DEVELOPING A STRATEGIC MODEL TO ENHANCE UPTAKE AND EFFECTIVENESS OF CPD IN CLINICAL PRACTICE AMONG NURSES AND MIDWIVES IN KENYA.

Odhiambo R.

Kirinyaga University, KENYA

Correspondence : odhiamboroselyne01@gmail.com

ABSTRACT

The global Maternal Mortality Rate (MMR) is 223 per 100,000 live births, with hemorrhage being the leading cause of death. In Sub-Saharan Africa, the need for nurses and midwives is increasing. Incidentally, only 3.5% of the world's health staff are accountable for 27% of the disease burden. The depicted heavy workloads have largely contributed to poor participation in Continuous Professional Development activities among nurses and midwives. Kenyas MMR burden exceeds the global MMR, which is a great concern. However, the Nursing Council of Kenya stipulates a total of 20 CPD hours to be met annually for all nurses and midwives. The aim of the study was to develop a strategic CPD uptake model for the nurses and midwives. This study seeks to inform the public on the gaps in the uptake and implementation of CPD, and provide recommendations to improve its effectiveness. The study used both qualitative and the quantitative techniques, and adopted a Randomized Clinical Trial design. A sample of 78 nurses and midwives was obtained from a target population of 98. Quantitative data was collected using questionnaires and completion of patograph case studies. Data was analysed using SPSS version 26, to derive descriptive statistics, while qualitative data was collected through interview schedules and observation checklists, which were analysed thematically. Pearson's chi square tested the relationship between knowledge and CPD uptake in clinical practice($p=0.00$) at 95%CI. Paired t-test compared means within the control and intervention groups($t=1.000$). Despite the provision and use of BEmONC guidelines, major gaps were observed in Active Management of Third stage of labour (17.9%)and also in completion of the patograph($mean=1.7$). Despite the efforts to maintain competence levels in clinical practice, gaps pertaining to structuring and organization still exist. Theere is therefore need for continuous training to bridge quality gaps and development of a CPD uptake model that can be adopted for use by the nurses and midwives.

Key words: Continuous Professional Development, Nurses and Midwives, Model, Clinical practice.

Introduction

Continuous Professional Development (CPD) is a process through which professionals maintain, expand, and enhance their knowledge, skills, and expertise [1]. In view of nurses and midwives, CPD is essential in reducing maternal and neonatal morbidities and mortalities by equipping them with the knowledge and skills to manage obstetric emergencies effectively.

Maternal and neonatal mortality remain significant challenges, particularly in Sub-Saharan Africa, where maternal mortality rates (MMR) and neonatal mortality rates (NMR) are alarmingly high. In Kenya, for instance, the MMR stands at 378 per 100,000 live births, significantly surpassing the SDG target of 70 maternal deaths per 100,000 live births by 2030[2]. The leading causes of maternal fatalities, such as hemorrhage, hypertensive disorders, abortions, and sepsis, are preventable with timely, skilled interventions, underscoring the need for nurses and midwives, to continually update their skills and knowledge, hence, addressing obstetric emergencies.

The Nursing Council of Kenya (NCK) mandates that all nurses and midwives complete 20 hours of CPD annually, with a focus on maternal and child health. This ensures that healthcare professionals continue to provide safe, ethical, and high-quality care. However, despite this requirement, participation in CPD activities remains irregular and unstructured, often hindered by factors such as staff shortages, heavy workloads, and lack of well-structured CPD programs within healthcare facilities [3].

The lack of structured CPD programs for midwives has led to inconsistencies in clinical practice and a deficiency in critical skills necessary for the management of obstetric complications [4]. Moreover, variations in midwifery training programs, despite the International Confederation of Midwives' (ICM) established Essential Competencies for Basic Midwifery Practice, exacerbates this issue. The need for a structured CPD model that aligns with the ICM's competencies is urgent, as it would ensure adequately equipped staff with the skills to manage maternal and neonatal emergencies, improve patient outcomes, and ultimately contribute to reduction of maternal and neonatal mortality rates [5, 6].

Objectives:

i. To assess nurses and mid-wives factors influencing effectiveness of CPD activities.
ii. To develop a CPD uptake model.

Methodology

This study that used both qualitative and quantitative techniques. Participants included nurses and midwives from selected Hospitals in Kenya. Purposive and stratified random sampling methods were used to select four facilities and the 78 sampled participants respectively.

Data was collected using questionnaires, structured interviews and case study follow-up. Quantitative data was analysed using SPSS version 26 while qualitative data was analysed using the themes that emerged. Pearson's chi square was used to test association between the nurses and midwife's knowledge and CPD effectiveness in clinical practice.

