RESEARCH ARTICLE

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A guidance framework to aid in the selection of nursing and midwifery care process metrics and indicators

Fiona Murphy[1] | Owen Doody[1] | Rosemary Lyons[1] | Maria Brenner[2] |
Laserina O'Connor[3] | Andrew Hunter[4] | Declan Devane[4] | Duygu Sezgin[1,4] (ID)

[1]Department of Nursing and
Midwifery, University of Limerick, Limerick,
Ireland

[2]School of Nursing and Midwifery, Trinity
College Dublin, Dublin, Ireland

[3]School of Nursing, Midwifery and Health
Sciences, University College Dublin, Dublin,
Ireland

[4]Faculty of Medicine, Nursing and Health
Sciences, National University of Ireland
Galway, Galway, Ireland

Correspondence
Fiona Murphy, Department of Nursing
and Midwifery, University of Limerick,
Castletroy, Ireland.
Email: fiona.murphy@ul.ie

Present Address
Duygu Sezgin, Faculty of Medicine, Nursing
and Health Sciences, National University of
Ireland, Galway, Ireland

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Abstract

Aim: To describe the development of a guidance framework to assist nurses and midwives in selecting nursing and midwifery care process metrics and indicators for use in practice.

Background: Process metrics are measures of care provision activities by nurses and midwives.

Methods: Phase 1 was a rapid review assessment of the literature conducted to identify an initial framework. Six electronic databases were searched with Google Scholar and reference tracking performed. Phase 2 was expert review of the developing framework by nursing and midwifery experts in practice, academia and an international expert in quality care metrics.

Results: The literature assessment yielded 28 papers with 59 metric attributes identified. From this, a six-domain framework was developed. Following expert review, the framework was reduced to four domains: "Process Focused," "Important," "Operational" and "Feasible."

Conclusions: This is the first framework specifically to guide nurses and midwives in selecting nursing and midwifery process metrics and indicators.

KEYWORDS
nursing midwifery care process indicators, nursing midwifery care process metrics, quality indicators, selection framework

1 | INTRODUCTION

Nursing and midwifery metrics are standardized core minimum data sets comprising of metrics that are sensitive to nursing and midwifery activities and indicators, which facilitate metric measurement (Griffiths, Jones, Maben, & Murrells, 2008). For quality care, there should be connections between structure (factors in the care environment such as staffing levels), process (the direct care provided) and recipient outcomes (effects on health status; Donabedian,

2003). Process nursing and midwifery metrics relate to care provision activities by nurses and midwives and may encompass less tangible aspects such as interpersonal communication. Using nursing and midwifery metrics and indicators to measure these processes facilitates the identification and measurement of the nursing and midwifery contribution to high-quality care (Griffiths, 2009; Smith, Dewar, Pullin, & Tocher, 2010).

A national project conducted in the Republic of Ireland between 2016–2018 developed a suite of nursing and midwifery process metrics

and indicators. These were for six areas of nursing (acute services, public health nursing, mental health, children's services, older person services and intellectual disability nursing) and midwifery (Health Service Executive Ireland, 2018). The project used the Delphi technique to engage nurses and midwives nationally in the development of the metrics. Following four Delphi survey rounds, the endpoint of the project was a face-to-face consensus meeting of clinical and academic experts in each of the seven areas of nursing and midwifery practice. In these meetings, an expert group consisting of clinical managers, nurses, midwives and other stakeholders such as academics and service users met to decide and vote on the metrics and associated indicators to be included. To aid standardization across the seven areas of practice, guidance on selecting metrics and indicators was needed. However, an initial review of the literature found there was little specific guidance on how to select nursing and midwifery process metrics. In this paper, we report the development of a guidance framework to aid nurses and midwives to select nursing and midwifery quality care process metrics and indicators for use in practice settings.

