



# Evidence-informed framework for gender transformative continuing education interventions for midwives and midwifery associations

Kirsty Bourret <sup>1,2</sup>, Cristina Mattison <sup>1,3</sup>, Emmanuelle Hebert,<sup>4</sup> Ambrocckha Kabeya,<sup>5</sup> Stephano Simba,<sup>6</sup> Moya Crangle,<sup>7</sup> Elizabeth Darling,<sup>8</sup> Jamie Robinson<sup>7</sup>

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For numbered affiliations see end of article.

## Correspondence to

Dr Kirsty Bourret;  
bourretk@mcmaster.ca

## ABSTRACT

**Introduction** Continuing education for midwives is an important investment area to improve the quality of sexual and reproductive health services. Interventions must take into account and provide solutions for the systemic barriers and gender inequities faced by midwives. Our objective was to generate concepts and a theoretical framework of the range of factors and gender transformative considerations for the development of continuing education interventions for midwives.

**Methods** A critical interpretive synthesis complemented by key informant interviews, focus groups, observations and document review was applied. Three electronic bibliographic databases (CINAHL, EMBASE and MEDLINE) were searched from July 2019 to September 2020 and were again updated in June 2021. A coding structure was created to guide the synthesis across the five sources of evidence.

**Results** A total of 4519 records were retrieved through electronic searches and 103 documents were included in the critical interpretive synthesis. Additional evidence totalled 31 key informant interviews, 5 focus groups (Democratic Republic of Congo and Tanzania), 24 programme documents and field observations in the form of notes. The resulting theoretical framework outlines the key considerations including gender, the role of the midwifery association, political and health systems and external forces along with key enabling elements for the design, implementation and evaluation of gender transformative continuing education interventions.

**Conclusion** Investments in gender transformative continuing education for midwives, led by midwifery associations, can lead to the improvement of midwifery across all United Nations' target areas including governance, health workforce, health system arrangements and education.

## INTRODUCTION

While there is ample evidence in support of the positive impacts of midwifery-led care, the profession is not well integrated into most health systems.<sup>1</sup> The 2021, State of the

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ This is the first study of its kind to generate an evidence-informed theoretical framework for considerations to continuing education interventions for midwives using a political and health systems approach.

## WHAT THIS STUDY ADDS

⇒ Our findings suggest that if supported, midwifery associations have the capacity to host these initiatives, resulting in increases in midwifery leadership, improved integration of the profession in political and health systems, leading to improved care and access to sexual and reproductive health and rights (SRHR).

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Our theoretical model can be used by SRHR stakeholders as a guide to designing, implementing and evaluating continuing education in collaboration with and for midwives.  
⇒ The model provides a starting point for the inclusion of gender transformative approaches in order to impact the status of midwifery.  
⇒ Investing in gender transformative continuing education for midwives is essential to the sustainable growth of the profession and to improving access to essential SRHR globally.

World's Midwifery report (SoWMy) cites a global shortage of 900 000 midwives with less than 75% of the current need for sexual and reproductive health services being met globally.<sup>2</sup> This schism can in part be explained by systemic discrimination of the profession driven by the intersects of gender, race, sociopolitical, professional and economic inequities.<sup>3–5</sup> As a result, the SoWMy report calls for the inclusion of gender transformative approaches to the process of the growth of midwifery.<sup>2,3</sup>

The SoWMy report outlines four key areas of investment essential to the growth of the profession in order to meet the universal health needs of women, childbearing people and newborns: (1) health workforce; (2) education and training; (3) midwifery-led service delivery and (4) midwifery-led governance and leadership.<sup>2</sup> Gender transformative approaches cross cut all four areas.<sup>2</sup> In a previous publication, our findings demonstrated when appropriately supported, midwifery associations have the capacity to address all four strategic areas outlined in SoWMy, leading to improved health systems and population health outcomes.<sup>6</sup> This companion research discusses the role of midwifery associations and gender transformative approaches to the second SoWMy key area, education and training (specifically, continuing education) for sustainable growth of the profession.

The Canadian Association of Midwives (CAM) has engaged in reciprocal capacity building partnerships since 2008 with the National Aboriginal Council of Midwives (situated in the land that is referred to as Canada). They have since extended this collaborative approach with midwifery professional associations in seven countries (Benin, Democratic Republic of Congo, Ethiopia, Haiti, Somalia and Somaliland, South Sudan and Tanzania). CAM's strategic vision prioritises organisational capacity building and promoting excellence in the continuing education of midwives. Most often, interventions are hosted by partner midwifery associations.<sup>6</sup> Throughout their work, CAM observed unanticipated outcomes, such as improvement to structural gender inequities, which led them to hypothesise the overarching value to their approach with continuing education interventions (CEI) and longer term gender transformative impacts to the midwifery profession.

Scholarly knowledge regarding CEI for obstetric/neonatal health professionals, including midwives, is common.<sup>7</sup> Yet, the literature often ignores the structural dynamics of *where* and *how* programmes are designed and executed, and by *whom* (ie, who gets paid to do what, who is 'in charge' of what). Such omissions obscure power imbalances that intersectionally impact women-led professions like midwifery. Systematic reviews show that adopting a gender transformative approach to programme interventions centres the critical examination of gender and other inequities to promote system changes, which, over time create, change and improve gender-based outcomes in policy and practice.<sup>8</sup> This strengthens the importance of building the evidence on gender transformative approaches to CEI as a conduit for promoting enabling environments for sustaining the midwifery profession and by extension impact sexual and reproductive health and rights (SRHR).<sup>3,6</sup>

We used a three-pronged approach to create an evidence-informed framework. Our first aim was to synthesise multiple sources of evidence to address the following compass question: What are the factors that impact in-service midwifery continuing education, including comprehension, competency and integration

of skills? Second, to further understand the factors identified in the first aim, we used the example of CAM's programming related to the implementation of CEI for midwives by midwifery associations and conducted key informant interviews, focus groups, observations and document review. Our third aim was to develop a conceptual framework for considerations when implementing gender transformative CEI for midwives. The second and third aims overlapped as part of an iterative process in which stakeholders informed and provided feedback on the development of the conceptual framework.

Our work is rooted in intersectional feminist, anticolonial and collaborative lenses. We purposefully do not dichotomise between World Bank classification of countries by income groups (ie, high-income countries vs low-income and middle-income countries) as we recognise that improving access to quality SRHR is relevant to all health systems.<sup>9</sup> The importance of context is central, along with how each country's health system(s) and political system functions within a given context.

## METHODS

This study was carried out in tandem with 'Health systems factors impacting the integration of midwifery: an evidence-informed framework on strengthening midwifery associations' and has the same methodological approach. For a more detailed description, please refer to the previous publication.<sup>6</sup>

We conducted a qualitative evidence review and synthesis to create a conceptual framework for strengthening of quality midwifery care with continuing education. We used a critical interpretive synthesis as an approach to qualitative systematic review, complemented additional qualitative sources to inform the development of concepts and theory.<sup>6,10</sup>

### Critical interpretive synthesis

The systematic searches for the critical interpretive syntheses were conducted in June 2019 and refreshed in June 2021 in the following electronic bibliographic databases: CINAHL, EMBASE and MEDLINE. A librarian provided guidance on developing keywords (along with Boolean operators) and Medical Subject Heading (MeSH) and executing the searches. While we chose to use the term 'continuing education interventions for midwives' in the manuscript, there is no common language or definition of in-service education, and, therefore, we included various terms in the search. The search strategy was developed in the MEDLINE database, using keywords and MeSH and similar search strings were used across databases, with minor adjustments. The searches in MEDLINE included: midwifery/; midwi\*.ti,ab,kf.; (emergency adj2 (obstetric or neonatal or care)).ti,ab,kf.; competency.mp.; competency.ti,ab,kf.; evaluation.ti,ab,kf.; skill.mp.; skill.ti,ab,kf.; train\*.ti,ab,kf. Following this step, related SRHR websites known for conducting midwifery training or standards of midwifery

education were searched for relevant documents (eg, JHPIEGO, International Confederation of Midwives (ICM), WHO and United Nations Population Fund) and hand searches of reference lists from key publications were used to identify additional relevant literature.

