Evidence-based inpatient postnatal care among women in a national hospital in Kazakhstan: a best practice implementation project

Paolo Colet PhD, MAN, RN, RM,[1] Gulzhanat Aimagambetova PhD, MD[1] and Kapiza Kossybayeva BApN[1,2]

[1]School of Medicine, Nazarbayev University, [2]University Medical Center, National Research Center for Maternal and Child Health, Nur-Sultan, Kazakhstan

ABSTRACT

Objective: The current project generally aims to assess compliance with evidence-based criteria regarding postnatal care among women in a national hospital in Kazakhstan.

Introduction: Improvements in reducing maternal and infant mortality in Kazakhstan have been noted over the past 2 decades. However, recent studies have indicated that care given to women during the perinatal period, which includes the postnatal period, is unsatisfactory. In addition, service delivery remains unstandardized, while outdated and inconsistent application of practice guidelines are observed in the clinical setting.

Methods: Following the JBI Practical Application of Clinical Evidence System and Getting Research into Practice audit and feedback tool with three phases of activities, this project utilizes an implementation framework that incorporates quality improvement. Also, the audit tool consists of seven criteria to assess compliance with evidence-based postnatal care.

Results: Results indicate varying levels of compliance with the seven criteria used in this project. Criteria 1 and 7, which document postnatal plan and psychological assessment, garner the highest compliance at 100% in baseline and follow-up data collection. The compliance rate on criterion 4, which discusses the prevention of sudden infant death syndrome, decreases from 64% on the baseline to 29% on the follow-up. Similarly, criterion 6, which provides information about bottle feeding, exhibits further decrease with compliance from 43 to 40%. Importantly, increased compliance was noted on criterion 5, which is about breastfeeding, from 58 to 95% from the baseline and follow-up audit.

Conclusion: The current study successfully implements evidence-based inpatient postnatal care in Kazakhstan and reveals varying results on compliance and the increasing knowledge of nurses and midwives on evidence-based postnatal care.

Key words: clinical audit, evidence-based practice, implementation, Kazakhstan, quality improvement

JBI Evid Implement 2020; 18:318–326.

What is known about the topic?
- Several scholars have argued that limited attention is paid to postnatal care among women, whereas others have mentioned that this topic is neglected.
- Postnatal care services remain fragmented and exhibit poor quality.
- To address the concern during postnatal care, health authorities worldwide developed evidence-based guidelines for health practitioners.

What does this article add?
- While the project is successful, the findings indicated varying levels of improvement in nurses', and midwives' knowledge and compliance on seven criteria used in the study.
- The use of leaflet was effective in supplementing patient education.
- The barriers identified were lack of time to read and search for current literature especially in local language and ineffective teaching strategy.

Correspondence: Paolo Colet, PhD, MAN, RN, RM, School of Medicine, Nazarbayev University, Nur-Sultan, Kazakhstan.
E-mail: paolo.colet@nu.edu.kz
DOI: 10.1097/XEB.0000000000000234

Background

Kazakhstan is reforming its health care system from the post-Soviet model to the modern healthcare standard.[1] To promote maternal and infant health, the Ministry of Health and several agencies in the country

implement a series of measures, such as providing training to its workforce, building new health facilities, and developing guidelines.[2] In the conclusion of the Millennium Development Goals, progress on reducing maternal and infant mortality in Kazakhstan between 1990 and 2015 are documented.[2] Although improvements in reducing maternal and infant mortality in the country have been noted, studies indicate that the care given to women during the perinatal period, which includes the postnatal period, is unsatisfactory.[3,4] Moreover, service delivery remains unstandardized.[2,5] Significantly, international literature from several countries has noted similar results.[6,7] In this article, the term postnatal care, which refers to the care provided to women after birth and to infants up to 6 weeks,[8] is used interchangeably with the term postpartum care.