2 | BACKGROUND

2.1 | Quality care metrics in nursing and midwifery practice

In contemporary nursing and midwifery, there is a need for high-quality information and measures to inform decision-making for safe, accountable practice. Healthcare metrics are summary measures of a system, which help understand, compare, predict and improve healthcare services (Pencheon, 2017). The term "metrics" originates from business and finance and was used to measure a company's success in achieving set targets (Cusack, Dempsey Ryan, Kavanagh, & Pitman, 2014). Metrics are measured by their associated indicators, which as the name suggest "indicate" or highlight areas of practice performance, which might meet, exceed or fall below expectations and standards (Pencheon, 2017). Metrics and indicators are useful at a practical level where standardized measurements of nursing and midwifery care allow individuals and organizations to identify, compare and benchmark standards and thus improve performance (Cusack et al., 2014). Metrics and indicators can be used as an early warning system to identify where practice has fallen below minimum standards and to highlight areas of excellence. Metrics can be presented on clinical dashboards which are visual frameworks displaying structured real-time information. This allows benchmarking against standards, which are used for further quality improvement (Gage, Heywood, & Norton, 2012; Royal College of Nursing, 2009,2012).

These perceived benefits of metrics are tempered by concerns as to whether nursing and midwifery care process metrics can adequately capture more abstract, yet vital components of care such as compassion and empathy (Maben, Morrow, Ball, Robert, & Griffiths, 2012). Additionally, nurses and midwives tend to work in multidisciplinary teams, and thus, it may be difficult to extract and measure the unique nursing and midwifery contribution (Smith, 2012). Furthermore, the area of nursing and midwifery metric and indicator development is characterized by a lack of standardized terminology with Heslop and

Lu (2014) identifying the diversity of what they call "surrogate terms." These include "indicators," "measures," "nursing/midwifery performance quality indicators," "indicators of quality" and "outcomes potentially sensitive to nursing/midwifery." In these surrogate terms, the distinction between structure, process and outcome is not always made and definitions are not always provided (Heslop & Lu, 2014). Adding to this ambiguity, the terms metric and indicator are often used interchangeably (Dubois, D'Amour, Pomey, Girard, & Brault, 2013; Foulkes, 2011; Yildiz & Demirors, 2014). Early metric development in nursing focused predominantly on outcome indicators such as patient falls with some attention paid to structure indicators such as staffing levels and skill mix. However, there has been less emphasis on process metrics for nursing and midwifery (Heslop & Lu, 2014).

To be useful for practice, metrics and indicators should be credible and acceptable to practitioners, the public and the wider healthcare system. "Good" metrics and indicators should be as evidence-based and technically sound as possible (Maben et al., 2012). They should be suited for their intended purpose, relevant, valid, reliable, feasible and beneficial in facilitating change (Campbell et al., 2011; Royal College of Nursing, 2009; Smith, 2012). For use in practice, they should be selected based on these attributes and then tested prior to implementation (Campbell et al., 2011). The use of a range of surrogate terms, the lack of differentiation between metrics and indicators and the decreased emphasis on process metrics presents challenges for nurses and midwives when trying to select process metrics and indicators to be used in practice. This is further compounded by the lack of specific guidance for nurses and midwives when selecting process metrics and indicators for use in practice.

3 | METHODS

3.1 | Design

There were two phases in the development of the guidance framework to select nursing and midwifery care process metrics. Phase 1 consisted of a rapid review assessment of the literature and the development of an initial framework. Phase 2 included expert review and discussions of the emerging framework (McMillan, King, & Tully, 2016). Revised Standards for Quality Improvement (SQUIRE 2.0) were followed for reporting of this process (SQUIRE, 2015). Research Ethics Committee approval was obtained from the University of Limerick Faculty of Education and Health Sciences Research Ethics Committee (Number: 2016_12_12_EHS).

3.2 | Phase 1: Reviewing the literature and initial framework identification

A rapid review assessment of the literature was conducted (Grant & Booth, 2009). This type of literature review identifies what is already known about an issue and uses systematic review methods throughout the process (Grant & Booth, 2009). The aim of the review was to identify from the literature what might be considered key attributes of metrics and indicators.

