Stakeholder Perceptions of Early Essential Newborn Care Training in Western China: A Qualitative Study

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Abstract

Background: Neonatal mortality remains a global concern, especially in China, where regional disparities persist. Early essential newborn care (EENC) consists of a simple set of evidence-based interventions to prevent or treat the major causes of neonatal morbidity and mortality. This study aimed to explore the facilitators and barriers to EENC training by examining the perspectives of different stakeholders participating in EENC training and coaching activities in western China.

Methods: Between December 2020 and April 2021, participants were recruited from four western provinces in China. Seven in-depth interviews (IDIs) with national-level experts, 35 IDIs with postpartum mothers, and 21 focus group discussions with 54 policymakers and 94 healthcare providers were conducted to collect data. The interview transcripts were organised and coded by the research team. We used inductive thematic analysis to generate themes.

Results: Three main themes and eight sub-themes emerged from the data. Following training, healthcare providers reported that the delivery approach and content of the training were acceptable, and postpartum mothers reported satisfaction with the service they received. Facilitators to successful training were the use of an evidence-based approach, practical, skill-based training, and multidisciplinary engagement. Barriers included variations in trainer quality, and staff shortages in county-level hospitals.

Conclusions: The value of EENC training in improving the capacity of healthcare providers and outcomes for mothers and newborns is described by the beneficiaries. The current training approach should be promoted and post-training quality control should be strengthened in order to support the development, strengthening, and sustainment of recommended EENC practices among healthcare providers.

Keywords: Early essential newborn care, Training, Qualitative study, China

Background

Globally, the most vulnerable time for a child is the neonatal period (up to 28 days after birth) (1). According to a United Nations Children's Fund (UNICEF) report, the world lost 5.0 million children before they turned 5 years in 2021 alone, 2.3 million of which were newborns (2). While China has made remarkable progress to reduce child mortality in recent decades, the under-5 mortality rate remains unacceptably high. In 2015, 181,600 children died before the age of 5 years, with over half (51.5%) of these deaths occurring during the neonatal period (3). In addition, significant disparities in child mortality remain across different regions and between urban and rural areas. The western region had the highest neonatal mortality rates in 2015, with an estimated rate of 9.5 deaths per 1000 live births. In contrast, the neonatal mortality rate in the eastern region was 3.1 per 1000 live births (3). Postnatal care services are critical to ending preventable newborn deaths in China (4).

Early essential newborn care (EENC) is a set of evidence-based interventions designed to provide effective, low-cost interventions during and after birth. The package includes immediate and uninterrupted mother-baby skin-to-skin contact (SSC), delayed umbilical cord clamping, early breastfeeding initiation, kangaroo mother care for premature infants, and other supportive practices. It was recommended by the World Health Organisation (WHO) *Action Plan for Healthy Newborn Infants in the Western Pacific Region (2014-2020)* to prevent newborn deaths (5). EENC practices have been shown to significantly improve health outcomes, including reducing the risk of neonatal anaemia and complications in preterm infants worldwide(5-7).

From 2016 to 2020, the National Health Commission of China and UNICEF conducted the four-year Safe Neonatal Project (SNP) in western China. The pilot project aimed to

introduce and implement EENC interventions across 18 counties in four western provinces with high neonatal and under-five mortality rates in China: Qinghai, Sichuan, Guizhou, and Ningxia Hui Autonomous Region. Previous studies have demonstrated the effectiveness of EENC implementation in China, such as enhanced maternal and newborn care practice, improvements in the quality of SSC, and early breastfeeding performance, and reduced risk of neonatal diarrhoea and eye infection(8-11).

As a practice-based package (12), it is essential to provide training and coaching on EENC for health workers providing childbirth and newborn care. The current EENC training approach in China adopted by the SNP adhered to the WHO facilitator's guide: training involved a comprehensive two-day session and took place in a simulated delivery room environment, with a facilitator-to-participant ratio of 1:6. Training was interactive and participatory, and all participants had to demonstrate proficiency upon completion (13). A team of national and provincial trainers was recruited by the national expert group to conduct training and quality control in each pilot area. Over the four years of SNP implementation, a national EENC technical working group and standard training model have been established to guide county-level EENC implementation.