A local study conducted in the eastern province of Kazakhstan used an assessment tool developed by the WHO and found the poor quality of hospital maternal care.[4] Moreover, Tamburlini *et al.*[9] conducted a study regarding the quality of maternal and neonatal care in Albania, Turkmenistan, and Kazakhstan and found that most women commonly complain about the lack of sufficient information on such topics. Furthermore, they reveal that the hospital staff cited certain reasons with regard to the finding such as the conflict among existing guidelines, lack of training regarding the updated maternal and childcare guidelines, and lack of commitment to quality improvement. Furthermore, the WHO posited that the care rendered during perinatal period in Kazakhstan is noncompliant with the best practice standards and recommendations.[10(p.3)]

In Kazakhstan, maternal and child health measures are established in the clinical setting where the majority of the services are delivered.[2] However, such measures have not been clearly informed by research evidence. Therefore, empirical studies must be conducted to determine the effect of such measures.[2] As the most abundant healthcare providers, nurses and midwives are in the position of change agents to take this opportunity for promoting health during the postnatal period. Hence, this evidence implementation project generally aims to assess compliance with evidence-based criteria regarding postnatal care among women in a national hospital in Kazakhstan.

Objectives

Specifically, this article intends

- to determine the nurses', and midwives' current compliance regarding evidence-based criteria in postnatal care;
- to reflect on the results from the baseline audit and design and implement strategies to address areas of noncompliance with best practices in postnatal care; and
- to improve knowledge and compliance about evidence-based postnatal care among nurses and midwives.

Methods

The current study is a quality improvement project using the JBI Practical Application of Clinical Evidence System (JBI PACES) and Getting Research into Practice (GRiP) audit and feedback tool. The JBI PACES and GRiP framework for promoting evidence-based health care involved three phases of activity such as

(1) establishing a team for the project and undertaking a baseline audit based on the criteria informed by the evidence;
(2) reflecting on the results of the baseline audit and designing and implementing strategies to address noncompliance observed in the baseline audit by following the JBI and GRiP framework; and
(3) conducting a follow-up audit to assess the results of the interventions implemented to improve practice and to identify future practical issues to be addressed in subsequent audits.

The approval to conduct this quality improvement project was obtained from the team leader's institution (IREC No: 52/30052018) and from the participating hospital.

Setting and respondents

The current study was conducted within the postnatal department of the national hospital. This hospital is a multidisciplinary health facility with a 500-bed capacity located in the capital of Kazakhstan. The hospital annually records approximately 15 000 inpatient admissions.[11] The postnatal department with a 30-bed capacity has an average of eight to 10 patient discharges daily.

The Raosoft online sample calculator was used to calculate the sample size of the study.[12] Given that approximately 240–300 patients from the postnatal unit are discharged per month, a minimum of 88 respondents should be gathered, with a 95% confidence interval. A consecutive sampling technique was used to gather the respondents and to review their charts for each of the baseline and follow-up audits.

Data analysis

Descriptive statistics were used to analyze the data. In particular, the study employed frequency and

percentage for the baseline and follow-up audits, respectively. In addition, JBI PACES was used for data entry and analysis. Only the primary investigator can access this password-protected application.

Phase 1: Team establishment and baseline audit

Team establishment

Prior to the start of the project, a team of clinicians and academics were identified and notified. Subsequently, the project leader conducted a meeting and provided information about the project, including its process and the team members' involvement in various capacities. Their involvement was not limited to support, data collection, feedback report, educational support, and assistance in the implementation of best practice postnatal care. Furthermore, members responsible for collecting the data and implementing strategies to enhance evidence-based in-patient postnatal care were trained. The project leader was responsible for managing the team, the project, and the timeline. Also, initial meetings with the stakeholders were conducted.

Audit process

During the audit process, seven audit criteria that were drawn from evidence-based guidelines from the National Institute for Health and Care Excellence (NICE) and summarized in a JBI evidence report were employed (Table 1).[13,14] The permission to use the seven criteria was obtained from the NICE office through email. Initially, the baseline audit was conducted to determine the nature of the gap between the current practice and best practice in postnatal care. Data were collected during the day from Mondays to Fridays.

Several cultural considerations were observed during the data collection phase. The patient, together with his/her spouse or family member, was approached and invited by the research team into a private room after the physician ordered discharge from the hospital. Information about the project was disclosed, and a written informed consent was obtained. The criteria for the selection of participants were physically and mentally competent Kazakh postnatal women, who can read and write in Russian or Kazakh languages, 18 years of age or above, and provided consent to participate.