3.2.1 | Search strategy

A set of refined terms were used: #1 quality assurance criteria or quality assessment, #2 nursing metrics or indicators, #3 midwifery metrics or indicators and (#1 & #2) or (#1 & #3). This set of search terms was also used to hand search the literature. As identified earlier, the terms metric and indicator were used interchangeably; thus, attention was paid to differentiating and defining these terms. For the review, a quality care process metric was defined as a nursing and midwifery activity, related to how (or to what extent) nursing or midwifery care is being undertaken in relation to an agreed standard. A quality care process indicator was defined as a quantifiable measure that captures the activity that nurses and midwives undertake to provide that care in relation to a specific tool or method. It was also evident from the initial searches that there was very little literature that related specifically to the selection of nursing and midwifery process metrics and indicators. Consequently, search terms were widened to include "developing metrics," "judgement framework" and "judgement criteria" and included all disciplines, not just nursing and midwifery.

Six electronic databases were searched (Medical Literature Analysis and Retrieval System Online [MEDLINE], PsycINFO, Cumulative Index to Nursing/Midwifery and Allied Health Literature [CINAHL], Excerpta Medica Database [EMBASE], Applied Social Sciences Index and Abstracts [ASSIA] and the Cochrane Library). In addition, the search was conducted in Google Scholar and reference tracking performed to identify related publications and grey literature.

3.2.2 | Inclusion criteria

The inclusion criteria were as follows: (a) English language publications in the last 10 years with full-text available; (b) related to quality metrics or indicator development; and (c) related to nursing, midwifery and healthcare processes and process metrics or indicators.

3.2.3 | Critical appraisal and data extraction

Quality assessments of the included studies were conducted using the Crowe Critical Appraisal Tool (Crowe, 2013). A data extraction tool was devised to aid the researchers to extract the attributes' characteristic of "good" metrics and indicators. The five researchers were briefed on the use of the tool and the papers divided equally between the members of the research team for independent data extraction. This was then rechecked by a second member of the team. Each researcher then mapped their identified attribute onto a matrix, which was again verified by two team members re-reading the selected publications. Any conflicts were resolved through discussion within the team.
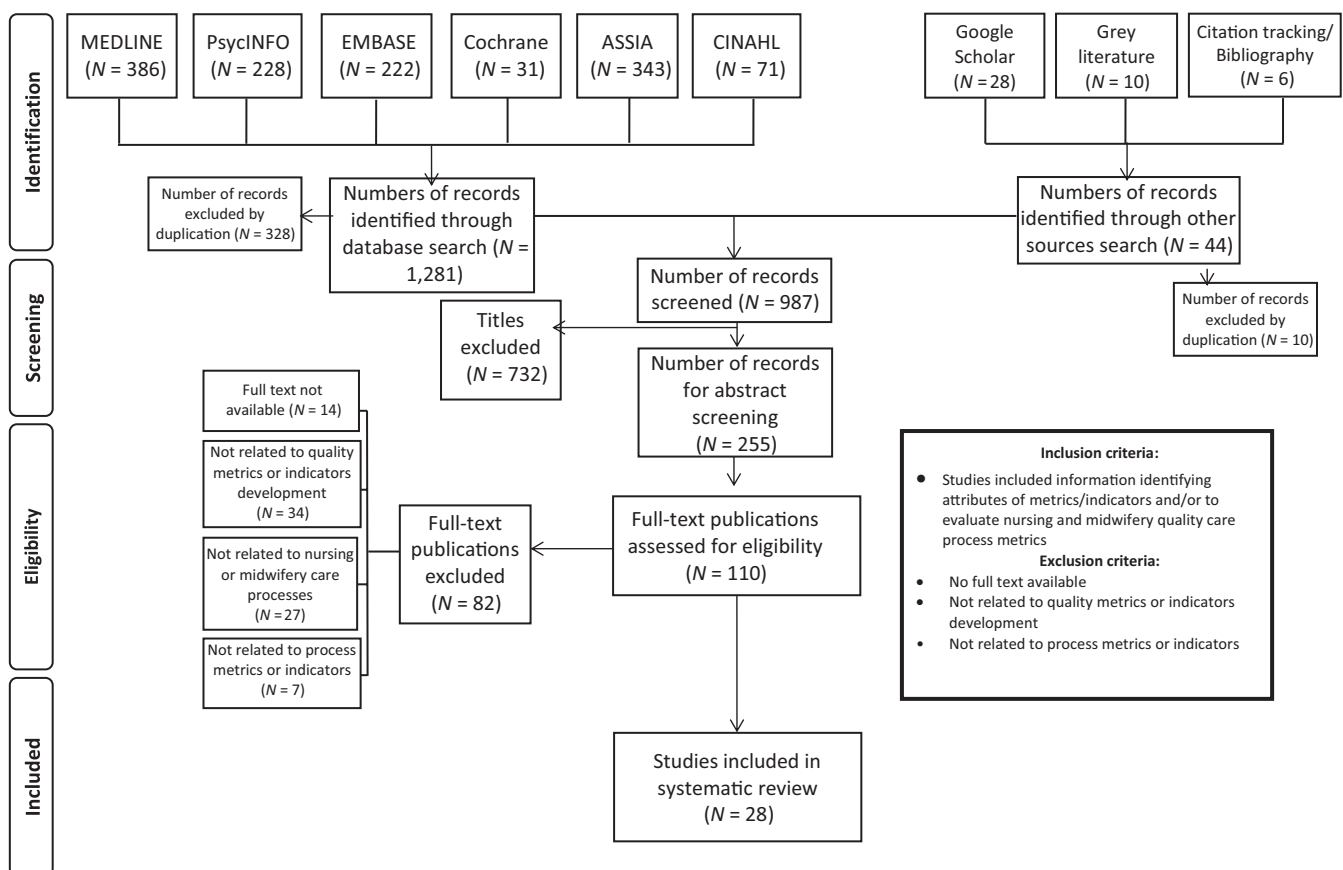
FIGURE 1 Nursing and midwifery process metrics selection framework literature review PRISMA flow diagram (Moher, Liberati, Tetzlaff, & Altman, 2009)