For inclusion in the critical interpretive synthesis, documents had to provide insight into the compass question and include the continuing education of midwives. 'Midwives' was loosely defined, meaning it did not have to fit the international criteria for the profession as outlined by the ICM.<sup>11</sup> Documents involving other disciplines in the intervention were accepted. Exclusion criteria included documents published before the year 2000 and other than English, Spanish or French. Because the literature is vast in this area, and due to the concentration of CAM programming in Sub-Saharan Africa and the Caribbean, we primarily included documents published in these WHO regions. Hand selection from other WHO regions was acceptable if relevant to midwifery and CAM programmes.<sup>6</sup>

### Additional sources of qualitative evidence

We used key informant interviews, focus groups, observations and document review to inform the development of concepts and theory, and build the framework. All data were collected in English and French. The countries of focus for the additional sources of qualitative evidence included: Benin; Canada; Democratic Republic of the Congo (DRC); Ethiopia; Haiti; South Sudan and Tanzania.

A multistage purposive sampling approach was used to identify and recruit participants who had participated in CAM's global projects and continuing education interventions for midwives. The four categories of participants were: (1) midwifery professional association staff, executive boards (leaders), midwives and student members; (2) midwife consultants; (3) policymakers, and (4) partner organisations, including visiting or contributing funders and hosts. We invited participants by email or face-to-face and conducted interviews either face-to-face, by phone or virtually. All interviews were audio recorded. Canadian participants were either midwife consultants or individuals working strictly within CAM's global projects division; and who travelled extensively within the forementioned countries.

During observations in Canada, DRC and Tanzania, focus groups were conducted with stakeholders along with participant observation (CM, KB, AK). The purpose of the focus groups was to gain a deeper understanding of context-specific factors that influence integration of in-service skills and elicit insight and feedback on initial concepts. Participant observation was documented through written notes and audio recordings between researchers (CM and KB).

The selection of the documents for the document review consisted of any programme documents related to projects that included a component on in service skills education. The documents spanned CEI in all countries and ranged from grant proposals, theory of change and

logic models, performance management frameworks and evaluations.

### Patient and public involvement

It was not appropriate or possible to involve patients or the public in the design, or conduct, or reporting or dissemination plans of our research.

### Data analysis and synthesis

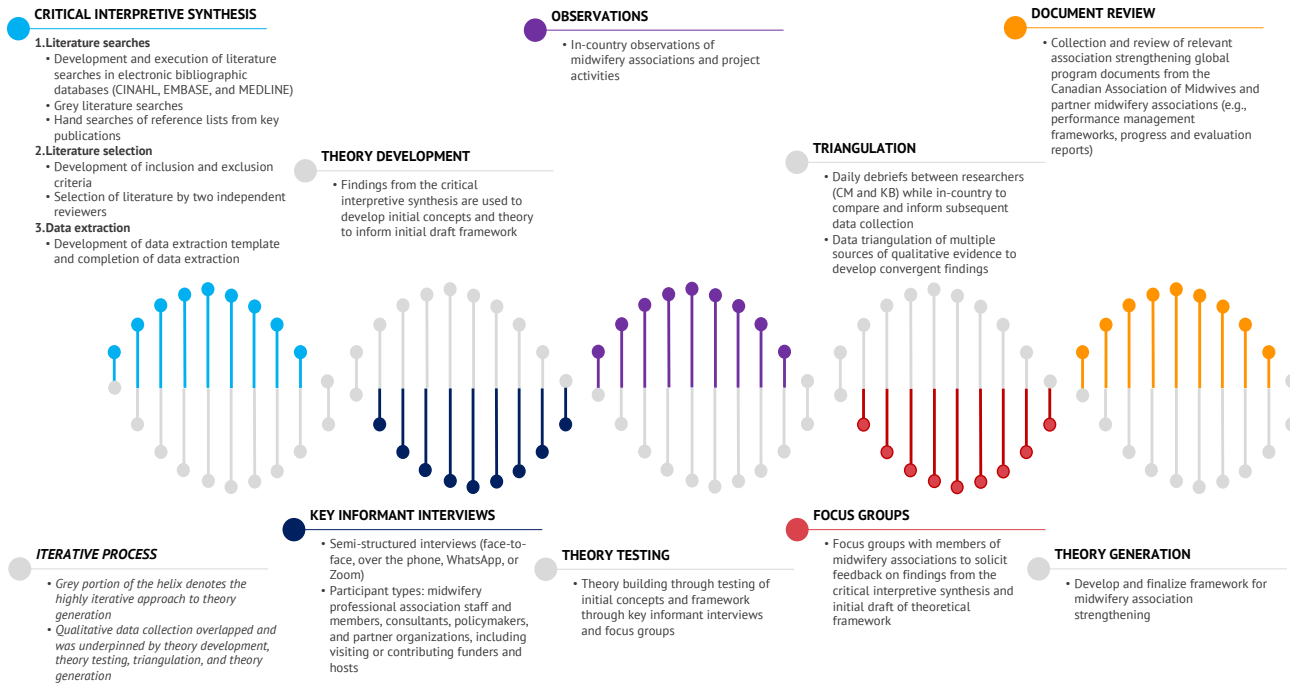
A common feature of qualitative inquiry is that analysis and interpretation overlap with sampling and data collection (figure 1).<sup>6</sup> Data extraction for the critical interpretive synthesis was guided by a coding structure. Data were collected on publication year, study design, health professions, jurisdiction(s) of focus, the processes related to and the characteristics of continuing education programmes or interventions involving midwives. The findings from the critical interpretive synthesis were used to develop the initial core concepts and theory related to education for in-service midwives and the initial draft framework.<sup>10</sup> Data analysis of the additional sources of qualitative evidence used the qualitative software NVivo for Mac for the organisation and coding of the data. Coding occurred in the original language that the data were collected in (French or English). We applied a constant comparative method, such that emerging data were compared with previously collected data to find similarities and differences.<sup>12</sup> Completeness of the findings was ensured through ongoing consultation with members of the research team. During the research process, we broadened the research team to include experts in designing and implementing continuing education programmes via midwifery associations in Canada, DRC and Tanzania. These experts formed a collaborative team and worked with CM and KB during the research process (AK, SS, EH, JR and MC). For example, the research inquiry was validated, and initial results were vetted by association members and leadership. The team went on to codevelop the concepts and framework as well as the manuscript. Finally, there is ongoing collaboration with the research consortium to ensure that results are shared with participating associations, which will also include further research to understand the applicability and feasibility of our conceptual elements.

Finally, researcher reflexivity was practiced through a number of strategies. Mertens principles of critical reflection for addressing constructs of power and validity of results were applied.<sup>13</sup> We continuously critically examined dynamics of power and our geo-social positioning of privilege in order to mitigate its impacts on the research process and relationships with participants and avoid replicating historical patterns of oppression. A gender transformative lens was applied.