To explore the enabling factors and obstacles to EENC training implementation and examine the program’s strategies for scale-up in China, we conducted this qualitative study to gather stakeholder perceptions of the SNP pilot and EENC training model, generating valuable insights and lessons that can guide the widespread adoption of EENC practices across not only China but also other low- and middle- income countries. We mainly arise two research questions:

1. How do healthcare providers and receivers feel about the training results?
2. What are the facilitators and barriers in the training?

Methods

Study design

This qualitative study was part of a larger study aimed at assessing the acceptability, sustainability, and scalability of SNP implementation in low-resource areas of China(11). We conducted qualitative research to collect data from December 2020 to April 2021. We randomly selected four pilot counties and four control counties from Qinghai Province, Sichuan Province, Guizhou Province, and Ningxia Hui Autonomous Region to collect data. In each pilot and control county, one or two hospitals that provide midwifery services were selected.

Data collection

In each county, we used purposive sampling to recruit participants, including national experts, policymakers, obstetricians, paediatricians, nurses, and postpartum mothers. In detail, to ensure full representation of the different stakeholders involved in the implementation of the training, we purposively recruited county mayors in charge of health, county mayors in charge of finance, hospital medical directors, obstetricians, pediatricians, nurses and postpartum mothers from each hospital. The final sample size was determined based on information power(14, 15). Considering the specific aims, dense specificity, strong dialogue but minimal theory, and cross-case analysis (14), we conducted four to six FGDs and eight to ten postpartum mothers in each county.

In total, 21 FGDs were conducted, with the participation of 54 policymakers and 94 healthcare providers. FGDs were conducted by Dual moderator focus group patten (16). KT and another flexible research assistant facilitated the FGDs, with RA ensuring the workflow and KT focusing on probing and summarizing, particularly in the presence of conflicting viewpoints, to promote collective understanding within the group (17). Seven

IDIs were held with national experts, and 35 IDIs were conducted with postpartum mothers. Each IDI lasted 40 to 60 minutes; FGDs lasted 90 to 120 minutes. The main content of the interview guide includes: (1) satisfaction with the modality, content, and frequency of training, (2) the use of training techniques in daily work and their effectiveness, (3) problems encountered in applying training content to practice, and (4) areas for improvement. During data collection, we continued to adjust the interview guides depending on the different participants and according to new findings. All interviews were audio-recorded and transcribed. Consent forms were read and signed by all participants who agreed to participate in the study.

Data analysis

We used an inductive thematic analysis approach to manage the text in IDIs and FGDs(18, 19). There are 5 steps to follow, including familiarizing with the data, generating initial codes, searching for themes, reviewing themes, and defining and naming themes. First, the scope of analysis was delineated by encompassing the interview transcripts. Second, two researchers with backgrounds in epidemiology and health communication, independently coded the text, resulting in two separate sets of codes that comprised the initial findings. After full discussion between the two researchers, the codes that achieved a minimum of 80 % agreement between the coders were selected and the two sets of codes were combined into one. We used both data triangulation and investigator triangulation to ensure the credibility of the results. We used the views of different stakeholders for mutual validation. Our data collection was conducted by researchers from different backgrounds. Dedoose (version 9.0.107) was used for data management and analysis.

Results

Basic characteristics of the study participants

A total number of 190 participants were interviewed in the study, representing different stakeholder groups that held various roles in the EENC training, including EENC national experts, policymakers, healthcare providers, and postpartum mothers. The characteristics of the participants are shown in Table 1.