3.2.4 | Literature search findings

A total of 987 records were screened with 732 titles excluded. 255 abstracts were then screened with 110 full-text papers independently reviewed by the research group (Figure 1). 28 papers were then included in the final review (Supporting Information Appendix S1). As a result of these several rounds of paper review and data extraction, 59 attributes were identified (Table 1).

3.3 | Initial framework development

The 59 attributes were categorized into the six domains proposed by Campbell et al. (2011) in their Indicator Testing Protocol. Campbell et al. (2011) developed a protocol incorporating key attributes to aid in the assessment and adaptation of potential quality indicators in healthcare systems of different countries. The six domains in the protocol were consistent with the 59 attributes extracted from the international literature in phase 1. The six domains were as follows: "acceptability," "content validity," "clarity," "technical feasibility," "reliability of data extraction" and "implementation" (Table 2). The metric attributes under each domain were then modified with descriptor statements devised to reflect nursing and midwifery care processes.

3.4 | Phase 2: Expert review

In Phase 2, expert review methodology was used to develop expert input and consensus on a final version of the framework. The experts were selected to review the emerging framework based on their interest and involvement in the selection of quality care process metrics and indicators in their area of practice or research (Hasson, Keeney, & McKenna, 2000). To ensure homogeneous representation of valid expert opinions, nurses, midwives and academics from clinical nursing, intellectual disability nursing, acute nursing, older person services, paediatrics, mental health nursing and midwifery areas of practice and research and an international expert in quality care metrics participated. The review process was conducted by email and teleconferencing with participants being sent the frameworks for review and feedback prior to the teleconferences.