The study was approved by the Chuka University research, Ethics and Review Committee (ethics committee number **NACOSTI/NBC/AC-0812).** Permission was also sought from the specific Sub-County hospitals and from Meru County Government. Potential participants were taken through informed consent procedures. Participant took part in the study voluntarily and were assured of confidentiality, privacy, and their right to withdraw from the study as and when they wish. Coded data was linked only on a paper participant tracking form which was stored in a locked file cabinet at the study site accessible only to study investigators and study clinician, after which they were transferred to research office. Instruments were checked for precision and comprehensiveness then prepared for upload. Reserve copies, including electronic sets of all data files were safely stored, and any extra information saved in hard disk drives.

Results

Results showed low participation in Continuing Professional Development (CPD) activities among nurses and midwives, alongside significant gaps in midwifery knowledge and clinical skills.

Table 1 presents results on participation in CPD activities. 68.6% of respondents had participated in professional development activities within the last 6 months while 12.8% had not engaged in professional development activities for more than 2 years implying that that there may be differences in knowledge based on levels of CPD uptake.

Table 1: Nurses and midwives last participation in CPD

Participate in professional development activity		Frequency	Percent
	less than a month ago	6	8.6
	1-6 months ago	42	60
	7-11 months ago	5	7.1
	1-2 years ago	8	11.4
	more than 2 years	9	12.8
	Total	70	100

Statistical analysis showed a strong association between CPD effectiveness and improved knowledge levels ($p < 0.001$), emphasizing the importance of CPD in enhancing clinical competencies.

Figure 1: Respondents Key job roles.

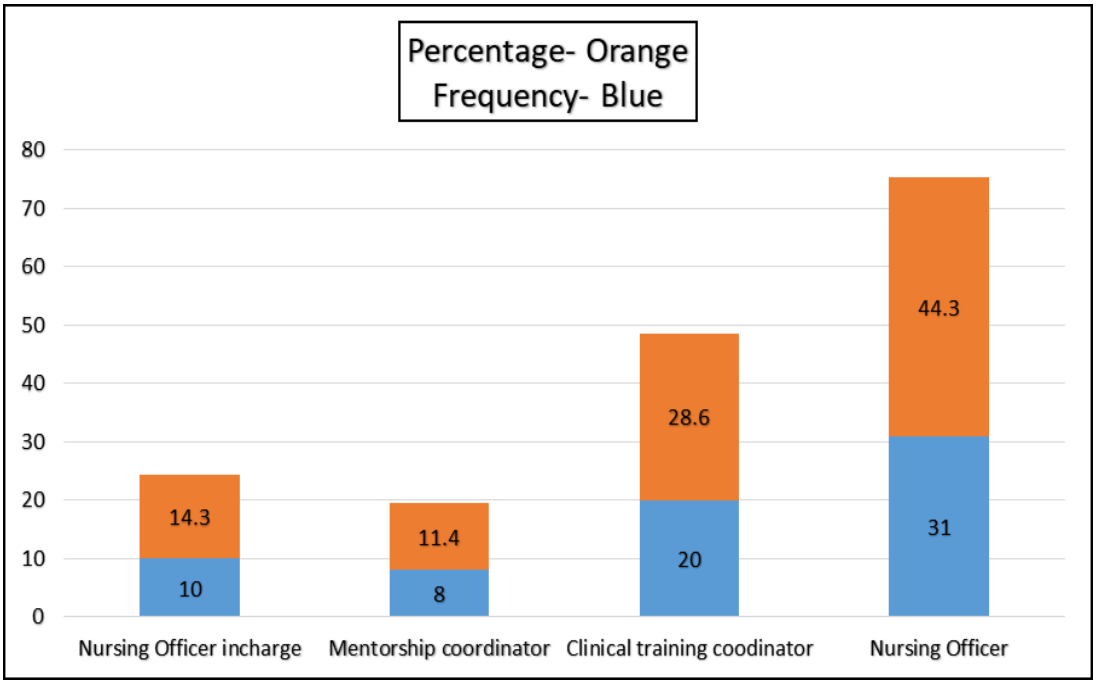


Figure 1 above shows that mentorship coordinators, comprising 11.4% played a key role in continuous learning. This is a team that is meant to take charge in mentoring and orienting young staff into developing holistically as professionals. They ensure that learning takes place in liaison with the Continuous medical education coordinator and the nursing officer in charge. However, results showed that these personnel were few across the different facilities nonetheless suggesting that this role is relevant and was actively employed within the continuing education context.