## RESULTS

### Search results and article selection

The search of the electronic databases yielded a total of 4519 records, and once duplicates were removed (n=471),

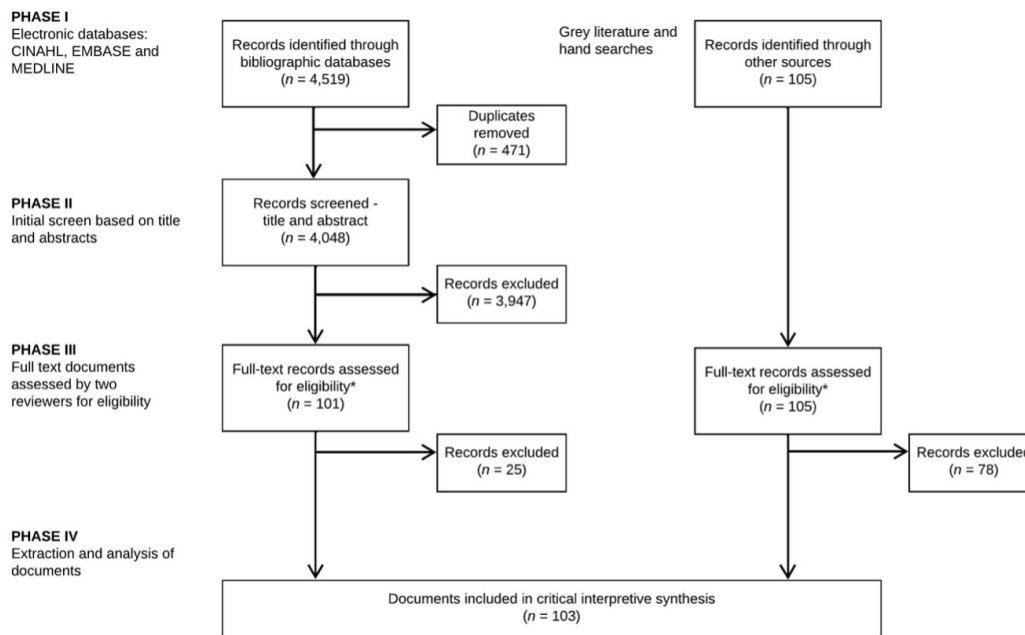


**Figure 1** Process helix of qualitative data collection and theory generation.

the remaining records (n=4048) were screened based on title, abstract and an explicit set of exclusion criteria. There were 206 potentially relevant records remaining. In addition to the electronic database searches, 27 records were purposively sampled for inclusion through grey literature and hand searches. These remaining documents (206) were assessed by the reviewers (CM and

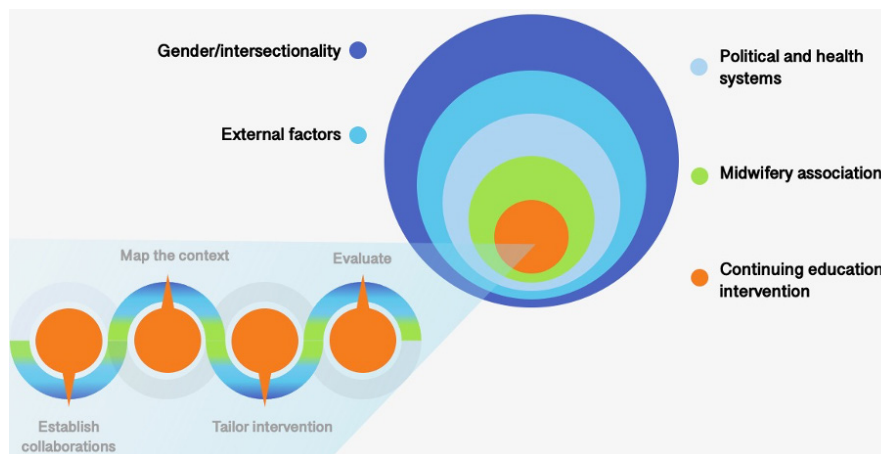
KB) for inclusion using the full text, resulting in a total of 103 documents included in the critical interpretive synthesis (figure 2).

A majority of documents (60%) were published after 2015 and no documents were published before 2000. Of the 103 documents, 51% were primary research (n=53), which were mostly mixed methods research (n=21),



**Figure 2** Literature search and study selection flow diagram.





**Figure 3** Conceptual framework for gender transformative continuing education interventions for in-service midwives.

descriptive studies (n=14), qualitative research (n=12), randomised control trials (n=5). Secondary research was primarily systematic reviews (n=13) and an observational study. The remaining documents were categorised as non-research (n=37), meaning that approaches taken in the documents were either not systematic or that methods were not reported transparently. Of the non-research documents, 21 were ‘other’ (eg, programme evaluations, toolkits, manuals, technical briefs, and strategic plans, etc), 11 were editorials and 5 were reviews (non-systematic). Most documents (n=74) included midwives, however only 21% were exclusive to the midwifery profession (n=22).

#### Additional qualitative evidence sources

We conducted 31 key informant (KI) interviews and 5 focus groups. Focus groups and a majority of the KI interviews occurred in Democratic Republic of Congo

and Tanzania. Remaining KI interviews were conducted by zoom to South Sudan, Haiti and Canada. Twenty-four CAM programme documents were included in the document review. We also analysed observation notes (255 pages) and audio recordings between researchers (CM and KB). The process was highly iterative such that the multiple types of qualitative data analysis were all used to inform the theoretical framework.

We describe below the theoretical propositions, which align with the core elements presented in our theoretical framework for key drivers of sustainable CEI for midwives (figure 3) (french see supplemental files. Figure 4 represents a subframework of the key considerations to apply during the process of planning, development, implementation and evaluation for sustainable, impactful and gender transformative CEI (figure 4) (french see supplemental files). The onion-like design, shown in



**Figure 4** Process for the planning, development, implementation and evaluation of gender transformative continuing education interventions for in-service midwives.

figure 3, represents the interconnection of factors that impact the CEI; at the centre, is the intervention itself which is divided into a four-step process: establishing collaborations, mapping the health and political system context of midwifery including gender considerations, tailor the CEI in correspondence to the mapping and evaluation approaches that capture specific midwifery barriers and solutions. The CEI is embedded within the midwifery association, or the midwifery stakeholder, in this case, a civil society organisation; both interact with the outer context (health and political systems) and external factors that either enable or constrain the impact of the education intervention; finally, by applying a gender transformative lens, gender and its intersections are crosscutting.

### Theoretical propositions

#### Gender

Gender is often an assumed consideration when thinking of midwifery yet lacking explicit incorporation and assessment in CEI. Our previous research has found that the role of gender within society is integral to the political and health system context,<sup>1 14–19</sup> and the social construction of gender impacts the value placed on women in society, and by extension midwifery.<sup>1</sup>

Gender inequities exist within midwives' social, economic and professional spheres causing high instances of burnout, moral distress and being unsafe in the workplace. As a result, midwives describe decreased motivation to practice impacting the quality of services they provide.<sup>3</sup> The gendered nature of the midwifery profession influences investments in midwifery education and midwifery associations' relationships with health system decision-makers due to an overall lack of societal respect for women in many contexts.<sup>6 17 20</sup> Finally, elements such as racism, sexism and colonialism intersect with gender or patriarchy disproportionately impacting groups of midwives in health and education systems.<sup>5 21</sup> Despite the evidence, the scholarship for CEI for midwives does not make mention of gender transformative approaches to address these barriers that impact midwives' ability to learn and practice.

Examples found to enable gender transformative environments include mitigating power imbalances and fostering safe spaces for all learners during the intervention by ensuring for midwife trainers, midwife mentors or midwife supervisors; designing the intervention to minimise economic impacts to participants (ie, childcare, remuneration for participation and time off work); and including a range of midwifery voices throughout the process especially those who have been oppressed by racist, colonial or patriarchal, heteronormative, systems, to explore and provide solutions for their own intersectional position in the health system such as how their gender and other intersects of oppression impact their social, economic and professional life or safety.<sup>2</sup> In table 1, we have further detailed gender transformative

considerations for the design, implementation and evaluation of interventions (french see supplemental files).

#### Midwifery associations

At the heart of our framework surrounding the intervention, sits the midwifery association. Intentional partnerships with civil society or midwifery professional bodies can be an effective approach to implementing CEI in order to achieve overall goals.<sup>22–28</sup> The core theme that underpins the remainder of our results was the positive feedback loop between the results of association strengthening and the results of the CEI. By designing, implementing and evaluating CEI, the midwifery associations were able to increase their organisation and technical capacities and their capacity to strengthen their profession in health and political systems.<sup>6</sup> Ensuring continuous education interventions to their members resulted in midwives who felt competent to provide quality care. By extension, midwives having participated in continuous education interventions became more involved in the association further increasing the capacity of the midwifery association to respond to the needs of their members and so on. Other examples will be discussed in detail throughout the framework to demonstrate the crosscutting nature and richness of this theme.