The audit form for patients consisted of five statements or criteria (criteria 2–6) related to the best practices in postnatal care. For the criteria around infant feeding (criteria 5 and 6), breastfeeding and bottle feeding do not imply that both are equal. Breastfeeding was emphasized over the other options. This information was extremely sensitive, and so consensus was gathered among stakeholders for the use of these two criteria. Moreover, the form was developed with confidentiality and anonymity given that no identifiable data or questions regarding the participants' sociodemographic characteristics were collected. Furthermore, the participants were instructed not to write anything that may disclose their identification on the form. The audit form was answered with a 'yes', 'no', and 'not sure' in a box. In addition, the participants were given 3–5 min or below to answer the form. The completed audit form was handed by the participants to the investigator. After the respondent completed the audit form, the investigator reviewed the patient's chart according to criteria 1 and 7. In particular, the audit form that consisted of the respondent's chart was marked with 'yes' or 'no' in a box format according to criteria 1 and 7. No other data or information were obtained from the patient's chart.

The audit tool was translated prior to the data collection. A certified translator and one of the research team members independently translated the audit form into Russian and Kazakh following a forward translation method. Subsequently, a meeting was convened, and the team members created a solo version of the Russian and Kazakh audit tool, along with the two sets of translated audit tools. Members of the Hospital Institutional Review Board also reviewed the translated audit form and made suggestions. Finally, after incorporating the review committee's suggestion, a final solo Russian and Kazakh version was created and initially tested among five postnatal women. The respondents during the pilot testing were not included in the baseline and follow-up audit analysis. During the pilot testing, participants were asked to answer the audit form and to provide their comments on items that they can hardly understand. The result of the pilot testing yielded no changes to the tool based on respondents' comments. The baseline audit was conducted in January 2019.

Phase 2: Design and implementation of strategies to improve practice (Getting Research into Practice)

This phase of the study focuses on gaining an understanding of the barriers or gaps between the current practice and best practice in postnatal care. These barriers were elicited from the baseline audit. When they were identified and discussed with the team and with the stakeholders, tailored strategies were implemented to overcome the barriers. In addition, the JBI GRiP tool was used and strategies and resources were formulated to facilitate our discussion. Subsequently, a GRiP report was generated by outlining the implementation plan on postnatal care, and each member of the unit was

Table 1. Audit criteria, sample, and approach to the measurement of compliance with best practice

Audit criterion	Audit guide	Sample		Method used to measure % compliance with best practice
		Baseline audit	Follow-up audit	
The woman and baby's individualized postnatal care plan is reviewed and documented at each postnatal contact.	This criterion is achieved if A written entry (mention and description) on the progress notes or a document attached is evident in the patient's chart. The written entry or document should include information about The name and contact information of the health provider involved or an alternative contact in case of emergency for 24 hours A written plan for the occurrence of postnatal complication (thromboembolism, hypertension, diabetes, and wound care). Moreover, a plan for motherhood adjustment, emotional wellbeing, feeding, and contraception is also included Auditor marks 'Yes' if all components are documented or could be found in the patient's chart 'No' if none or a component is missing	88 Patients' charts	81 Patients' charts	By checking patients' charts including the progress notes and other relevant document attached
Women are advised, within 24 hours of the birth, of the symptoms and signs of conditions that may threaten their lives and require them to access emergency treatment.	This criterion is achieved if The woman perceived awareness about the symptoms and signs of postnatal life-threatening conditions The patient marks 'Yes' if she thinks or feels informed 'No' if she does not think or feel that she was informed 'Not sure' if she is unsure whether she was informed	88 Patients	81 Patients	By conducting a patient survey upon their discharge from the hospital
Women or main carers of babies are advised, within 24 hours of the birth, of the symptoms and signs of potentially life-threatening conditions in the baby that require emergency treatment.	This criterion is achieved if The woman feels informed about the symptoms and signs of potentially life-threatening conditions for the baby The patient marks 'Yes' if she thinks or feels informed 'No' if she does not think or feel that she is informed 'Not sure' if she is unsure whether she was informed	88 Patients	81 Patients	By conducting a patient survey upon their discharge from the hospital
Women, their partner or the main carer are given information on the association between cosleeping and SIDS at each postnatal contact.	This criterion is achieved if The woman feels informed about the association between cosleeping and SIDS The patient marks 'Yes' if she thinks or feels informed 'No' if she does not think or feel that she is informed 'Not sure' if she is unsure if she was informed	88 Patients	81 Patients	By conducting a patient survey upon their discharge from the hospital
Women receive breastfeeding support from a service that uses an evaluated, structured program.	This criterion is achieved if The woman feels satisfied with the breastfeeding support The patient marks 'Yes' if she feels satisfied 'No' if she does not feel satisfied	88 Patients	81 Patients	By conducting a patient survey upon their discharge from the hospital