Table 2: Respondents Engagement in CPD Activities

CPD Activity	Never	Less Often	Often	More Often	Always
	Freq(%)	Freq (%)	Freq(%)	Freq (%)	Freq (%)
Weekly CPD	10(14.3)	19 (27.1)	9 (12.9)	26 (37.1)	5 (7.1)
Upgrading Program	19(27.1)	14 (20.0)	26(37.1)	6 (8.6)	4 (5.7)
Workshops	20(28.6)	35 (50.0)	7 (10.0)	0 (0.0)	7 (10.0)
Seminars	16(22.9)	31 (44.3)	9 (12.9)	5 (7.1)	7 (10.0)
Research	40(57.1)	20 (28.6)	4 (5.7)	0 (0.0)	5 (7.1)

Journaling	54(77.1)	7 (10.0)	4 (5.7)	1 (1.4)	3 (4.3)
Scientific Conferences	38(54.3)	25 (35.7)	3 (4.3)	0 (0.0)	3 (4.3)
Online Courses by NCK	12 (17.1)	9 (12.9)	14(20.)	12 (17.1)	22(31.4)

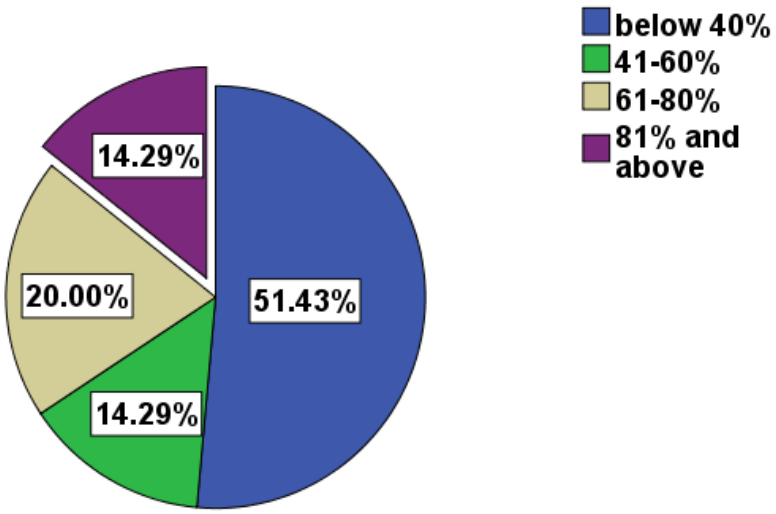
Results of this study showed that online courses by NCK seem to have a higher engagement level, with a notable portion of respondents indicating they engage in them often (20%) or always (31.4%), while scientific conferences also show a balanced distribution. This interpretation suggests a varying degree of engagement in different CPD activities among nurses and midwives.

Table 3: Respondents facilitation for CPD activities attended

Facilitation for most CPD activities attended	Self	15	21.4
	Hospital	16	22.8
	training agency	34	48.6
	Others	5	7.1

Respondents indicated that CPD activities (48.6%) were facilitated by training agencies. This highlights the reliance on external organizations specialized in providing professional development training.

Figur 2: Weekly competent time used in care, training and clinical instruction



Results showed that 14.3% of respondents spent between 41% and 60% of their weekly competent time on patient care, clinical training, and clinical instruction. This reflects a moderate level of engagement in these activities for this group.

Table 4: Utilization of midwifery clinical competency guidelines

Variable	Frequency	Percent
Facility Utilize WHO Patograph		
Yes	42	60.00%
No	26	37.10%
Don't know	2	2.90%
Updated MOH Document Available		
Yes	26	37.10%
No	17	24.30%
Don't know	27	38.60%
Usage of Manual as Reference Material		
Not at all	16	22.90%
Less often	44	62.90%
Monthly	3	4.30%

Weekly	2	2.90%
Everyday	5	7.10%
Do you have any Program on Safe Motherhood Concerns		
Yes	11	15.70%
No	51	72.90%
Don't know	8	11.40%

The study sought to find out the hospital's frequency in utilization of the manuals for reference. Responses were presented in frequencies and percentages. 62.9% of respondents indicated that they less often used manuals as reference materials which should be tied to evidence-based information to support informed decision-making in midwifery practices.

Table 5: Number of clients attended by the Nurses and midwives per week.

Number of clients attended by the Nurses and midwives/week	N	Mean	Std. Deviation
Number of antenatal clients served per week	64	47.64	35.665
Births attended per week	62	16.55	21.825
Estimate number of postpartum clients Seen per week	65	25.03	15.546
Number of newborns you attend to per week	52	20.31	15.362
Valid N (listwise)	51		

Notably, the number of births attended per week was compiled from respondents. Responses are presented in frequencies, percentages and on table 6 below. A mean of 16.55 births are attended per week, with a standard deviation of 21.825. This indicates substantial variability in the number of births attended per week. This shows that nurses and midwives play a critical role in attending births. However, the variation in workload may stem from factors such as facility size, geographic location, and patient population characteristics.

Table 6: Relationship between the nurses and midwives' knowledge and CPD uptake in clinical practice.