The (association) was going out into the regions ... delivering training to midwives, a whole bunch of district health officers and regional health bureaucrats and doctors gained an understanding of what “the association” was and what midwives were and (the association's) own kind of capacity to influence things and capacity to support their members grew as an unintended benefit of those clinical skills trainings (KI#17).

#### Political systems

To strengthen midwifery at the service level, understanding midwifery and the midwifery association as it is placed within the broader health and political system is key to appropriately addressing the continuing education needs of the profession (see table 1).<sup>29</sup> Policy environments either limit or enhance CEI for midwives at the service level and within the health system more broadly.<sup>6 20</sup> Midwifery associations that housed continuing education programmes often partnered with ministries of health and other stakeholders during the process, resulting in improved relationships with dominant interest groups such as professional obstetric and neonatal associations. This cocreation of the intervention facilitated strategic links to individuals who held decision-making power and who in time became champions for the CEI and, by extension, the midwifery profession. While midwifery associations faced a general lack of political will to invest in midwives overall, they were able to make some in-roads where they had not before.

So midwifery is now known today, now known by all. Today, in all the activities that the Ministry of Health organizes in favor of the mother and the child, \_\_\_ (the association)

**Table 1** Considerations for the planning, development, implementation and evaluation of gender transformative continuing education interventions for midwives

Theme	Applying the theme
Positioning midwives within their specific political and health system's context so that interventions are appropriate	<ol style="list-style-type: none"> <li>Map the context of midwifery by governance, service delivery and financial arrangements (eg, scope vs role of midwives in the health system).                             <ul style="list-style-type: none"> <li>Include the impacts of policy legacies, status of women in society, and other intersects such as indigeneity</li> <li>Understand and include impacts of external forces such as climate change, pandemics, conflict, etc.<sup>2-4 28 32 34 36 39 40 46 53-57</sup></li> </ul> </li> <li>Involve midwifery stakeholders, especially professional associations, to ensure breadth and accuracy of the mapping phase<sup>2-4 22-28 46 54-56 58</sup></li> <li>Use these findings to inform the intervention as well as the evaluation framework to maximize long-term skills integration and broader health and political system impacts of the training<sup>2 4 30 32 54</sup></li> </ol> <p>Gender transformative considerations</p> <ul style="list-style-type: none"> <li>Do the stakeholders represent the full range of midwives' voices, with an emphasis on midwives who are oppressed by racist, colonial, patriarchal, or heteronormative systems?</li> <li>Does the intervention include gender transformative components such as leadership, remuneration and other working conditions?</li> </ul> <p>Illustrative quotation</p> <p>'They (the association) are successful because they understand the issue. They understand the issue, but also, they tie their passion to the issue.' (K1#6)</p>
Tailoring midwifery specific content empowers midwives to understand the role of their profession, fosters leadership skills and increases understanding of the impacts of gender discrimination	<ol style="list-style-type: none"> <li>Co-create content and design with midwifery stakeholders<sup>3 28 46 55 56 59</sup> <ul style="list-style-type: none"> <li>Include elements specific to the needs of midwifery in the given context. For example, scope-of-practice, role of midwives at the service level, financial challenges or solutions, remuneration, professional self-awareness, midwifery philosophy of care, and leadership competencies such as advocacy or communication<sup>2 3 6 20 27 28 38 40 47 54-56 64-63</sup></li> </ul> </li> <li>Consider (in collaboration with stakeholders) conducting midwifery only training alone or prior to interprofessional training and on-site longer-term interventions, which improve integration and increase visibility of midwives in facility<sup>3 6 27 28 33 35-38 41 48 58 63-74</sup></li> </ol> <p>Gender transformative considerations</p> <ul style="list-style-type: none"> <li>Does the content and design of the training align with the current status of midwifery in the country or region? Can tools be created or adapted to suit the needs of the specific context?</li> <li>Has space been made for all midwives, especially those who have been oppressed by racist, colonial, patriarchal, heteronormative systems, to explore and provide solutions? Consider intersectionality in position, such as how gender and other intersects of oppression impacts the midwife's social, economic and professional life?</li> </ul> <p>Illustrative quotation</p> <p>'We would have a different approach to development that would be the change ... individualizing problems to a midwifery model, a scope of practice, ... and informed consent and all the things that are implicated in that. I think that's the core values that we want to drive our programming.' (K1#13)</p>
Midwife-led continuing education interventions, with relevant and safe supports, leads to better integration of skills, and by extension facility functions	<ol style="list-style-type: none"> <li>Incorporate training of midwife facilitators                             <ul style="list-style-type: none"> <li>Midwives who teach or are taught by other midwives are empowered. Midwives show increased confidence to apply their skills, improved understanding of their role, stronger connections to other midwives, and more motivation to be involved in their association and midwifery more broadly<sup>4 7 28 35 38 46 66 75</sup></li> </ul> </li> <li>Training midwives as supervisors and mentors improves the integration of skills over time                             <ul style="list-style-type: none"> <li>Midwife supports have an intimate understanding of their unique situation and challenges and midwives are more likely to share inadequacies, gender/professional discrimination, ongoing educational needs or system supports<sup>35 36 38 65 66</sup></li> </ul> </li> </ol> <p>Gender transformative considerations</p> <ul style="list-style-type: none"> <li>Do the midwife trainers, supervisors and mentors represent people who are:                             <ul style="list-style-type: none"> <li>living in rural, remote, or working in smaller centres?</li> <li>of colour and/or Indigenous?</li> <li>practicing with a disability?</li> <li>the range of ages and stages of the midwifery career?</li> <li>in midwifery professional bodies and midwifery leadership?</li> </ul> </li> <li>Are midwife trainers, supervisors and mentors appropriately remunerated for their time?</li> <li>Are midwife trainers, supervisors and mentors provided with an environment to safely engage in and contribute to?</li> </ul> <p>Illustrative quotation</p> <p>'When you have disempowered midwives, you don't have good quality care. You really just don't, and you don't have any opportunity to input into national programs or local programs because there is not a respect for the midwives who would like to have their voices heard at those tables.' (K1#22)</p>