Table 1. (*Continued*)

Audit criterion	Audit guide	Sample		Method used to measure % compliance with best practice
		Baseline audit	Follow-up audit	
Information about bottle feeding is discussed with women or main carers of formula-fed babies.	This criterion is achieved if The woman feels satisfied with feeding support The patient marks 'Yes' if she feels informed and satisfied 'No' if she does not feel informed and unsatisfied	88 Patients	81 Patients	By conducting a patient survey upon their discharge from the hospital
Women have their emotional wellbeing, including their emotional attachment to their baby, assessed at each postnatal contact.	This criterion is achieved if A written entry (assessment, management and referral) on the progress notes or a document attached is present on the patient's chart Auditor marks 'Yes' if an assessment [emotional wellbeing, relationship with their baby (emotional attachment)] has been done and documented on the patient's chart. If diagnosed, a plan of management and referral to a specialist is also documented 'No' is written if no documented assessment or management plan and referral is present on the patient's chart	88 Patients' charts	81 Patients' charts	By checking the patients' charts including the progress notes and other relevant document attached

SIDS, sudden infant death syndrome.

informed. This phase was conducted over a 3-month period. A discussion of our strategies is reported in the results section.

Phase 3: Follow-up audit post implementation of change strategy

This stage assessed whether the postintervention resulted in the improvement of compliance with the best practice postnatal care and further identified areas that must be enhanced. The follow-up audit used the same criteria utilized to the baseline audit. No variations were found in the method to measure compliance with best practice criteria and setting. A total of 81 respondents were recruited during this stage due to time constraints. The follow-up data were coded and analyzed into the PACES program. Results were subsequently compared with the baseline audit to determine any change in the compliance rate. This follow-up audit was conducted in late August 2019.

Results

Phase 1: Baseline audit

Figure 1 reflects the baseline compliance with each audit criterion involving 88 respondents. Criteria numbers 1 and 7 garnered the highest compliance at 100%. Low-to-moderate compliance is found in criteria 6, 5, 4, 3, and 2 at 43, 58, 64, 69, and 73%, respectively.

Phase 2: Strategies for Getting Research into Practice

Based on the meeting and discussion with the physicians' leadership, the chief midwife of the postnatal unit, and the project team, we found that providing an informal in-house educational training among nurses and midwives is the most important strategy to enhance compliance with postnatal care. This strategy is chosen for several reasons.

The educational training consisted of a presentation of the current project and its initial findings, followed by a discussion around evidence-based postnatal care, and the principles of the teach-back method for patient teaching. On succeeding months, supplemental materials were provided including the JBI evidence summaries, which were translated into the local language and distributed to nurses and midwives in the unit. Moreover, a leaflet about breastfeeding was developed for patients (the corresponding author may be contacted for a copy of these resources in Russian). With regard to the criteria on infant feeding, nurses and midwives were advised that the information about breastfeeding is emphasized

Criteria Legend

1. The woman and baby's individualized postnatal care plan is reviewed and documented at each postnatal contact. (88 of 88 samples taken)
2. Women are advised, within 24 hours of the birth, of the symptoms and signs of conditions that may threaten their lives and require them to access emergency treatment. (88 of 88 samples taken)
3. Women or main carers of babies are advised, within 24 hours of the birth, of the symptoms and signs of potentially life-threatening conditions in the baby that require emergency treatment. (88 of 88 samples taken)
4. Women, their partner or the main carer are given information on the association between co-sleeping and sudden infant death syndrome (SIDS) at each postnatal contact. (88 of 88 samples taken)
5. Women receive breastfeeding support from a service that uses an evaluated, structured program. (88 of 88 samples taken)
6. Information about bottle feeding is discussed with women or main carers of formula-fed babies. (88 of 88 samples taken)
7. Women have their emotional wellbeing, including their emotional attachment to their baby, assessed at each postnatal contact. (88 of 88 samples taken)

Figure 1. Baseline compliance with best practice for audit criteria (%).

above bottle feeding. Thus, such information should empower and educate the patient regarding the effect of breastfeeding on their health and on their newborn. This phase ran over 3 months from May 2019. Table 2 summarizes the identified barriers, strategies, resources, and outcomes.