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.716[a]	2	.000
Likelihood Ratio	17.301	2	.000
Linear-by-Linear Association	13.505	1	.000
N of Valid Cases	70		
Chi-square value=17.716, P=0.000 df=2			

Notably, interview results indicated a marked improvement in participants' performance following training interventions. Mean scores increased from 79.30% to 91.34%, and paired sample tests confirmed a significant 35.81% improvement in clinical skills after training ($df = 24$, $p < 0.001$). These findings highlight the positive impact of structured CPD programs on clinical outcomes.

Despite these improvements, serious gaps were observed in the practice of Active Management of the Third Stage of Labour (AMTSL), with only 17.9% of participants applying this essential intervention correctly. This indicates persistent weaknesses in prevention of postpartum haemorrhage, a leading cause of maternal mortality.

Pertaining antenatal care competencies, nurses and midwives demonstrated good understanding of the Expected Date of Delivery (EDD) based on the Last Menstrual Period (LMP). However, areas with poor responses, where improvement is needed, included counseling on formulation of an individual birth plan and recognizing danger signs. Competencies on normal labor demonstrated that nurses and midwives generally have a good understanding of practices during normal labor, However, there are instances where immediate actions during labor, such as active management of the third stage of labor 12(17.9%), require more attention.

In regard to immediate newborn care, there is need for improvement in areas such as assessing the APGAR score 18(26.9%) and performing parts of the newborn resuscitation procedure 55(82.2%), where correct responses are lower compared to other aspects. Nurses and midwives demonstrated good understanding of counseling on postpartum danger signs and prevention of breast engorgement. However, the need for improvement in areas such as achieving proper breast attachment to minimize nipple cracking 22(32.8%).

Many participants demonstrated limited ability to accurately complete and interpret partographs, particularly in monitoring critical fetal parameters such as descent and cervical dilation. These skill gaps pose risks to effective labour monitoring and timely intervention.

The challenges faced by respondents in the completion of the patograph was depicted thematically in the following quotations:

"I have no time to fill the patograph"- nurses and midwives

"There is too much work I don't think I can complete this work" - nurses and midwives

"We are very few staff during the shifts so I don't think it will be possible to fill this patograph" - nurses and midwives

There was low engagement in CPD programs. More than half of the participants (54.3%) described the sessions as uninteresting, while 57.1% reported attending CPD activities mainly due to employer pressure rather than personal motivation. This lack of intrinsic motivation suggests the need for more engaging and relevant training approaches.

Barriers to CPD participation were included staff shortages (35.7%), difficulties balancing work and personal life (40%), high workload stress (52.9%), fear of competency assessments (35.7%), and unsupportive work environments (45.7%). These challenges highlight the need for systemic solutions to improve CPD accessibility and participation among nurses and midwives.

Discussion

12.8% of respondents had not engaged in professional development activities for more than 2 years. This observation is consistent with findings of a previous study [7].

The varied timing of last participation in CPD from this study highlights the need to design a

a variety of CPD options, including workshops, online courses, and conferences to accommodate different learning styles and preferences. Continuous professional development (CPD) for nurses could include involvement in workshops, seminars, conferences, research, and formal training [8]. Additionally, CPD is often a requirement for the renewal of licenses for practicing nurses [10]. Results of this study demonstrate that online courses by NCK have a higher engagement level, with a notable portion of respondents indicating they engage in them often (20%) or always (31.4%). This trend reveals the actual behaviour of nurses and midwives when they are due for renewal of their practice requiring them to have acquired 20 hours of CPD courses from programs approved by NCK. There is need to ensure that online courses offered by NCK are accessible and cover a diverse range of topics to cater for different interests and learning needs. In addition, identifying preferred workshop topics can enhance engagement, tailoring seminar topics to address a broader range of interests may boost participation since varied participation levels suggested diverse preferences[3]. Mentorship coordination team liase with education department and the nursing officer in charge in identifying and addressing knowledge and skills gaps through continuous education. However, the small representation of mentorship coordinators (11.4%) means that CPD participation is low. These findings are consistent with previous reports citing importance of providing conducive work environment and guidance for staff to enable them perceive CPD as an opportunity to advance their competence.

The observation that up to 48.6% of respondents depended heavily on training agencies to acquire CPD points to a great risk that most probably touches on lack of initiative to participate in CPD activities in a more structured, consistent and organized way. Low enrolment for CPD activities is due to poor program communication and understanding of the value of the CPD programs, lack of time and pessimistic attitude towards participation in continuous education[10, 11]

That 14.3% of the respondents spent 81% of their weekly competent time on patient care, clinical training and clinical instruction highlights inadequate time for CPDs leading to major gaps in essential competencies. Seemingly, CPD participation has not been a priority for many

participants having great implication on level of knowledge and skills in essential competencies [10].