Continued

**Table 1** Continued

Theme	Applying the theme
<p>Understanding the specific challenges and solutions to supporting skills integration</p>	<p>1. Process evaluations or 'most significant change' evaluation, and positive deviancy better capture the specific solutions and challenges related to supporting skills integration</p> <ul style="list-style-type: none"> <li>- These include unofficial types of leadership, better working conditions for midwives and advances in gender equity, changes in morale and professional burnout, or better internal professional awareness and empowerment.<sup>3 37 46 48 64 66 76 78</sup></li> </ul> <p>2. Evaluate outcomes within the midwifery associations or professional bodies including how they've impacted other health system components such as the workforce, interprofessional relationships, midwifery model of care, and leadership</p> <ul style="list-style-type: none"> <li>- Evaluate the evolving capacity of the professional body during the implementation of continuing education programs<sup>6 64</sup></li> </ul> <p>3. Well tested evaluation frameworks such as the Kirkpatrick evaluation and variations of, can be used, but would need to be adapted to the midwifery and country context during the mapping phase<sup>7 19 30</sup></p>
<p>Gender transformative considerations</p>	<ul style="list-style-type: none"> <li>▶ Does the evaluation have explanatory or transformative components and include perspectives of those that have been suppressed by racist, colonial, patriarchal, or heteronormative systems?</li> <li>▶ Have you ensured data sovereignty and equitable knowledge exchange plans including publications and presentations? This is essential for Indigenous-led bodies</li> </ul>
<p>Illustrative quotation</p>	<p>'There are other things, other less orthodox methods. Like most significant change, or outcome harvesting, which are other approaches that have often, in fact, been developed internationally... and which would probably have been more relevant to apply in the context.' (K/#5, translated from French)</p>
<p>Housing continuing education interventions for midwives within a midwifery association is an effective approach to longer term integration of skills and improvements to the profession in the health system</p>	<ol style="list-style-type: none"> <li>1. Midwifery associations, as experts of their health profession, can ensure curriculum content is adapted accordingly to train and mentor midwife trainers, supervisors, and mentors within the association<sup>1 20 34</sup></li> <li>2. Midwife-led supervision and mentorship that also represents the midwifery association can serve as advocates, leveraging their position to help trained midwives to improve their working conditions including the purchasing of equipment. This also serves to strengthen the connection of members to their association, returning to the organisation and increasing the capacity of the organisation to respond to the needs of its members<sup>27 64</sup></li> <li>3. Over time, as midwifery associations sustain continuing education programmes, they address system barriers to practice and mentor new midwifery leaders<sup>6 28 27 46 54 64</sup></li> <li>4. To properly sustain continuing education interventions, supporting associations to improve their technical and organisational capacity is important to the sustainability of the association. This includes research and policy capacity led by and for midwives<sup>6 27 64</sup></li> </ol>
<p>Gender transformative considerations</p>	<ul style="list-style-type: none"> <li>▶ Does the midwifery association require support to implement gender transformative policies or by-laws within the organisation and for its members?</li> <li>▶ Is the midwifery association's executive board representation inclusive of people of colour, Indigenous, geography, ages and stages of the midwifery career, 2SLGBTQI+, and people practicing with a disability?</li> <li>▶ Does the midwifery association require support in obtaining operational funds to provide financial stability for its working members?</li> <li>▶ Are there safe administrative structures and working environment within the midwifery association free of harassment?</li> </ul>
<p>Illustrative quotation</p>	<p>'We used to take it to the association from time to time, to tell them that no, we still need further strengthening internally.... So it helped us to really improve the working life of our colleagues... we are now strengthening the service provider on the ground by identifying its weaknesses.... we are always in contact with the field.' (K/#2, translated from French)</p>
<p>2SLGBTQI+, Two-Spirit, lesbian, gay, bisexual, transgender, queer (or questioning). The plus sign represents other sexual identities, such as pansexual or asexual.</p>	



does not miss an invitation. We always include \_\_\_\_ (the midwifery association) (KI#2 translated from French).

## Health system

Midwives' status and level of capacity vary greatly between and within health systems and must be mapped and understood at the outset.<sup>16</sup> The following subsections elaborate how the health system (governance, service delivery and financial arrangements) impacts the ability of midwives to integrate the skills and knowledge acquired through CEI.

### Governance

Pivotal to the integration of midwifery in health systems is their level of professional autonomy or self-governance. When midwifery regulation is managed in combination with other professions (such as nursing), professional roles are unclear, diluting their presence and impact within delivery arrangements.<sup>1</sup> Regulatory systems that autonomise midwifery also ensure that the public is protected and quality of midwifery care is monitored including continuing education competencies. The midwifery participants in the study were at various levels of self-governance and described this as a primary barrier to representation of the profession, ergo women, at various leadership levels including decision-making and policy positions (local, international). Like a domino effect, limited or no midwifery leadership resulted in less lobbying power for self-regulation, and appropriate delivery of midwifery services including the integration of continuing education competencies.<sup>3 4 20 30</sup>

Leadership training in conjunction with CEI has been used as a mitigation strategy within CEI for poor uptake of clinical skills and resulted in increased skills integration in institutions.<sup>31-37</sup> Even when no official leadership training was given, midwives' direct involvement with CEIs implemented principally within the midwifery association, provided them with self-awareness as a midwife, communication and advocacy skills and a new understanding of their profession within their health system and internationally. This was much more evident when midwives had gone on to become CEI facilitators, mentors or played other more consistent roles within the CEI.

It gives us, even now I can stand even in front of the gynecologists, and I can talk, because I'm a midwife, and I know these things. It's helped a lot (KI#15).

In essence, autonomising and empowering midwives in the continuing education process led to an organic growth of midwifery leaders who became motivated and competent to advocate for their profession in multiple policy arenas. These leadership competencies and experiences in turn improved the technical expertise of the midwifery association and their ability to address systemic barriers to the integration of midwives at the health system level. For example, midwives were able to advance regulatory legislation that had been otherwise stagnant, sitting with decision-makers or hospital management to ensure that midwives were appropriately supported.

But with the Association, since we are now united, we can see the problems we face at the level of the institutions, at the level of the department, and then we meet to see how we can improve our activities (KI#11 translated from French).

### Delivery arrangements

The effects of developing leaders within midwifery associations, is that as an entity, the associations were able to demonstrate the potential of midwifery-led CEI to improve midwifery leadership contributing to the integration of the profession. Poor infrastructure, lack of equipment, electricity or safety negatively impact midwifery practice and the morale and health of midwives.<sup>3 4 38-41</sup> Together, increased leadership capacity of the association and midwives resulted in better service arrangements and practice environments for midwives. The following subsection describes how this was achieved at the service level through delivery arrangements.

With regards to post-CEI, midwife participants reported an increase in confidence and competence to practice their new skills at the service level, however, poorly structured service delivery arrangements for midwives threatened sustainability and integration of skills over time. Solutions to these system barriers for midwives came from participants who described increased leadership competencies due to their participation in CEI. For example, midwives trained as facilitators, supervisors or mentors described increased competence and confidence to advocate for midwifery within their hospitals or those of their mentees and to educate other healthcare professionals and decision-makers regarding the role of the association and the profession (see [table 1](#)). This could be as simple and impactful as ensuring that neonatal resuscitation equipment is available at the bedside for midwives to resuscitate a baby instead of carrying the neonate to the paediatric department, advocating for increased privacy for clients given birth through changes in labour and delivery infrastructure and/or teaching emergency skills to other colleagues. At the organisational level, midwifery associations were then able to better understand the needs of their members, providing mentorship, clinical support and advocacy such as proper deployment, remuneration and to access equipment (eg, neonatal resuscitation). Midwifery mentors described the positive experience of integrating change at the service level:

So it helped us to really improve the working life of our colleagues and to strengthen it further. So we're now strengthening the provider on the ground by identifying their weaknesses and we're trying to work on them to bring them back, to strengthen them further (KI#2 translated from French).

### Financial arrangements

Considerations for financial arrangements within CEI did not emerge from the literature synthesis except to discuss the cost efficiency of on-site provision of training.<sup>42</sup> However, we were able to garner further insight into the

impacts of poor financial arrangements and midwives' ability to integrate new skills, including how continuing education can positively impact midwives' financial security. See [table 1](#) for a description of gender transformative approaches to evaluation of these outcomes.

In our study, financial arrangements varied greatly between systems such as private insurance, donor contributions, taxation and so on. Midwives who worked within the private sector had greater financial security compared with their publicly funded counterparts, who described frequent pay gaps and decreased professional motivation and morale. Midwives were generally underpaid, and often earning well below a living wage. In some instances, midwives went without pay for months due to ruptures in funding flows or because their position was not recognised within the government's payroll due to again to lack of self-governance.

They have to do this in an environment where those midwives are not getting paid, and when and if they get paid, they get paid probably like \$15.00 (USD) per month. So, even the salary they do receive it, it's not enough for them to survive (KI#24).

The hospital's reliance on fee-for-service model in these contexts limited the quality and timeliness of care a midwife could provide, as clients often did not have adequate funds to receive care. Midwives described how this predicament created tension and deteriorated the client-midwifery relationship, causing mistrust and trauma for both midwives and families. One midwife told of how she personally paid out-of-pocket so that her client could receive life-saving care:

She witnessed a uterine rupture and the woman, and her family had no money. The midwife paid 3000 Congolese francs (5\$USD) and the woman received a blood transfusion and did not die (translated from French, FGD 1)

These barriers were countered by stories of increased financial literacy and economic stability for midwives who, by virtue of their involvement with midwifery associations and CEI, increased their level of expertise, and subsequently their financial stability. This included writing of grants and project proposals and managing the budget aspects of activities. Furthermore, midwives involved in the coordination of continuing education activities described increases in job opportunities to work for other organisations or divisions within the government for similar continuing education activities. Finally, from the organisational perspective, midwifery associations increased their membership numbers and opportunities for other funding, which provided operational funds to pay core staff who had previously been volunteering. This improved the associations' ability to advocate for better financial arrangements for their profession:

Midwives will be better equipped to negotiate with government policy makers, and to advocate for strengthened comprehensive midwifery services, including issues of recognition and fair pay, contracts for re-engaged midwives (KI#2).