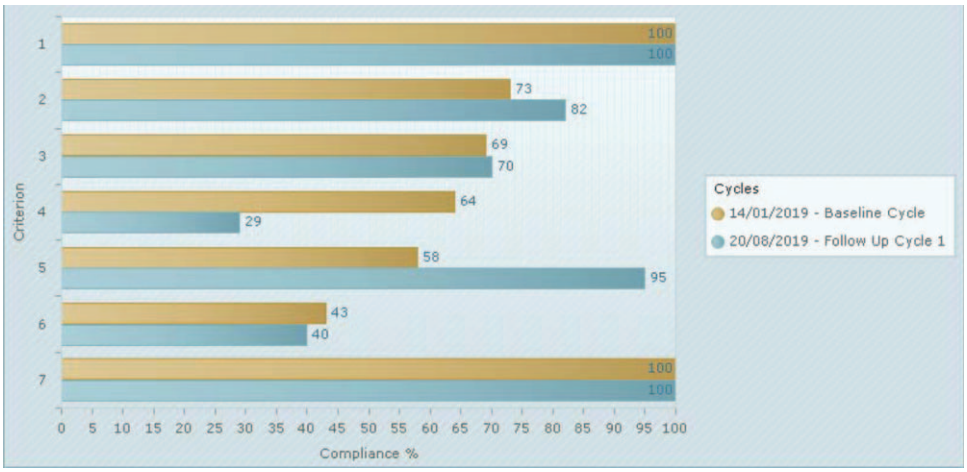
Phase 3: Follow-up audit

Figure 2 reflects the baseline and the follow-up audit and compliance report according to each audit criterion involving 81 respondents. Criteria 1 and 7 remained at 100% compliance. Furthermore, compared with the baseline data, compliance with criteria 3, 2, and 5 notably

Table 2. Getting Research into Practice matrix

Barrier	Strategy	Resources	Outcomes
Lack of time to read and search for current literature	Educate nurses and midwives about the current evidence on postnatal care	Translation of materials into local language Invite experts on topics related to postnatal care	Satisfaction of nurses and midwives on the educational session A target of >61% staff participated in the training
Ineffective patient teaching strategy Limited access to evidence-based materials for nurses and patients	Information session about the teach-back method Translate current evidence on postnatal care from JBI Develop educational material for patients	Discussion of the teach-back method JBI evidence summaries Current evidence from the literature on breastfeeding	Understanding of the basics of the teach-back method Satisfaction of nurses on the printed educational materials Patients' statement of their satisfaction towards the information

JBI, Joanna Briggs Institute.



Criteria Legend

1. The woman and baby's individualized postnatal care plan is reviewed and documented at each postnatal contact. (81 of 81 samples taken)
2. Women are advised, within 24 hours of the birth, of the symptoms and signs of conditions that may threaten their lives and require them to access emergency treatment. (81 of 81 samples taken)
3. Women or main carers of babies are advised, within 24 hours of the birth, of the symptoms and signs of potentially life-threatening conditions in the baby that require emergency treatment. (81 of 81 samples taken)
4. Women, their partner or the main carer are given information on the association between cosleeping and sudden infant de ath syndrome (SIDS) at each postnatal contact. (81 of 81 samples taken)
5. Women receive breastfeeding support from a service that uses an evaluated, structured program. (81 of 81 samples taken)
6. Information about bottle feeding is discussed with women or main carers of formula-fed babies (81 of 81 samples taken)
7. Women have their emotional wellbeing, including their emotional attachment to their baby, assessed at each postnatal contact. (81 of 81 samples taken)

Figure 2. Compliance with best practice according to the audit criteria of follow-up audit compared with baseline audit (%).

improved at 70, 82, and 95%, respectively. Significantly, low compliance was observed for criterion 4 at 29%. This finding was inconsistent with the assumption given that this criterion garnered a 64% compliance rate during the baseline audit. Similarly, a decrease in compliance was observed in criterion 6 from 43 to 40% at the baseline and follow-up data collection.