The study results revealed major gaps in patient to staff ratio as evidenced by the number of clients attended to in one week by the nurses and midwives. This translates to serious staff workloads that contributes to poor participation of the respondents in CPD activities, eventually this leads to poor patient outcomes. Notably, inadequate healthcare workforce, limited funding, lack of self-motivation and poor CPD standardization were major barriers to engagement in CPD activities [12].

62.9% of respondents stated that the tools were less utilized demonstrating a gap to continuous updating of knowledge and skills to improve clinical practice and patient outcomes. This observation agrees with findings from another study that highlighted the importance of using clinical practice guidelines to enhance standard practices and to boost knowledge and skills [13]. Accordingly, emphasis is placed on Evidence Based Practice to ensure that knowledge and skills are improved overtime [14]. Arguably, nurses and midwives acknowledge the need of having reference materials as an important sources of information in practice [15] to evidence-based informed decision-making in midwifery practices. Thus utilization of manuals would enhance knowledge dissemination and standardization of practices across different settings.

Global statistics show that more than half of maternal deaths are attributed to hemorrhage, hypertensive disorders, and sepsis. Addressing these issues necessitates several interventions identified as the "signal functions" for Basic Emergency Obstetric and Newborn Care (BEmONC), as recommended by the United Nations [16]. Postpartum Hemorrhage remains a major burden and a leading cause of deaths in pregnant women. Women with prolonged labor (≥24 hours) were 3.4 times more likely to experience postpartum hemorrhage (PPH) compared to those with labour lasting less than 24 hours [17,18]. Effective management of the third stage of labour relies entirely on proper application of Active Management of the Third Stage of Labour (AMTSL) skills.

Respondents indicated that unplanned work schedule changes, (40%) and lack of adequate staff (35.7%) impeded engagement in CPD for many. Furthermore, balancing CPD with caretaking duties (32.9%) and duty periods (31.4%), personal activities (40%), feeling overloaded (52.9%),

lack of financial support (31.4%), affordability of sessions (30.0%), language barriers (31.4%), lack of courage for competency assessment (35.7%), and unsupportive work environment (45.7%) were cited as major barriers to participation in CPD activities. Elsewhere, heavy and fixed workloads, lack of time and unavailability of co-workers to cover for those attending CPDs [19], technology related challenges [20], unsupportive work environment [21], inadequate staffing levels, limited time available for study, lack of organizational support due to negative cultural practices, issues with CPD design and delivery, and a restricted range of CPD activities. [22]

have also been cited as major impediments to participation in CPD activities.

The partograph, which is a visual tool designed to track labour progress and monitor maternal and fetal conditions over time, is majorly used to offer a visual overview of labour and to notify obstetric care providers of any changes in maternal or fetal conditions or deviations in labour progress [23]. The World Health Organization (WHO) recommends universal use of the partograph during labour. Its routine use aids in making informed decisions for diagnosis and management of prolonged or obstructed labour [19] which contributes to 8% of maternal deaths if not appropriately managed. Effective use of the patograph is a crucial intervention for decreasing both maternal and perinatal morbidity and mortality [23].

In this study, major inconsistencies were observed in charting the various parameters, to include; baseline data, fetal and maternal parameters. These findings are consistent with previous reports indicating that prolonged and obstructed labour, along with delays in decision-making, are significant contributors to maternal and fetal mortality. These complications lead to severe hemorrhage, infections, hypertensive disorders [24].

This study highlights gaps in completeness and accuracy through observation which included; patograph halfway filled; lack of knowledge in the initial charting especially of the cervical dilatation and tie allocation; inconsistency in charting the different parameters; wrong chatting of the different parameters for instance, descent is charted using an 'X' instead of 'O', unclear charting of the contractions was observed where mild contractions are charted together with moderate contractions. These gaps have been highlighted in previous reports [25].

Participants were issued with the patographs to complete, though some of them stated that they had challenges in completing the process. Some of the statements were as follows:

"There is too much work I don't think I can complete this work" - ***nurses and midwives***

"We are very few staff during the shifts so I don't think it will be possible to fill this patograph" - ***nurses and midwives***

"Filling the patograh is very tedious, as long as the mother delivered well, I can just complete them at the last minute, I don't have to give a lot of details" - ***nurses and midwives***

"Iam not sure I know how to complete this tool, if we were trained on how to do it, maybe I will have more confidence, we shall ask thos who understand better to do it instead" - ***nurses and midwives***

These statements are consistent with previous reports that highlighted several constraints that hindered effective use of the partograph during labour namely staff shortages, lack of training, inadequate skills, and insufficient knowledge about the partograph itself [24]. These challenges compromised the quality of care provided. Similar findings were observed at Mulago Referral Hospital, where healthcare workers cited heavy workloads due to understaffing, unavailability of partographs in patient charts, lack of equipment, insufficient skills, and poor attitudes towards using the partograph as reasons for its low completion rate. A related study conducted in Malawi also highlighted key factors contributing to the underutilization of the partograph, such as staff shortages, negligence, a lack of appreciation for the partograph's importance, ineffective and inadequate supervision, lack of recognition or motivation, and skill incompetency [25].