After the first teleconference, a suggestion was made to review the World Health Organization (WHO) eRegistries indicator evaluation tool for reproductive, maternal, newborn and child health interventions (Flenady et al., 2016). This indicator evaluation tool does not specifically relate to nursing or midwifery care process metrics and indicators. However, it includes both outcome and process indicators, is multidisciplinary and provided a succinct overview of some of the key criteria of metrics and indicators already identified from the literature and the Campbell et al. (2011) tool. The WHO tool consists of five domains: action focused, important, operational, feasible, and simple and valued (Table 3).

Although the modified Campbell et al. (2011) framework and the WHO tool captured the attributes identified from the literature review, they were not specifically developed for the selection of nursing and midwifery process metrics and indicators. Therefore, a

hybrid (version 1) of these two frameworks (Table 4) was prepared for the second round of expert review.

4 | RESULTS

Following the second round of expert review, a final framework was agreed (Table 5). Within the framework, the first domain is "process focused." The metrics and indicators under consideration should be clearly about nursing or midwifery care processes not structure or outcomes, and hence, the first domain specifically focuses on care processes.

The second domain of "importance" prompts nurses and midwives to consider whether to them the process metric and associated indicators would help them improve the care they give. The metric therefore should be acceptable, relevant and beneficial to practitioners, the service and clients. The metric should also be future-proofed as far as possible to ensure that future health needs are met.

The third domain, "operational," has two separate statements, one relating to metrics and one to indicators. The definition of a metric used was of a quantifiable measure that captures quality in terms of how or to what extent nursing and midwifery care is being done in relation to an agreed standard. The metric should be attributable to high-quality nursing or midwifery care and embedded in quality care standards and improvement. The metric should, if possible, have a sound evidence base in terms of research, practice and patient evidence. Therefore, the framework guides the nurse or midwife to identify whether there are quality standards for the metric. If there are not, could they be developed? The second component in this domain relates to the associated indicators for the metric and whether they could be measured in practice settings with a requirement for clear and precise indicator statements.

The final domain, "feasibility," relates to whether it is actually possible to collect data on both the metric and the indicator in practice settings. The metric and indicator statements must be clear, concise and measurable to allow standardized interpretations in collection and analysis of the data. Structural and organizational factors in implementing the metric and indicators into practice settings also need to be considered. Such factors will include the implications for staff training, education and monitoring. There may be the need to develop information systems to enable the capture, analysis and presentation of metric and indicator data.

This guidance framework was used at the seven individual consensus meetings to select nursing and midwifery process metrics and indicators in the National Quality Care-Metrics Project. The nurses and midwives discussed every metric and indicator presented to them and decided based on a yes or no vote whether the metric or indicator should be included in the final suite of process metrics for their area of practice. The framework aimed to facilitate rather than inhibit this process and therefore as well as capturing the attributes of "good" metrics and indicators it had to be user-friendly requiring minimum detailed explanation of how to use it.

TABLE 1 Attribute matrix

Publication \ Attribute	Acceptable/ applicable	Access to and coordination of health care	Accessible	Actionable	Accountable	Achievable	Appropriate	Attributable to nursing care quality	Beneficial	Bias minimum	Clear	Collectable	Consistent	Continuous quality improvement
Pastrana et al. (2010)								x						
Perera et al. (2012)	x		x					x			x		x	
Leemans et al. (2015)											x		x	
Martirosyan et al. (2008)								x						
Schnitker et al. (2015)	x													
Seow et al. (2009)	x										x			
Brunelli and Rocco (2007)														
Campbell et al. (2011)	x	x									x	x		
Albert and Das (2012)														
Mears et al. (2011)												x		
Groene et al. (2008)											x		x	
Levitt et al. (2014)														
Riain et al. (2015)											x			
Kröger et al. (2007)			x											x
Reiter et al. (2011)									x		x			
Tripathi (2016)			x								x	x	x	
Wollersheim (2007)	x		x								x	x	x	
Talungchit (2013)	x		x											
Smits (2016)														
Tripathi (2015)	x										x			
Sorensen et al. (2011)			x	x	x									
Stienen (2011)	x		x								x			
Stelfox (2013)	x		x								x			
Weston (2008)	x										x	x		
Maben et al. (2012)	x		x				x	x			x	x	x	
HIQA (2013)	x					x					x	x	x	
Strudwick et al. (2015)												x		
Woitha et al. (2014)	x									x	x			

