nursing science can offer complementary perspectives to provide higher quality care, by looking at QM core concepts and tools. The QM core values were found in the reviewed articles about ICU transitional care, something that was made easier due to the fact that the core competencies in nursing science have similarities with the core values in QM. However, it was challenging in some of the articles to distinguish the different core values from each other as some of the extracted data could be placed in more than one category. This indicates that core values in QM and the core competencies within nursing science in ICU transitional care are mutually dependent upon each other and exist as a whole.

The core value committed leadership was found the least often in the reviewed articles. This is notable since committed leadership is the basis for the other core values, indicating that more research is needed on how committed leadership can strengthen the organizational culture in order to enhance the ICU transitional care process.

ICU transitional care is a complex interpersonal process, characterized by differences in organizational cultures and core values and involving multidisciplinary teams that collaborate across hospital units. Different QM methodologies and tools for structuring and standardizing patient transfer data were used in the reviewed articles. Thus, QM is a system that could be applied in ICU transitional care to increase care quality and patient safety.

QM and nursing science can together offer complementary perspectives and contribute to a deeper understanding of how to improve the ICU transitional care process by taking advantage of the strengths of the both research fields. This review might have contributed to raise the awareness of how QM core concepts and tools are practically used in ICU transitional care in order to provide better quality care and patient safety.

Future research opportunities
Opportunities for future research include focusing on enhancing the understanding of how the two research fields, namely, QM and nursing science, can bring complementary perspectives in order to improve ICU transitional care. Other interesting areas to study might be how the core value "committed leadership" can strengthen the organizational culture and team collaboration in order to enhance high care quality and patient safety in the ICU transitional care and how QM values, methodologies and tools can be used in ICU transitional care.

Within the current research project, suggestions for improvements from the employees in the ICU transitional care process are being analyzed and planning for implementation of improvements will start. This might generate further insights in how quality can be improved in ICU transitional care.

References

Alali, H., Kazzaz, Y., Alshehri, A., Antar, M., Alhamouieh, O., Hasan, Z. and Al-Surimi, K. (2019), "Reducing unnecessary delays during the transfer of patients from the paediatric intensive care unit to the general ward: a quality improvement project", *BMJ Open Quality*, Vol. 8 No. 3, p. e000695.

Åslund, A., Eriksson, M. and Bäckström, I. (2019), "A complementary quality management value to support sustainable development", Conference paper presented at QMOD at the 22nd QMOD-ICQSS Conference, 13-15 October, Krakow, Polen.

Bergman, B. and Klefsjö, B. (2010), *Quality: From Customer Needs to Customer Satisfaction*, 3rd edition, Studentlitteratur, Lund.

Bergs, J., Lambrechts, F., Mulleneers, I., Lenaerts, K., Hauquier, C., Proesmans, G., Creemers, S. and Vandijck, D. (2018), "A tailored intervention to improving the quality of intrahospital nursing handover", *International Emergency Nursing*, Vol. 36, pp. 7-15.

Bicheno, J. (2008), *The Lean Toolbox for Service Systems*, Picsie Books: Buckingham.

Boyd, J.M., Roberts, D.J., Parsons Leigh, J. and Stelfox, H.T. (2018), "Administrator perspectives on ICU-to-Ward transfers and content contained in existing transfer tools: a cross-sectional survey", *Journal of General Internal Medicine*, Vol. 33 No. 10, pp. 1738-1745.

Brown, K.N., Leigh, J.P., Kamran, H., Bagshaw, S.M., Fowler, R.A., Dodek, P.M., Turgeon, A.F., Forster, A.J., Lamontagne, F., Soo, A. and Stelfox, H.T. (2018), "Transfers from intensive care unit to hospital ward: a multicentre textual analysis of physician progress notes", *Critical Care*, Vol. 22 No. 1, pp. 1-8.

Bunkenborg, G., Hansen, T.B. and Holge-Hazelton, B. (2017), "Handing over patients from the ICU to the general ward: a focused ethnographical study of nurses' communication practice", *Journal of Advanced Nursing*, Vol. 73 No. 12, pp. 3090-3101.