Effectiveness of CPD is totally dependent on continuous training. This study revealed low CPD effectiveness based on the poor performance of participants in the baseline survey that assessed their knowledge and skills. However, CPD effectiveness can be improved if proper strategies are employed to ensure a more structured and organized way of ensuring knowledge and skills acquisition in clinical practice.

CPD Model: Continuous Professional Development Uptake Model on Midwifery Clinical Competencies for Nurses and Midwives (Adopted from ICM Guidelines, 2019)

The primary purpose of a CPD Framework is rooted in the principle of lifelong learning, which requires healthcare professionals to continuously engage in both formal and informal education to maintain clinical competence and acquire new knowledge and skills to enable

them expand their professional roles. One of the major objectives of this study was to develop a model on CPD uptake for nurses and midwives for adoption, as an annex to the CPD framework developed by the Nursing Council of Kenya.

Usually, nurses sign up for courses that lead to attainment of different levels of nursing practice recognized by NCK. For example, an enrolled community nurse (ECN) engaging in a full-time, part-time, or distance learning program may be upgraded to a higher rank such as a registered nurse (RN) [9]. However, CPD activities are occasionally planned for. The employer, a training agent, or sometimes the nurses and midwives individually pay for CPD activities [26]. Therefore, the significance of nurses and midwives participating in CPD as a means of ensuring ongoing expertise and being current in practice is fully acknowledged and appreciated by NCK, although, CPD programs remain typically irregular, without defined structures within hospitals. There is therefore a need to develop a standardized guideline to be accommodated in the main CPD framework provided by the nursing council of Kenya and be considered for adoption for use across the country. The proposed guideline is intended for adoption by NCK to; i) establishes minimum guidelines for all stakeholders involved in CPD, ii) standardize, regulate, strengthen, and harmonize CPD programs and activities. iii. Enhance processes and linkages within the CPD framework, iv) ensure equal access to CPD programs for nursing professionals, v) identify key areas where nursing professionals need CPD training and vi) be used by the Council to compare against international best practices, accredit CPD providers, and advocate for support in developing and training nursing professionals with a view to providing safe, ethical, competent, and high-quality care to the public.

This study seeks to develop a model that focusses on function "v" that states, "*The framework identifies key areas that nursing professionals need for CPD trainings.*" to scale up continuous education. There is need for a standardized structured way of engaging in CPD activities that the can be utilized by nurses and midwives. The model if adopted would be annexed to the existing CPD framework. The model would adopt the ICM Midwifery clinical competencies from the various categories (Table 7 below) with a focus on having all the competencies covered in 4 trimesters within the year. Suggestions will be tabled to the Nursing Council of Kenya is to consider having the CPD course content aligned to the competencies in order to maintain

relevance in practice based on the reports by many respondents in this study that many CPD topics were not relevant to practice.

The model if adopted by NCK would be recommended for adoption and use by different institutions/ health care facilities, and tailored to suit their needs, considering the existing knowledge and skills gaps in the midwifery competencies. Thus by the end of the year, the facilities should ensure that hours given for continuous education are advised by specific competencies and skills gaps. Thus, the facilities across board would be expected to offer education forums based on the competencies and using the model as a tool for reference, to cross-check that basic content from each section is regularly covered.

The CPD activities within the hospitals can be conducted through CMEs, workshops, seminars, among other methods. Development of the CPD model was guided by the concepts outlined in the 'Nursing Professional Development (NPD) Practice Model (2022).