Discussion

Following JBI strategies, this project is the first attempt to examine the current practice and implement evidence-based postnatal care in a national hospital in Kazakhstan. Baseline and follow-up data were gathered, and barriers, actions, and resources were identified using the JBI PACES and GRiP tools. However, this project poses several limitations. First, the perception of compliance was merely derived from patients. Second, in terms of implementation strategies, a one-time educational training was only conducted for nurses and midwives. Third, nonprobability sampling was used to recruit respondents.

Notwithstanding these limitations, the study revealed varied improvements from low to moderate increase in compliance to evidence-based postnatal

care. On one hand, criteria 1 (the woman and baby's individualized postnatal care plan is reviewed and documented at each postnatal contact) and 7 (women have their emotional wellbeing, including their emotional attachment to their baby, assessed at each postnatal contact) consistently garnered a 100% compliance rate from the baseline and follow-up audit. This finding can be explained where the hospital has possibly adopted the recommendations from the University of Pittsburgh Medical Center when they conducted an evaluation on the hospital pregnancy care.[15]

Moreover, minimal to moderate increases with compliance to several criteria were noted, thereby providing opportunity to improve these criteria. Examples are the criteria 2 and 3, which inform the patients or carers about reportable life-threatening conditions. This result indicated that several postnatal women fail to receive information about reportable life-threatening conditions. This finding has two possible explanations. First, during our discussion with nurses, they informed us that due to a high number of patients and understaffing, they focus instead on providing physical care and little attention on educating the patients. Second, patients, who served as participants, may not recall that such information was given because they focus on their baby's condition and their recovery. However, Dauletyarova *et al.*[4] cited the WHO (2005) and posited that 'quite often the evidence presented by patients could serve as a more valuable information source as compared to evidence was presented by health care professionals'.

Contrasting findings were observed in criteria around infant feeding. Initially, criteria 5 and 6 garnered the lowest compliance during the baseline audit. After the intervention, increase in compliance was subsequently noted in criterion 5 regarding breastfeeding, which suggests that patient received evidence-based breastfeeding support. Conversely, in terms of providing information about bottle feeding to patients who use milk formula, the findings indicated further decrease in compliance. This result may be explained by the fact that nurses and midwives are not comfortable with providing information on bottle feeding given the United Nations Children's Fund and WHO's mandate of exclusive breastfeeding, and their hospital policy. Likely, the staff are not prepared for adopting the criterion. Moreover, the staff clearly demonstrated critical thinking by using this evidence to guide their decision on whether it is appropriate for the patient. Essentially, health practitioners are in a position to educate postnatal women about infant feeding and nutrition,[16] since it has been recognized that the feeding decision is influenced by education and several other factors,[17(p.6)] and let the mother choose without violating the principle of reproductive health.[18]

In relation to the strategies used to implement best practice in postnatal care, the use of a leaflet to supplement patient education about breastfeeding was apparently effective for this project. However, the use of an evidence summary to educate nurses and midwives about bottle feeding and learning about the teach-back method seems challenging according to the low compliance with the particular criterion. The possible reason for this result is that they lack the time to read all these summaries and master the content, thereby preventing them from educating patients or applying the principles of the teach-back method. Evidently, nurses and midwives should attend formal continuing education regarding evidence-based postnatal care and teach-back methods for the full integration of the shift in postnatal care practice.

A decrease in compliance was noted for criterion 4. This finding was unexpected given that more than half (64%) of the nurses and midwives educate patients about sudden infant death syndrome (SIDS) during the baseline audit. Notably, this result further decreased to less than a third (29%) in the follow-up audit. Therefore, these data must be carefully interpreted because anecdotal reports from nurses and midwives indicated knowledge and awareness about SIDS. One possible reason for this finding is that nurses and midwives might focus on other criteria, thereby disregarding the importance of SIDS. Another possible reason might be that patients were overwhelmed with the amount of information presented during the postnatal period and do not remember about SIDS. This finding warrants further investigation.