Chaboyer, W., James, H. and Kendall, M. (2005), "Transitional care after the intensive care unit: current trends and future directions", *Critical Care Nurse*, Vol. 25 No. 3, pp. 16-26.

Cognet, S. and Coyer, F. (2014), "Discharge practices for the intensive care patient: a qualitative exploration in the general ward setting", *Intensive and Critical Care Nursing*, Vol. 30 No. 5, pp. 292-300.

Cooperrider, D.L. (2005), *Appreciative Inquiry: A Positive Revolution in Change*, Berrett-Koehler, San Francisco, CA.

Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., Sullivan, D., Taylor, D. and Warren, J. (2007), "Quality and safety education for nurses", *Nursing Outlook*, Vol. 55 No. 3, pp. 122-131.

Cullinane, J.P. and Plowright, C.I. (2013), "Patients' and relatives' experiences of transfer from intensive care unit to wards", *Nursing in Critical Care*, Vol. 18 No. 6, pp. 289-296.

Dahlgaard, J.J., Pettersen, J. and Dahlgaard-Park, S.M. (2011), "Quality and lean health care: a system for assessing and improving the health of healthcare organisations", *Total Quality Management and Business Excellence*, Vol. 22 No. 6, pp. 673-689.

Dahlgaard-Park, S.M. (2012), "Core values - the entrance to human satisfaction and commitment", *Total Quality Management and Business Excellence*, Vol. 23 No. 2, pp. 125-140.

Dale, B.G., Wiele, T. V D. and Iwaarden, J.V. (2007), *Managing Quality*, Blackwell, Oxford.

de Grood, C., Leigh, J.P., Bagshaw, S.M., Dodek, P.M., Fowler, R.A., Forster, A.J., Boyd, J.M. and Stelfox, H.T. (2018), "Patient, family and provider experiences with transfers from intensive care unit to hospital ward: a multicentre qualitative study", *Canadian Medical Association Journal*, Vol. 190 No. 22, p. E669.

Deming, W.E. (1994), *The New Economics for Industry, Government, Education*, Cambridge, Mass.

Elo, S. and Kyngäs, H. (2008), "The qualitative content analysis process", *Journal of Advanced Nursing*, Vol. 62 No. 1, pp. 107-115.

Enger, R. and Andershed, B. (2018), "Nurses' experience of the transfer of ICU patients to general wards: a great responsibility and a huge challenge", *Journal of Clinical Nursing*, Vol. 27 Nos 1/2, pp. e186-e194.

Gantner, D., Farley, K.J., Bailey, M., Huckson, S., Hicks, P. and Pilcher, D. (2014), "Mortality related to after-hours discharge from intensive care in Australia and New Zealand, 2005-2012", *Intensive Care Medicine*, Vol. 40 No. 10, pp. 1528-1535.

Goulding, L., Parke, H., Maharaj, R., Loveridge, R., McLoone, A., Hadfield, S., Helme, E., Hopkins, P. and Sandall, J. (2015), "Improving critical care discharge summaries: a collaborative quality improvement project using PDSA", *BMJ Quality Improvement Reports*, Vol. 4 No. 1, pp. 1-8.

Häggström, M. and Bäckström, B. (2014), "Organizing safe transitions from intensive care", *Nursing Research and Practice*, Vol. 2014, pp. 1-11.

Häggström, M., Asplund, K. and Kristiansen, L. (2009), "Struggle with a gap between intensive care units and general wards", *International Journal of Qualitative Studies on Health and Well-Being*, Vol. 4 No. 3, pp. 181-192.

Häggström, M., Asplund, K. and Kristiansen, L. (2013), "To reduce technology prior discharge from intensive care–important but difficult? A grounded theory", *Scandinavian Journal of Caring Sciences*, Vol. 27 No. 3, pp. 506-515.

Häggström, M., Asplund, K. and Kristiansen, L. (2014), "Important quality aspects in the transfer process", *International Journal of Health Care Quality Assurance*, Vol. 27 No. 2, pp. 123-139.

Halvorson, S., Wheeler, B., Willis, M., Watters, J., Eastman, J., O'Donnell, R. and Merkel, M. (2016), "A multidisciplinary initiative to standardize intensive care to acute care transitions", *International Journal for Quality in Health Care*, Vol. 28 No. 5, pp. 615-625.