Compre-hensive	Cur-rent	Deliverable or applicable	Deriv-able	Embedded in quality standards	Ef-ficient	Effec-tive	Equi-table	Fostering perfor-mance improve-ment	Gener-alizable	Has discrimi-native power	High-quality Care	In-nova-tive	Im-por-tant	Inter-pret-able	Integrated in quality and cost	Mean-ingful	Meas-urable
		x														x	x
					x	x	x				x					x	x
			x								x						x
											x						x
											x					x	x
											x		x				
x			x				x		x	x				x		x	
		x									x			x			
x	x									x	x						
			x		x	x											
						x											
													x				x
													x				x
					x	x			x								x
													x				
		x		x	x	x	x				x			x	x	x	x
		x		x	x	x	x				x			x	x	x	x
				x							x						x
				x							x						
											x						x
		x				x					x						
		x		x							x						x
		x		x							x						
		x		x			x							x	x	x	x
				x	x	x					x				x	x	x
		x		x	x	x	x				x			x	x	x	x
		X			x	x	x				x						x
									x	x		x				x	

TABLE 1 (Continued)

Publication\Attribute	Necessary	Patient centred	Precise in definition	Provide transparency	Related and integrated with theory	Related to patient outcomes	Related to practice	Relevant to providers	Relevance	Reliable/ valid	Resources and capacity
Pastrana et al. (2010)						x	x	x		x	
Perera et al. (2012)		x		x	x		x	x		x	x
Leemans et al. (2015)					x	x	x			x	
Martirosyan et al. (2008)		x								x	
Schnitker et al. (2015)					x	x	x	x		x	
Seow et al. (2009)							x				
Brunelli and Rocco (2007)			x			x	x	x	x	x	
Campbell et al. (2011)			x			x	x	x	x	x	
Albert and Das (2012)										x	
Mears et al. (2011)		x									
Groene et al. (2008)		x								x	
Levitt et al. (2014)										x	
Riain et al. (2015)										x	
Kröger et al. (2007)		x					x				
Reiter et al. (2011)									x	x	
Tripathi (2016)		x			x	x	x	x		x	x
Wollersheim (2007)			x	x	x	x	x	x		x	
Talungchit (2013)					x		x	x		x	
Smits (2016)					x	x				x	
Tripathi (2015)		x				x				x	x
Sorensen et al. (2011)						x	x	x		x	
Stienen (2011)				x		x	x	x			
Stelfox (2013)		x	x	x	x	x	x	x		x	x
Weston (2008)		x	x		x	x	x	x			x
Maben et al. (2012)		x		x	x	x	x	x			x
HIQA (2013)		x	x	x		x	x	x		x	x
Strudwick et al. (2015)		x	x		x	x	x	x		x	
Woitha et al. (2014)	x						x	x		x	

5 | DISCUSSION

The value of nursing and midwifery process metrics lies in them having the potential to measure fundamental nursing and midwifery care processes and identify where care is falling below required standards to enable improvements and adjustments to care provision. The active engagement of clinical nurses and midwives in the development and selection of process metrics is therefore pivotal to the quality and safety agenda. To the authors' knowledge, this is the first guidance framework for the selection of nursing and midwifery care process metrics and indicators. The development and use of such a tool is important in continuing the identification