## External forces

External shocks to the system, such as pandemics, climate change, global economic crises and natural disasters tend to shift resource allocation away sexual and reproductive health services delivery, further impacting the funding for and sustainability of CEI. The COVID-19 pandemic is greatly impacting midwifery, however, our observations identified ways in which it presented windows of opportunity to raise the visibility of midwifery associations. Leaders were able to react quickly to educate their members on the use of personal protective equipment, infection prevention and control and participate in the development of training guidelines for frontline workers.

## Planning, development, implementation and evaluation of CEI

Five themes emerged regarding process considerations for the planning, development, implementation and evaluation of CEI for midwives ([table 1](#)). These were: (1) position midwives within their specific political and health system's context, so that interventions are appropriate; (2) tailor interventions for midwifery-specific content that empowers midwives to understand the role of their profession, fosters leadership skills and increases understanding of the impacts of gender discrimination; (3) midwifery-led, midwifery only CEI foster a non-hierarchical learning environment and leads to relevant and safe supports for better integration of skills, and by extension facility functions; (4) understand the specific challenges and solutions to supporting skills integration of midwives, while incorporating evaluations with a highly explanatory component and (5) house CEI for midwives within a midwifery association as an effective approach to longer term integration of skills and improvements to the profession in the health system ([table 1](#)).

## DISCUSSION

### Principal findings

We present an evidence-informed conceptual framework for the gender transformative education of in-service midwives, which aligns with the core elements described in the theoretical propositions. At the centre of our conceptual framework, it is the process of conception, implementation and evaluation of the intervention which in turn is nested within the midwifery association as a partner, collaborator or host. Both components are seated within the context of midwifery in a particular health and political system. A gender transformative lens is applied to each component. The midwifery association is positioned between the intervention and the system in order to support the competencies of midwives by simultaneously enabling the profession to achieve its potential in all four of the UN's investment areas; training, leadership, health workforce and midwifery autonomy; ultimately leading to increased access to SRHR.

Underpinning all considerations in our framework is the impact of gender inequalities within the structure of midwifery (poor remuneration, lack of professional

recognition, little midwifery leadership, violence and personal safety, etc) that greatly contribute to burnout and moral distress and severely cripple midwives' capacity to integrate new skills.<sup>3 4 41 43 44</sup> In addition, mapping the health and political system context of midwifery, the planning, development, implementation and evaluations of CEI must begin to incorporate a feminist process and lens that critically examines gender and other intersects (eg, ethnicity, indigeneity and disability).<sup>8 45</sup> Examples in our results provide guidance and first steps. Furthermore, we propose the value of explanatory evaluation approaches to understand and evaluate the impact of oppression, discrimination, unanticipated impacts and specific elements regarding the midwifery contexts of the intervention.<sup>41 45-47</sup>

Approaches that foster midwifery leadership are elements that must begin to be incorporated into midwifery-specific interventions when working to improve the status of midwifery and, thus, SRHR.<sup>30 32 37 44 48</sup> When these elements were explicitly integrated into the inception and operationalisation of activities, intervention hosts (midwifery associations) and midwives were empowered to become leaders and impact the governance of midwifery within and outside of constitutional structures.<sup>6</sup> Our findings demonstrate that when empowerment was present, there were sustainable shifts with regards to midwives' work environments and financial security and to midwifery associations' capacity to improve the status and integration of the profession within political and health systems.<sup>27 28 49-52</sup> Participants described how interventions created by and implemented for midwives provided the tools and capacity to address the inequalities faced by their profession; the midwifery association became their support system and a lifeline to sustain this work.

### Strengths and limitations of the study

The main strength of the research is the richness of the data gathered through multiple sources of evidence. There is a growing body of research evidence regarding the role of midwifery associations and strengthening midwifery in health systems, yet to our knowledge, our study is the first to generate theory and a conceptual framework that incorporates gender, health and political system factors and the role of midwifery associations when creating, implementing and evaluating CEI. The use of multiple sources of evidence meant that we did not have to rely on the very limited relevant published research literature, but rather used it as one of many inputs to theory generation.

Our main limitation was with respect to travel. We encountered a few challenges with visiting each of the midwifery associations that CAM is currently engaged in partnerships with due to context-specific issues of political instability and logistics related to travel to fragile states. While we made sure to collect qualitative data from these contexts through other virtual means, we recognise that fieldwork and observations are an important source

of evidence, and important to understanding midwifery associations working in challenging contexts.

### CONCLUSION

Investments in the midwifery profession will be necessary in order to address the pressing need for quality SRHR services globally. Our framework supports the development of evidence-informed CEI for midwives using gender transformative approaches and reinforces midwifery associations as an important strategy to strengthening the profession across health and political system arrangements and improving inequities.

### Author affiliations

<sup>1</sup>Women and Children's Health, Karolinska Institute, Stockholm, Sweden

<sup>2</sup>McMaster Midwifery Research Center, McMaster University Faculty of Health Sciences, Hamilton, Ontario, Canada

<sup>3</sup>Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, Ontario, Canada

<sup>4</sup>Bureau des relations internationales, Université du Québec à Trois-Rivières, Trois-Rivières, Quebec, Canada

<sup>5</sup>Société Congolaise de la Pratique Sage-femme, Kinshasa, Democratic Republic of the Congo

<sup>6</sup>Tanzania Midwives Association (TAMA), Dar es Salaam, United Republic of Tanzania

<sup>7</sup>Canadian Association of Midwives, Montreal, Quebec, Canada

<sup>8</sup>Obstetrics and Gynecology, McMaster University Faculty of Health Sciences, Hamilton, Ontario, Canada

**Twitter** Kirsty Bourret @DrKirstyBourret, Cristina Mattison @MattisonPhD and Elizabeth Darling @LizDarlingRM

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**Contributors** KB: is acting as the guarantor, co-developed the research proposal, co-conducted the critical interpretive synthesis with CM as well as all other sources of data collection. KB led the team in the analysis of all sources of data; prepared the initial synthesis, concepts and framework and incorporated the team's feedback and revisions; prepared the initial draft of results for research team and incorporated feedback and revisions; prepared initial draft of manuscript and incorporated feedback and revisions. CM: co-developed research proposal, co-conducted critical interpretive synthesis with KB and other sources of data collection; participated in analysis of all sources of data; revised and reviewed the synthesis of data, initial concepts and framework; created the images of the frameworks; conducted the first revision of results and manuscript and worked extensively with the research team on the finalization of results, framework and manuscript. EH: participated in team meetings and work to refine and develop the analysis of all sources of data; participated in the development of framework and concepts; revised and translated the results to French; revised the manuscript. AK: reviewed and approved the research protocol; oversaw and facilitated data collection (interviews, focus groups, observations, document collection) in the Democratic Republic of Congo; co-facilitated member checking of framework; participated in meetings to revise framework and results in French. SS: supported data collection in Tanzania (interviews, focus groups, observations, document collection); reviewed framework and concepts as well as contributed to manuscript. MC: reviewed and contributed to synthesis of the initial results; participated in team meetings to review the framework and manuscript. ED:



supported proposal development and collaboration with CAM; participated in the analysis of the results and reviewed manuscript. JR: co-developed research proposal; organized collaborations and in-country data collection plans in Democratic Republic of Congo and Tanzania as well as distance data collection in South Sudan and Haiti; reviewed the concepts and framework; contributed to the writing of the manuscript.