Henri, J.-F. (2006), "Organizational culture and performance measurement systems", *Accounting, Organizations and Society*, Vol. 31 No. 1, pp. 77-103.

Hoffman, R.L., Saucier, J., Dasani, S., Collins, T., Holena, D.N., Fitzpatrick, M., Tsypenyuk, B. and Martin, N.D. (2017), "Development and implementation of a risk identification tool to facilitate critical care transitions for high-risk surgical patients", *International Journal for Quality in Health Care*, Vol. 29 No. 3, pp. 412-419.

Ingelsson, P. (2013), "Creating a quality management culture: focusing on values and leadership", Doctoral thesis, Department of Engineering and Sustainable Development, Mid Sweden University, Östersund.

Ingelsson, P., Bäckström, I. and Snyder, K. (2018), "Strengthening quality culture in private sector and health care: what can we learn from applying soft measures?", *Leadership in Health Services*, Vol. 31 No. 3, pp. 276-292.

Jackson, M.C. (2003), *System Thinking Creative Holism for Managers*, John Wiley and Sons, West Sussex.

James, S., Quirke, S. and McBride-Henry, K. (2013), "Staff perception of patient discharge from ICU to ward-based care", *Nursing in Critical Care*, Vol. 18 No. 6, pp. 297-306.

Juran, M. (1974), *Quality Control Handbook*, Third edition, McGraw-Hill, New York, NY.

Kauppi, W., Proos, M. and Olausson, S. (2018), "Ward nurses' experiences of the discharge process between intensive care unit and general ward", *Nursing in Critical Care*, Vol. 23 No. 3, pp. 127-133.

Kowitlawakul, Y., Leong, B.S.H., Lua, A., Aroos, R., Wong, J.J., Koh, N., Goh, N., See, K.C., Phua, J. and Mukhopadhyay, A. (2015), "Observation of handover process in an intensive care unit (ICU): barriers and quality improvement strategy", *International Journal for Quality in Health Care*, Vol. 27 No. 2, pp. 99-104.

Kramer, A.A., Higgins, L.T. and Zimmerman, E.J. (2013), "The association between ICU readmission rate and patient outcomes*", *Critical Care Medicine*, Vol. 41 No. 1, pp. 24-33.

Kydona, C.K., Malamis, G., Giasnetsova, T., Tsiora, V. and Gritsi-Gerogianni, N. (2010), "The level of teamwork as an index of quality in ICU performance", *Hippokratia*, Vol. 14 No. 2, pp. 94-97.

Lagrosen, Y., Bäckström, I. and Wiklund, H. (2012), "Approach for measuring health-related quality management", *The TQM Journal*, Vol. 24 No. 1, pp. 59-71.

Lee, H.K., Musa, A.J., Bain, P.A., Nelson, K., Baker, C. and Li, J. (2019), "A queueing network model for analysis of patient transitions within hospitals", *IEEE Transactions on Automation Science and Engineering*, Vol. 16 No. 1, pp. 6-20.

Leotsakos, A., Petsanis, K., Zhao, H., Moss, R. and Monina, N. (2014), *"Leadership Competencies Framework on Patient Safety and Quality of Care" (DRAFT)*, © World Health Organization, WHO, Geneva, Switzerland.

Li, P., Boyd, J.M., Ghali, W.A. and Stelfox, H.T. (2015), "Stakeholder views regarding patient discharge from intensive care: suboptimal quality and opportunities for improvement", *Canadian Respiratory Journal*, Vol. 22 No. 2, pp. 109-118.

Lin, F., Chaboyer, W., Wallis, M. and Miller, A. (2013), "Factors contributing to the process of intensive care patient discharge: an ethnographic study informed by activity theory", *International Journal of Nursing Studies*, Vol. 50 No. 8, pp. 1054-1066.

McBeth, C.L., Durbin-Johnson, B. and Siegel, E.O. (2017), "Interprofessional huddle: one children's hospital's approach to improving patient flow", *Pediatric Nursing*, Vol. 43 No. 2, pp. 71-76.