Responsive	Rigour to indicator construction	Robust	Safe	Scientifically sound or evidence-based	Sensitive/ specific	Standard	Stakeholder involved	Technically feasible	Tech support	Timeliness/ time specific	Trans-able	Use-able	Unintended adverse consequences	Utilization	Value added
				x	x			x		x					
x		x	x	x	x			x				x			
x		x		x				x				x			
		x		x	x			x				x			
x	x	x	x	x	x			x				x			
				x			x	x				x			
				x	x										
				x	x			x					x		
				x				x							
			x												
				x	x										
						x									x
			x	x				x							
				x	x			x							
x	x		x	x	x			x	x	x	x	x		x	
		x		x				x				x		x	
x	x			x	x			x							
x	x			x				x							
		x									x	x			
				x				x		x					
	x			x								x		x	
x				x											
				x				x							
			x	x								x		x	
x	x	x	x	x	x			x		x	x	x		x	
	x			x						x		x		x	
						x	x					x		x	

and measurement of nursing and midwifery processes (Allen, 2015; Fulton, 2013; Kerkin, Lennox, & Patterson, 2018).

The challenge identified in this paper was how to make an informed selection of which nursing and midwifery process metrics and indicators to use in practice. Although there was evidence in the literature of the key attributes of metrics and indicators in health care, there was none specific to the selection of nursing or midwifery process metrics and indicators. Since process metrics represent nursing and midwifery care activities, they can be useful guides to monitor, evaluate and improve quality of patient care processes that affect patient outcomes (Mainz, 2003). Therefore, these metrics and indicators need to be selected using specific frameworks reflecting their contribution to care processes.

TABLE 2 Criteria extracted from the literature categorized into domains (Adapted from Campbell et al., 2011)

Domain 1: Acceptability
Is the metric considered acceptable, relevant and beneficial to practitioners, client groups and timely and responsive to current and future health care needs?
Does the metric aim to promote safe, effective, client centred care and equity for all client groups?
Is the metric able to discriminate appropriately and yet be transferable/generalisable to all relevant care settings?

Domain 2: Content validity
Is the metric attributable to high quality nursing care and embedded in quality care standards and improvement?
Is the metric considered to be valid, necessary and relevant?
Is the metric based on a scientifically sound evidence base incorporating relevant theory and research evidence?
Is the metric based on a sound practice and patient evidence base?
Is the metric patient/client centred?
Does the metric aim to enhance patient/client outcomes?

Domain 3: Clarity
Is the metric clear, concise, specific, consistent and comprehensive?

Domain 4: Technical feasibility
Can the identified area of practice be converted to useable metric statements?
Are there indicators for the metric?
Are these indicators rigorous?

DOMAIN 5: Reliability of data extraction
Will the metric allow a standardised interpretation in collecting nursing and midwifery QCM data?

Domain 6: Implementation
Have all relevant organisational implications been considered in utilising the metric?
What are the implications for staff training, education, monitoring and support in implementing the metric?

TABLE 3 World Health Organization eRegistries indicator evaluation tool (Flenady et al., 2016)

Domain 1: Action focused
It is clear what needs to be done to improve outcomes (e.g., immunised with tetanus toxoid to reduce neonatal tetanus)

Domain 2: Important
The indicator and the data generated will make a relevant and significant contribution to determining how to effectively respond to the problem

Domain 3: Operational
The indicator is quantifiable; definitions are precise and reference standards are developed and tested or it is feasible to do so

Domain 4: Feasible
It is feasible to collect data required for indicators in the relevant setting

Domain 5: Simple & Valued
The people involved in the service can understand and value the indicator

The guidance framework presented identifies key attributes of metrics and indicators categorized within four main domains. The framework considers whether metrics and/or indicators are process focused, important, operational and feasible to guide the selection process. The first two domains focus on whether the metric and/or indicator clearly contributed to the measurement of the care processes and that the contribution is important. The final two domains investigate the availability of supporting reference standards, measurability of indicators and feasibility of data collection of the potential process metrics and indicators.

The first version (Table 2) can be a useful aid in evaluating and selecting nursing and midwifery process metrics if a more comprehensive overview is required. It addresses in more depth the domains of content validity and implementation, both of which are less explicit in the final version. Implementation of metrics and indicators into practice settings requires awareness of structural and organizational factors crucial to the successful implementation of metrics and indicators into practice settings. Both versions of the tool can be used for the selection of nursing and midwifery process metrics and may have different uses in different contexts.