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#### ORCID iDs

Kirsty Bourret <http://orcid.org/0000-0003-4319-5728>

Cristina Mattison <http://orcid.org/0000-0001-7210-0690>

## REFERENCES

- Mattison CA, Lavis JN, Wilson MG, *et al*. A critical interpretive synthesis of the roles of midwives in health systems. *Health Res Policy Syst* 2020;18:77.
- Fund UNP. State of the World's Midwifery report 2021 UNFPA; 2021.
- Filby A, McConville F, Portela A. What prevents quality midwifery care? A systematic mapping of barriers in low and middle income countries from the provider perspective. *PLoS One* 2016;11:e0153391.
- Alliance WR. *Midwives' voices, midwives' realities: findings from a global consultation on providing quality midwifery care*. Geneva: WHO, White Ribbon Alliance, International Confederation of Midwives, United Populations Fund, 2018, 20162018.
- Wren Serbin J, Donnelly E. The impact of racism and midwifery's lack of racial diversity: a literature review. *J Midwifery Womens Health* 2016;61:694–706.
- Mattison C, Bourret K, Hebert E, *et al*. Health systems factors impacting the integration of midwifery: an evidence-informed framework on strengthening midwifery associations. *BMJ Glob Health* 2021;6:e004850.
- Ameh CA, Mdegela M, White S, *et al*. The effectiveness of training in emergency obstetric care: a systematic literature review. *Health Policy Plan* 2019;34:257–70.
- Bartel DAF, Perlson S. *Lessons learned in gender transformative health programming a rapid review*. (IGWG) Tigwg, 2022.
- World Bank. World bank country and lending groups Washington: the world bank group, 2020. Available: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519> [Accessed 27 Aug 2020].
- Mattison CA, Bourret K, Dion ML. Leveling up evidence syntheses: filling conceptual gaps of the role of midwifery in health systems through a network analysis. *BMC Res Notes* 2022;15:216.
- Midwives ICo. ICM definitions, 2018. Available: <https://www.internationalmidwives.org/our-work/policy-and-practice/icm-definitions.html>
- Charmaz K. *Constructing grounded theory*. London: Sage, 2014.
- Mertens DM. *Transformative research and evaluation*. New York: Guilford Press, 2008.
- Renfrew MJ, Ateva E, Dennis-Antwi JA, *et al*. Midwifery is a vital solution-What is holding back global progress? *Birth* 2019;46:396.
- Zuyderduin A, Obuni JD, McQuide PA. Strengthening the Uganda nurses' and midwives' association for a motivated workforce. *Int Nurs Rev* 2010;57:419–25.
- Lopes SC, Titulaer P, Bokosi M, *et al*. The involvement of midwives' associations in policy and planning about the midwifery workforce: a global survey. *Midwifery* 2015;31:1096–103.
- American College of Nurse-Midwives. Professional association strengthening manual. Silver Spring American College of Nurse-Midwives; 2016.
- Temmar F, Vissandjée B, Hatem M, *et al*. Midwives in Morocco: seeking recognition as skilled partners in women-centred maternity care. *Reprod Health Matters* 2006;14:83–90.
- Speakman EM, Shafi A, Sondorp E, *et al*. Development of the community midwifery education initiative and its influence on women's health and empowerment in Afghanistan: a case study. *BMC Womens Health* 2014;14:111.
- Gavine A, MacGillivray S, McConville F, *et al*. Pre-service and in-service education and training for maternal and newborn care providers in low- and middle-income countries: an evidence review and gap analysis. *Midwifery* 2019;78:104–13.
- ICo M. International Confederation of Midwives - Anti Racism Statement; 2020.
- Mirkuzie AH, Sisay MM, Reta AT, *et al*. Current evidence on basic emergency obstetric and newborn care services in Addis Ababa, Ethiopia; a cross sectional study. *BMC Pregnancy Childbirth* 2014;14:354.
- Ameh C, Msuya S, Hofman J, *et al*. Status of emergency obstetric care in six developing countries five years before the MDG targets for maternal and newborn health. *PLoS One* 2012;7:e49938.
- Ameh CA, van den Broek N. Making it happen: training health-care providers in emergency obstetric and newborn care. *Best Pract Res Clin Obstet Gynaecol* 2015;29:1077–91.
- Kayongo M, Rubardt M, Butera J, *et al*. Making EmOC a reality--CARE's experiences in areas of high maternal mortality in Africa. *Int J Gynaecol Obstet* 2006;92:308–19.
- Spira C, Kwizera A, Jacob S, *et al*. Improving the quality of maternity services in Uganda through accelerated implementation of essential interventions by healthcare professional associations. *Int J Gynaecol Obstet* 2017;139:107–13.
- West F, Bokosi M. Helping babies survive and empowering midwives and nurses to provide quality newborn care. *Pediatrics* 2020;146:S223–5.
- Michel-Schuldt M, Billy Dayon M, Toft Klar R, *et al*. Continuous professional development of Liberia's midwifery workforce-A coordinated multi-stakeholder approach. *Midwifery* 2018;62:77–80.
- Nove A, Hoope-Bender PT, Moyo NT, *et al*. The midwifery services framework: what is it, and why is it needed? *Midwifery* 2018;57:54–8.
- Nove A, Ten Hoope-Bender P, Boyce M, *et al*. The state of the world's midwifery 2021 report: findings to drive global policy and practice. *Hum Resour Health* 2021;19:146.
- Mekbib T, Kassaye E, Getachew A, *et al*. The FIGO save the mothers initiative: the Ethiopia-Sweden collaboration. *Int J Gynaecol Obstet* 2003;81:93–102.
- Colella M, Bisanzo M, Farquhar C, *et al*. Implementation and evaluation of an innovative leadership and teacher training program for non-physician emergency medicine practitioners in Uganda. *Afr J Emerg Med* 2019;9:25–9.
- Moran NF, Naidoo M, Moodley J. Reducing maternal mortality on a countrywide scale: the role of emergency obstetric training. *Best Pract Res Clin Obstet Gynaecol* 2015;29:1102–18.
- Ojemeni MT, Niles P, Mfaume S, *et al*. A case study on building capacity to improve clinical mentoring and maternal child health in rural Tanzania: the path to implementation. *BMC Nurs* 2017;16:57.
- Gomez PP, Nelson AR, Asiedu A, *et al*. Accelerating newborn survival in Ghana through a low-dose, high-frequency health worker training approach: a cluster randomized trial. *BMC Pregnancy Childbirth* 2018;18:72.
- Drake M, Bishanga DR, Temu A, *et al*. Structured on-the-job training to improve retention of newborn resuscitation skills: a national cohort helping babies breathe study in Tanzania. *BMC Pediatr* 2019;19:51.
- Ellard DR, Chimwaza W, Davies D, *et al*. Can training in advanced clinical skills in obstetrics, neonatal care and leadership, of