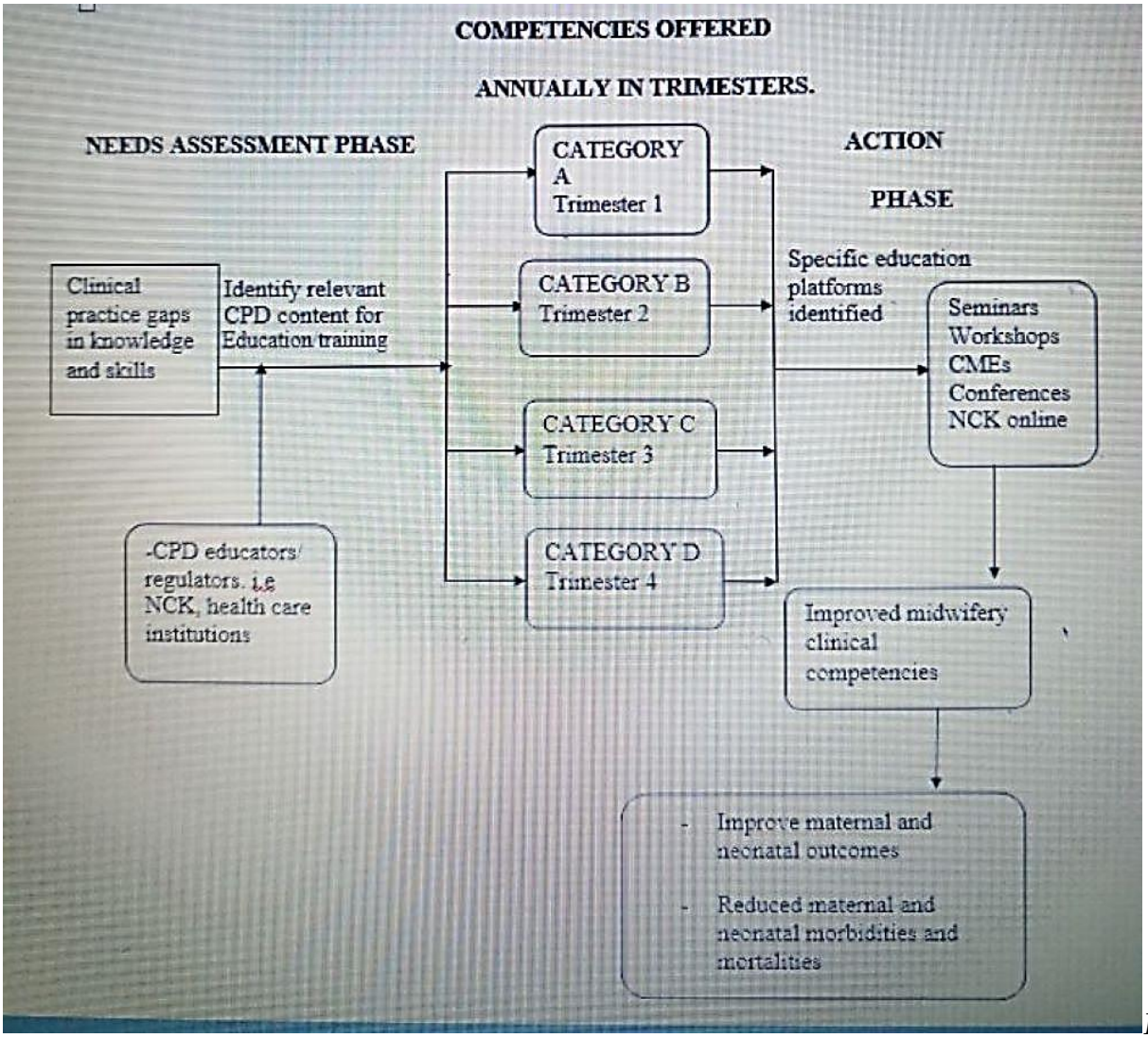


Figure 3: Proposed CPD model by Odhiambo Roselyne (2025).

Table 7: Key to proposed CPD Model

Trimester /category	Category	Key clinical skills competencies
January-March	A: Preconception and contraception	Counselling skills on Preconception care

		Family planning methods
April – June	B: Pregnancy care Competencies in this category involve evaluating the health of the woman and fetus, enhancing health and well-being, identifying pregnancy complications, and providing support to women with unexpected pregnancies.	Performing focused obstetric examination Counselling and testing HIV PMTCT care Counselling on Individual birth plan and complication readiness Fetal monitoring
July-September	C: Labor and delivery care Competencies in this category focus on assessing and caring for women during labor to support physiological processes and ensure a safe birth, providing immediate care to the newborn, detecting complications in the mother or infant, stabilizing emergencies, and making referrals when necessary.	Management of complications like shoulder dystocia, PPH, Severe pre-eclampsia with MgSo4 Performing spontaneous vaginal delivery Active Management of Third stage of labour APGAR scoring for the newborn Induction of labour Monitoring labor progress using the WHO patograph Repair of perineal tears Performing a vaginal examination Manual removal of the placenta Administering an episiotomy and its repair
October - December	D: Care during postpartum period Competencies in this category include performing continuous	Perform postnatal assessment for a mother Counsel on immediate newborn care

	health assessments for both the mother and infant, providing health education, supporting breastfeeding, identifying and managing complications, stabilizing and referring in emergencies, and offering family planning services.	

Conclusion

The **CPD Uptake Model** proposed herein for midwifery clinical competencies is an essential step toward improving professional development of nurses and midwives in Kenya. By structuring CPD activities, aligning them with relevant competencies, and ensuring their integration into healthcare facilities, the model will enhance clinical competence of nurses and midwives, ultimately improving the quality of care for mothers and new-borns. Adopting this model will not only strengthen the healthcare workforce but also contribute to a more effective, accountable, and competent health system that meets the evolving needs of the Kenyan population.