Table 1. Participant characteristics

Stakeholder type	Participants	Qualitative instruments	Number of participants	Sex	Years of EENC enrollment / experience
EENC national experts	UNICEF representative	IDI	1	Male	4 years
	National Health Commission of China representative	IDIs	2	50% female	4 years
	National EENC specialist	IDIs	4	All female	4 years
Policymakers	County mayor	FGDs	5	All male	N/A
	Deputy county mayor in charge of health	FGDs	8	63% male	N/A
	Others (office of health, finance, development and reform, et al.)	FGDs	17	71% male	N/A
	Hospital medical director	FGDs	24	67% male	2–3 years
Healthcare providers	Nurse	FGDs	29	93% female	2–3 years
	Paediatrician	FGDs	20	60% female	2–3 years
	Obstetrician	FGDs	33	82% female	2–3 years
	Others (e.g. hospital-acquired infection control department)	FGDs	12	75% female	2–3 years
Postpartum mother		IDIs	35	All female	N/A

Perceptions of providers and receivers of post-training services

Skills improvement reported by healthcare providers

The simple and practical approach of the EENC training helped enhance the skills of healthcare providers and ensure effective knowledge transfer. After the training, participants were not only strongly willing to apply their new knowledge in clinical practice, they were also able to put the training content into practice immediately after completing training.

> *The operational procedures are neither complicated nor difficult, nor do they require exceptionally high technical proficiency. They are straightforward, practical, easy to execute, and easily grasped. This is the most profound impression I have of the project. (Ningxia, healthcare provider)*

Health benefits reported by postpartum mothers

The majority (18/20) of postpartum mothers who accessed EENC interventions post-training reported experiencing benefits, particularly women who were having their second child, including enhanced mother-child bonding due to SSC, the promotion of breastfeeding, and a reduction in the incidence of umbilical cord infections. They were positive about the effectiveness of EENC training and expressed a willingness to share their experiences and recommend EENC to other pregnant women in the future.

> *I feel that this project has benefited both me and my baby, when the baby was first born, (skin-to-skin contact) enhanced the mother-child bond between us. (IDI 9, postpartum mother)*

> *Kangaroo Mother Care has definitely enhanced the bond between us parents and our children. In the future, I will recommend EENC interventions to others. Based on my personal experience, the changes and*

improvements I have witnessed are significant, and I believe it is worth promoting. (IDI 33, postpartum mother)

Training content and delivery approach

Practical, skills-based learning

Rather than using a didactic approach, the EENC training focused on practical and skill-based learning through simulation exercises and team training. During the two-day session, the ratio of trainer-to-participants was limited to 1:6. Furthermore, the training was interactive and participatory, involving group discussions and practical exercises. National trainers first trained the provincial trainers in small groups in accordance with the WHO EENC training standards, and then provincial trainers trained the medical staff in the pilot areas. Provincial trainers used a combination of theoretical lectures, practical demonstrations, and group exercises. Hand-washing aids and birthing models were used to assist in the training. This hands-on, skills-based training approach facilitated the full mastery of EENC interventions by medical staff.

This project training is strictly in accordance with the World Health Organisation's training process (...) 1 trainer with 6 participants (...) It is participatory and inspirational training (...). (IDI 5, national expert)

Evidence-based approach

There are significant differences between EENC interventions and the newborn care recommendations in China. For example, in China, there is an emphasis on keeping newborns in a protected environment rather than in direct contact with their mothers, and immediate umbilical cord cutting and disinfection remain common. Therefore, changing the philosophy of medical staff was a very important objective of the EENC training.

Before the initiation of this project, there were still instances of infection after umbilical cord dressing. However, since the implementation of this project, our county hospital has achieved a zero-infection rate after discontinuing the practice of disinfecting the cord after dressing. (Guizhou, healthcare provider)

During the project implementation period, two Chinese EENC expert consensus statements were published in 2017 and 2020, which incorporated the latest localised evidence supporting the core EENC interventions and helped guide the training and practice. By including evidence-based practices into the training content, the training exposed healthcare providers to scientific evidence and research supporting the effectiveness of EENC interventions. This exposure helped challenge and reshape the participants' existing beliefs and concepts, fostering a more informed and evidence-driven mindset.