- Non-physician clinicians in Malawi impact on clinical services improvements (the ETATMBA project): a process evaluation. *BMJ Open* 2014;4:e005751–e51.
- 38 Ngongo C, Christie K, Holden J, *et al.* Striving for excellence: nurturing midwives' skills in Freetown, Sierra Leone. *Midwifery* 2013;29:1230–4.
- 39 Chi PC, Bulage P, Urdal H, *et al.* Barriers in the delivery of emergency obstetric and neonatal care in post-conflict Africa: qualitative case studies of Burundi and Northern Uganda. *PLoS One* 2015;10:e0139120.
- 40 Nyamtema AS, Urassa DP, van Roosmalen J. Maternal health interventions in resource limited countries: a systematic review of packages, impacts and factors for change. *BMC Pregnancy Childbirth* 2011;11:30.
- 41 Tuyisenge G, Hategeka C, Luginaah I, *et al.* Continuing professional development in maternal health care: barriers to applying new knowledge and skills in the hospitals of Rwanda. *Matern Child Health J* 2018;22:1200–7.
- 42 Willcox M, Harrison H, Asiedu A, *et al.* Incremental cost and cost-effectiveness of low-dose, high-frequency training in basic emergency obstetric and newborn care as compared to status quo: part of a cluster-randomized training intervention evaluation in Ghana. *Global Health* 2017;13.
- 43 Albendin-García L, Suleiman-Martos N, Cañadas-De la Fuente GA, *et al.* Prevalence, related factors, and levels of burnout among midwives: a systematic review. *J Midwifery Womens Health* 2021;66:24–44.
- 44 Ajuebor O, McCarthy C, Li Y, *et al.* Are the global strategic directions for strengthening nursing and midwifery 2016–2020 being implemented in countries? findings from a cross-sectional analysis. *Hum Resour Health* 2019;17:54.
- 45 Kemei J, Etowa J. Continuing professional development: perspectives of Kenyan nurses and midwives. *Open J Nurs* 2021;11:121–31.
- 46 Wilson-Mitchell K, Robinson J, Sharpe M. Teaching respectful maternity care using an intellectual partnership model in Tanzania. *Midwifery* 2018;60:27–9.
- 47 Afulani PA, Dyer J, Calkins K, *et al.* Provider knowledge and perceptions following an integrated simulation training on emergency obstetric and neonatal care and respectful maternity care: a mixed-methods study in Ghana. *Midwifery* 2020;85:102667.
- 48 Sami S, Amsalu R, Dimiti A, *et al.* Understanding health systems to improve community and facility level newborn care among displaced populations in South Sudan: a mixed methods case study. *BMC Pregnancy Childbirth* 2018;18:325–25.
- 49 Cadée F, Nieuwenhuijze MJ, Lagro-Janssen ALM, *et al.* The state of the art of twinning, a concept analysis of twinning in healthcare. *Global Health* 2016;12:66.
- 50 Dawson A, Brodie P, Copeland F, *et al.* Collaborative approaches towards building midwifery capacity in low income countries: a review of experiences. *Midwifery* 2014;30:391–402.
- 51 Upvall MJ. Building transformative global nursing partnerships. *Res Theory Nurs Pract* 2018;32:247–54.
- 52 Kemp J, Bannon EM, Mwanja MM, *et al.* Developing a national standard for midwifery mentorship in Uganda. *IJHG* 2018;23:81–94.
- 53 Nyhus HB, Kamara MM. Quality improvement in emergency service delivery: assessment of knowledge and skills amongst emergency nurses at Connaught Hospital, Sierra Leone. *Afr J Emerg Med* 2017;7:113–7.
- 54 Nove A, Moyo NT, Bokosi M, *et al.* The midwifery services framework: the process of implementation. *Midwifery* 2018;58:96–101.
- 55 Bergh A-M, Allanson E, Pattinson RC. What is needed for taking emergency obstetric and neonatal programmes to scale? *Best Pract Res Clin Obstet Gynaecol* 2015;29:1017–27.
- 56 Lobis S, Mbaruku G, Kamwendo F, *et al.* Expected to deliver: alignment of regulation, training, and actual performance of emergency obstetric care providers in Malawi and Tanzania. *Int J Gynaecol Obstet* 2011;115:322–7.
- 57 Islam A, Malik F, Basaria S. Strengthening primary health care and family planning services in Pakistan: some critical issues. *J Pak Med Assoc* 2002;52:2–7.
- 58 Dettinger JC, Kamau S, Calkins K, *et al.* Measuring movement towards improved emergency obstetric care in rural Kenya with implementation of the PRONTO simulation and team training program. *Matern Child Nutr* 2018;14 Suppl 1:e12465.
- 59 Ameh C, Adegoke A, Hofman J, *et al.* The impact of emergency obstetric care training in Somaliland, Somalia. *Int J Gynaecol Obstet* 2012;117:283–7.
- 60 Welsh J, Gross MM, Hanson C, *et al.* Protocol for a scoping review to identify and MAP in-service education and training materials for midwifery care in sub-Saharan Africa from 2000 to 2020. *BMJ Open* 2021;11:e047118.
- 61 Moller A-B, Welsh J, Gross MM, *et al.* Assessment of midwifery care providers intrapartum care competencies, in four sub-Saharan countries: a mixed-method study protocol. *Reprod Health* 2021;18:50.
- 62 Midwives ICo. International Confederation of midwives global standards for midwifery education; 2021.
- 63 Pattinson RC, Bergh A-M, Makin J, *et al.* Obstetrics knowledge and skills training as a catalyst for change. *S Afr Med J* 2018;108:748–55.
- 64 Midwives ICo. 10,000 happy Birthdays project evaluation executive summary International Confederation of Midwives (ICM); 2017.
- 65 Evans CL, Bazant E, Atukunda I, *et al.* Peer-assisted learning after onsite, low-dose, high-frequency training and practice on simulators to prevent and treat postpartum hemorrhage and neonatal asphyxia: a pragmatic trial in 12 districts in Uganda. *PLoS One* 2018;13:e0207909.
- 66 Geelhoed D, de Deus V, Siteo M, *et al.* Improving emergency obstetric care and reversing the underutilisation of vacuum extraction: a qualitative study of implementation in Tete Province, Mozambique. *BMC Pregnancy Childbirth* 2018;18:266–66.
- 67 Ni Bhuinneain GM, McCarthy FP. A systematic review of essential obstetric and newborn care capacity building in rural sub-Saharan Africa. *BJOG* 2015;122:174–82.
- 68 Dominic S, Bailey PE, Mwakatundu N, *et al.* Reintroducing vacuum extraction in primary health care facilities: a case study from Tanzania. *BMC Pregnancy Childbirth* 2018;18:248–48.
- 69 Okereke E, Tukur J, Oginni AB. Evaluating health workers' knowledge following the introduction of clinical mentoring in Jigawa state, Northern Nigeria. *Afr J Reprod Health* 2015;19:118–25.
- 70 van Lonkhuijzen L, Dijkman A, van Roosmalen J, *et al.* A systematic review of the effectiveness of training in emergency obstetric care in low-resource environments. *BJOG* 2010;117:777–87.
- 71 Lund S, Boas IM, Bedesa T, *et al.* Association between the safe delivery APP and quality of care and perinatal survival in Ethiopia: a randomized clinical trial. *JAMA Pediatr* 2016;170:765–71.
- 72 Nelissen E, Ersdal H, Mduma E, *et al.* Helping mothers survive bleeding after birth: retention of knowledge, skills, and confidence nine months after obstetric simulation-based training. *BMC Pregnancy Childbirth* 2015;15:190–90.
- 73 Otolorin E, Gomez P, Currie S, *et al.* Essential basic and emergency obstetric and newborn care: from education and training to service delivery and quality of care. *Int J Gynaecol Obstet* 2015;130 Suppl 2:S46–53.
- 74 Cheptum J, Gitonga M, Mutua E. Emergency obstetrics training improving skills among health care workers in Migori and Nyeri counties, Kenya. *Int J Pharm Sci Res* 2016;7:3045–52.
- 75 (ICM) ICoM. Mentoring guidelines for midwives: international Confederation of midwives; 2020.
- 76 Banke-Thomas A, Maua J, Madaj B, *et al.* Perspectives of stakeholders on emergency obstetric care training in Kenya: a qualitative study. *Int Health* 2020;12:11–18.
- 77 Chipwete S, Quenby S, Davies D. Workplace based training and audit to produce service improvement and demonstrate leadership in non-physician clinicians in Malawi. *BJOG: Int J Obstet Gynaecol* 2013;120:332–32.
- 78 Morof D, Serbanescu F, Goodwin MM, *et al.* Addressing the third delay in saving mothers, giving life districts in Uganda and Zambia: ensuring adequate and appropriate facility-based maternal and perinatal health care. *Glob Health Sci Pract* 2019;7:S85–103.
- 79 Bergh A-M, Baloyi S, Pattinson RC. What is the impact of multi-professional emergency obstetric and neonatal care training? *Best Pract Res Clin Obstet Gynaecol* 2015;29:1028–43.
- 80 Banke-Thomas A, Wright K, Sonoiki O, *et al.* Assessing emergency obstetric care provision in low- and middle-income countries: a systematic review of the application of global guidelines. *Glob Health Action* 2016;9:31880.