In summary, the findings of this project provide important insights into implementing evidence-based postnatal care in Kazakhstan. Although minimal improvement was noted, this study marks a promising start, particularly for a post-Soviet country that has failed to conduct this type of implementation study previously before. Continued stakeholder support, identification of a local opinion leader, and formal educational strategies and practical reminder strategies must be provided for sustainability.

Conclusion

Based on the objectives of this project, the study was successful to a certain degree for increasing nurses, and midwives' compliance and knowledge about evidence-based inpatient postnatal care in Kazakhstan. Continuing follow-up audits involving local staff members from the unit should be conducted in the future. Thus, nurses and

midwives will be empowered to incorporate evidence-based postnatal care into their clinical practice.

Acknowledgements

The authors would like to acknowledge Massimo Pignatelli and Nancy Stitt from Nazarbayev University, School of Medicine, for their support and insights into the project. Gratitude is also extended to hospital management, nurses, midwives, and especially to Gaukhar Analbaeva. Finally, we thank Alexa McArthur from the JBI, who reviewed the manuscript and provided feedback.

Conflicts of interest

The authors report no conflicts of interest.

References

1. Aizhan Z, Saipinov D. The stages of the healthcare system reform of the Republic of Kazakhstan. *Procedia* 2014; 140: 657–61.
2. Organisation for Economic Co-operation, Development. OECD reviews of health systems: Kazakhstan 2018. Paris: OECD Publishing; 2018.
3. Craig BJ, Kabylbekova Z. Culture and maternity care in Kazakhstan: what new mothers expected. *Health Care Women Int* 2015; 36: 41–56.
4. Dauletyarova M, Semenova Y, Kaylubaeva G, *et al*. Are women of East Kazakhstan satisfied with the quality of maternity care? Implementing the WHO tool to assess the quality of hospital services. *Iran J Public Health* 2016; 45: 729–38.
5. Fogel N. The inadequacies in postnatal health care. *CMRP* 2017; 7: 16–7.
6. Chen L, Qiong W, van Velthoven MH, *et al*. Coverage, quality of and barriers to postnatal care in rural Hebei, China: a mixed method study. *BMC Pregnancy Childbirth* 2014; 14: 31.
7. Panagopoulou V, Kalokairinou A, Tzavella F, *et al*. A survey of Greek women's satisfaction of postnatal care. *AIMS Public Health* 2018; 5: 158–72.
8. World Health Organization. WHO recommendations on postnatal care of the mother and newborn. Geneva: World Health Organization; 2013.
9. Tamburlini G, Siupsinskas G, Bacci A. Quality of maternal and neonatal care in Albania, Turkmenistan and Kazakhstan: a systematic, standard-based, participatory assessment. *PLoS One* 2011; 6: e28763.
10. World Health Organization. Support for maternal and child health in Kazakhstan. Copenhagen: WHO Regional Office for Europe; 2011.
11. University Medical Center. National Research Center for Maternal and Child Health. Nur-Sultan: UMC. XXXX; Available from: http://umc.org.kz/en/about/filialy/nncmd/. [Cited 23 November 2019].
12. Raosoft. Sample size calculator. Seattle: Raosoft; 2004; Available from: http://www.raosoft.com/samplesize.html. [Cited 23 November 2019].
13. National Institute for Health and Care Excellence. Postnatal care [quality standard no. QS37]. London: NICE; 2013; Available from: https://www.nice.org.uk/guidance/qs37. [Updated June 2015; cited 23 November 2019].
14. Joanna Briggs Institute. PACES: postnatal care. Joanna Briggs Institute EBP Database; 2017. Available from: http://paces.jbiconnectplus.org/AuditHome.aspx. [Cited 5 March 2018].
15. University of Pittsburgh Medical Center. Nazarbayev University 2015 final project status report. Pittsburgh: University of Pittsburgh Medical Center; 2016.
16. Royal College of Nursing. Formula feeds: RCN guidance for nurses caring for infants and mothers London: Royal College of Nursing; 2016.
17. Trickey H. Infant feeding: changing the conversation – ecological thinking. *Perspective* 2016; 133: 1–18.
18. McCarthy C. Why we shouldn't demonize formula feeding. Boston, MA: Harvard Health Publishing; 2018. Available from: https://www.health.harvard.edu. [Updated 3 April 2018; cited 23 November 2019].