The final version (Table 5) of the metrics and indicators selection framework is presented as a new user-friendly tool, which is directly focused on nursing or midwifery care processes. The importance of the evidence base in terms of research, practice and client evidence where metrics should be as evidence-based and technically sound as possible is incorporated (Maben et al., 2012). The research evidence base for nursing and midwifery process metrics, however, is underdeveloped and this points to a need for a continuing programme of nursing and midwifery process metric and indicator development underpinned by research. There is also recognition that structural factors affecting the implementation of metrics and indicators into practice are also important.

Maben et al. (2012) identified five principles that should guide developing and then implementing nurse sensitive metrics and indicators. These principles include that metrics and indicators should be fit for purpose, aligned with clinical outcomes and initiatives, evidence-based, be clear, consistent and collectable and finally be embedded in quality standards (Maben et al., 2012). In the final selection of metrics and indicators to be used in practice by nurses and midwives, such principles need to be operationalized and the guidance framework presented here is a step towards that. The framework is grounded in robust processes of a literature review and expert review by nursing and midwifery experts in practice and academia. It is designed to be comprehensive and user-friendly to assist decision-making processes around process metric and indicator selection. It was successfully used at the consensus meeting stage in the selection of suites of nursing and midwifery care process metrics in a national project in Ireland.

The authors acknowledge that there are limitations. Although the framework is valid, it has not been tested for reliability. Therefore, further statistical testing of the framework items for reliability and testing, piloting and development of the frameworks in different contexts is recommended.

TABLE 4 Initial framework (version 1) (Adapted from Flenady et al., 2016, and Campbell et al., 2011)

Domain	Descriptor statements
Domain 1: Acceptability	The metric/indicator is considered to be important, acceptable, relevant and beneficial to practitioners, client groups and timely and responsive to current and future health care needs
Domain 2: Simple & Valued	The people involved in the service can understand and value the metric/indicator
Domain 3: Evidence base	The metric/indicator is based on a scientifically sound evidence base incorporating relevant theory and research evidence and/or based on a sound practice and patient evidence base Reference standards are available or can be developed
Domain 4: Clarity	The metric/indicator statement is clear, concise, specific and comprehensive
Domain 5: Operational feasibility	The metric/indicator allows a standardised interpretation in collecting nursing and midwifery Quality Care Metric data in relevant settings

TABLE 5 Guidance framework for selecting Nursing and Midwifery Quality Care Process Metrics and Indicators (Adapted from Flenady et al., 2016, and Campbell et al., 2011)

1 Process focused 　The metric/indicator contributes clearly to the measurement of Nursing or Midwifery care processes	Yes/No
2 Important 　The data generated by the metric/indicator will likely make an important contribution to improving Nursing or Midwifery care processes	Yes/No
3 Operational 　Reference standards are developed for each *metric* or it is feasible to do so. 　The *indicators* for the respective metric can be measured	Yes/No Yes/No
4 Feasible 　It is feasible to collect and report data for the metric/indicator in the relevant setting	Yes/No

6 | CONCLUSION

Standardized metrics and indicators for nursing and midwifery care processes can enable benchmarking between organizations, support improved accountability and increase patient choice (Cusack et al., 2014). Key to the development of any metric is that they are suited to their intended purpose and are relevant, valid, reliable, feasible and useful in supporting change (Royal College of Nursing, 2009). In nursing and midwifery metric development, there has been less emphasis on process metrics and consequently no specific guidance in the selection of process metrics. Through a robust process of a systematic review of the literature and expert review, a guidance framework to aid in the selection of nursing and midwifery process metrics and indicators has been developed.

This study provides a systematic collation of the key attributes and characteristics of nursing and midwifery metrics and indicators. The guidance framework can aid nurses and midwives to select nursing and midwifery process metrics and indicators for implementation into practice. The development and use of such a tool is a contribution to the identification and measurement of nursing and midwifery care processes in any clinical setting.

ORCID

Duygu Sezgin 🆔 https://orcid.org/0000-0001-8378-6835

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.