References

1. Sherman L.T., Chappell K.B. (2018). Global perspective on continuing professional development. The Asia pacific scholar 3(2):1.
2. Davidson K.W., Terry M.B., Braveman P., Reis P.J., Timmermans S., Epling Jr JW (2022). Maternal mortality: a National Institutes of Health pathways to prevention panel report. Obstetrics & Gynecology 5:10-97.
3. Sookram B.P., Botha R., Naidoo N. (2023). Accreditor and employer experiences of emergency care CPD provision. International Paramedic Practice 13(3):42-50.
4. Bäck L., Karlström A. (2020). Developing confidence during midwifery training: the experience of Swedish final year students. Sexual & Reproductive Healthcare 25:100535.
5. International Confederation of Midwives (ICM). Essential competencies for midwifery practice. The Hague, Netherlands: International Confederation of Midwives; 2019.

6. Koblinsky M., Moyer C.A., Calvert C., Campbell J., Campbell O.M., Feigl A.B., Graham W.J., Hatt L., Hodgins S., Matthews Z., McDougall L. (2016). Quality maternity care for every woman, everywhere: a call to action. Lancet 388(10057):2307-20.
7. Gitonga L.K., Muriuki N.S. (2014). Evaluation of midwives' and nurses' continuing professional development in reducing maternal and neonatal mortality in Embu county, Kenya. Open Journal of Obstetrics and Gynecology 4(6):249-59.
8. Ni C, Hua Y., Shao P., Wallen G.R., Xu S., Li L (2014). Continuing education among Chinese nurses: A general hospital-based study. Nurse education today 34(4):592-7.
9. Nursing Council of Kenya. Nursing Council of Kenya; 2021. https://engagement.wcea.education/nck
10. Viljoen M., Coetzee I., Heyns T. (2017). Critical care nurses' reasons for poor attendance at a continuous professional development program. American Journal of Critical Care 26(1):70-6.
11. Hosey K.N., Kalula A., Voss J. (2016). Establishing an online continuing and professional development library for nurses and midwives in East, Central, and Southern Africa. Journal of the Association of Nurses in AIDS Care 27(3):297-311.
12. Feldacker C., Pintye J., Jacob S., Chung M.H., Middleton L., Iliffe .J, Kim H.N. (2017). Continuing professional development for medical, nursing, and midwifery cadres in Malawi, Tanzania and South Africa: A qualitative evaluation. PloS one 12(10):e0186074.
13. McGonigle D., Mastrian K.. Nursing informatics and the foundation of knowledge. Jones & Bartlett Learning; 2024 Mar 21.
14. Gong S, Li J, Tang X, Cao X (2022). Associations among professional quality of life dimensions, burnout, nursing practice environment, and turnover intention in newly graduated nurses. Worldviews on Evidence-Based Nursing 19(2):138-48.
15. Alving BE, Christensen JB, Thrysøe L (2018). Hospital nurses' information retrieval behaviours in relation to evidence based nursing: a literature review. Health Information & Libraries Journal 35(1):3-23.
16. World Health Organization (WHO). United Nations Population Fund, United Nations Children's Fund, Averting Maternal Death and Disability Program. Monitoring Emergency Obstetric Care: A Handbook. Geneva: WHO; 2018

17. Amanuel T, Dache A, Dona A (2021). Postpartum hemorrhage and its associated factors among women who gave birth at Yirgalem General Hospital, Sidama Regional State, Ethiopia. Health Services Research and Managerial Epidemiology **8:23333928211062777**.
18. Ngwenya S (2016). Postpartum hemorrhage: incidence, risk factors, and outcomes in a low-resource setting. International journal of women's health 2:647-50.
19. Lhbibani A, Lamiri A, Lotfi S, Tridane M, Belaaouad S (2021). Factors hampering the participation of nursing staff in the continuing education activities of hospitals centers in the Casablanca-Settat region. The Open Nursing **Journal 10;15(1).**
20. Mlambo M, Silén C, McGrath C (2021). Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. BMC nursing 20(1):62.
21. Jamuna N, Thayumanavan M (2023). Utilization of Partograph for Labor Management Among Healthcare Providers in Healthcare Facilities in India: A Systematic Review. **Cureus 15(8)**
22. Zelellw DA, Tegegne TK (2018). Level of partograph utilization and its associated factors among obstetric caregivers at public health facilities in East Gojam Zone, Northwest Ethiopia. PloS one 13(7):e0200479.
23. Mezmur H, Semahegn A, Tegegne BS (2017). Health professional's knowledge and use of the partograph in public health institutions in eastern Ethiopia: a cross-sectional study. BMC pregnancy and childbirth 17:1-7.
24. Kemei J, Etowa J (2021). Continuing professional development: Perspectives of Kenyan nurses and midwives. Open J Nurs 11(3):121–131.