McKenzie, E., Potestio, M.L., Boyd, J.M., Niven, D.J., Brundin-Mather, R., Bagshaw, S.M. and Stelfox, H.T. (2017), "Reconciling patient and provider priorities for improving the care of critically ill patients: a consensus method and qualitative analysis of decision making", *Health Expectations*, Vol. 20 No. 6, pp. 1367-1374.

Manente, L., McCluskey, T. and Shaw, R. (2017), "Transitioning patients from the intensive care unit to the general pediatric unit: a piece of the puzzle in family-centered care", *Pediatric Nursing*, Vol. 43 No. 2, pp. 77-82 and 95.

Parenmark, F., Karlstrom, G., Nolin, T., Fredrikson, M. and Walther, S.M. (2019), "Reducing night-time discharge from intensive care. A nationwide improvement project with public display of ICU outcomes", *Journal of Critical Care*, Vol. 49, pp. 7-13.

Peet, J., Theobald, K. and Douglas, C. (2019), "Strengthening nursing surveillance in general wards: a practice development approach", *Journal of Clinical Nursing*, Vol. 28 Nos 15/16, pp. 2924-2933.

Polit, D.F. and Beck, C.T. (2017), *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, 10th Edition, Wolters Kluwer, Philadelphia.

Pottenger, B.C., Davis, R.O., Miller, J., Allen, L., Sawyer, M. and Pronovost, P.J. (2016), "Comprehensive unit-based safety program (CUSP) to improve patient experience: how a hospital enhanced care transitions and discharge processes", *Quality Management in Health Care*, Vol. 25 No. 4, pp. 197-202.

Schein, E.H. (2009), *The Corporate Culture Survival Guide*, Jossey-Bass, San Francisco, CA.

Schreier, M. (2012), *Qualitative Content Analysis in Practice*, SAGE, London.

Sheth, S., McCarthy, E., Kipps, A.K., Wood, M., Roth, S.J., Sharek, P.J. and Shin, A.Y. (2016), "Changes in efficiency and safety culture after integration of an I-PASS-Supported handoff process", *PEDIATRICS*, Vol. 137 No. 2, p. e20150166.

Stelfox, H., Bastos, J., Niven, D., Bagshaw, S., Turin, T. and Gao, S. (2016), "Critical care transition programs and the risk of readmission or death after discharge from ICU", *Intensive Care Medicine*, Vol. 42 No. 3, pp. 401-410.

Swedish Society of Nursing (2017), "Strategy for improving the quality of nursing", available at the internet: (retrieved 20200303): www.swenurse.se/globalassets/01-svensk-sjukskoterskeforening/engelska/strategy_for_improving_the_quality_of_nursing.pdf, ISBN: 978-91-85060-08-5.

Tranfield, D., Denyer, D. and Smart, P. (2003), "Towards a methodology for developing evidence-Informed management knowledge by means of systematic review", *British Journal of Management*, Vol. 14 No. 3, pp. 207-222.

Tregunno, D. (2013), "Know your client and know your team: a complexity inspired approach to understanding safe transitions in care", *Nursing Research and Practice*, Vol. 2013, pp. 1-8.

Uhm, J.Y., Lim, E.Y. and Hyeong, J. (2018), "The impact of a standardized inter-department handover on nurses' perceptions and performance in Republic of Korea", *Journal of Nursing Management*, Vol. 2018 No. 26, pp. 933-944.

van Sluisveld, N., Oerlemans, A., Westert, G., Gerardus van der Hoeven, J., Wollersheim, H., Zegers, M. and van der Hoeven, J.G. (2017), "Barriers and facilitators to improve safety and efficiency of the ICU discharge process: a mixed methods study", *BMC Health Services Research*, Vol. 17 No. 1, pp. 1-12.

Watkins, J. and Cooperrider, D. (2000), "Appreciative inquiry: a transformative paradigm", *OD Practioner*, Vol. 32 No. 1, pp. 6-12.

Whittaker, J. and Ball, C. (2000), "Discharge from intensive care: a view from the ward", *Intensive and Critical Care Nursing*, Vol. 16 No. 3, pp. 135-143.

Yin, R.K. (2014), *Case Study Research – Design and Methods*, 5th edition, SAGE Publications, London.

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