As EENC aims to transform people's mindset rather than just teaching operational methods, it is crucial to initiate a shift in mindset first. Once individuals embrace the new perspective, their actions can align accordingly. (IDI 5, national expert)

The trainers need to engage in continuous communication and dialogue with the healthcare providers to provide them with the corresponding evidence-based interventions and change their perspectives. (IDI 3, national expert)

We need to present abundant and scientifically sound evidence that demonstrates the suitability, low cost, and ease of implementation of the interventions. This persuasiveness helps to address differences and resistance effectively. (IDI 2, national expert)

Multidisciplinary engagement

The project training involved not only neonatologists but also healthcare providers from other relevant departments, including hospital infection control, medical services, and nursing. The training model incorporated on-site training, ongoing discussions, and problem solving to address any disagreements or concerns that arose between different departments within the hospital. This collaborative, multidisciplinary approach facilitated the seamless implementation of interventions and integration of practices across different departments post-training.

> *For example, when discussing the non-disinfection of umbilical cord stumps, the staff in the obstetrics department accepted the practice, and the paediatric team also agreed. However, the infection control department had concerns. We engaged staff from the infection control department to discuss and reached a consensus after addressing their concerns. (IDI 2, national expert)*

> *We went for training together with the infection control team. After the training, the infection control department collaborated with the obstetrics and neonatology departments' doctors to promote [EENC interventions]. In the clinical setting, as everyone's mindset gradually changes, the promotion [of EENC] is carried out more effectively. (Sichuan, healthcare provider)*

Barriers to training implementation

Insufficient trainer quality

The quality of the trainers played a critical role in the training process. At present, while provincial training is generally conducted by national-level trainers, the trainers of in-hospital trainings are typically trained at the provincial-level. During project

implementation, there was a significant shortage of qualified trainers. As a new service package, there was a degree of scepticism towards EENC during training, which created challenges for trainers to effectively impart the necessary knowledge and skills. This scepticism may have been due to insufficient explanations of the interventions during training, which made it difficult to convince the participants of the benefits of EENC and sceptical of its feasibility. Furthermore, variation in the quality of trainers also had a significant impact on training acceptability from the participant-side. Issues included poor or limited professional teaching abilities and frequent mistakes in practice and teaching. Hence, these differences in the qualifications and competencies of trainers affected the overall quality of the training.

> *We have noticed a shortage of qualified trainers in our training programs. Currently, there are only a few trainers who stand out, and the number of trainers within the province is also limited. It is challenging to secure trainers for each training session, including training supervisors. If the training is not conducted properly, it may lead to improper implementation of the technology. (IDI 6, national expert)*

Human resource shortages in county-level hospitals

The human resource shortages faced by healthcare facilities in rural and underdeveloped areas created conflicting motivations to attend the training, thereby creating a barrier to participation. The provision of external, off-site training impacted the available workforce in a local institution, worsening existing labour shortages by reducing the number of in-hospital staff available.

> *Some hospital administrators are reluctant to send staff members for training because it means more night shifts for those who are left behind.*

And then the head nurses complain about the lack of staff available for night shifts and filling in for others. It's a vicious cycle with no apparent solution. (IDI 7, national expert)

It is not feasible for everyone to attend training individually due to human resource shortage. Sending one person to learn and then relying on them to disseminate the information may result in inconsistencies. (Ningxia, healthcare provider)

In addition, the shortage of human resources also affected the duration of in-hospital trainings. In some pilot areas, healthcare providers had little time to receive training. Training duration was shortened or adjusted in some hospitals, such as by splitting a two-day training into four half days, affecting the overall quality of training and the extent new skills were acquired.

In some project areas, it may be challenging to ensure that our healthcare providers can allocate two full days to attend training. The training sessions may be divided into four half-day sessions or compressed into one and a half days or even one day, which can compromise the effectiveness of the training. (IDI 3, national expert)

Some healthcare providers are unable to attend the training due to heavy clinical responsibilities. They cannot afford to take time off because of the workload. (Sichuan, healthcare provider)

Discussion

This study identified facilitators and barriers influencing the implementation of EENC training in western China. We found that EENC has high level of acceptance among medical staff and postpartum mothers. Practice-based training helped to improve

healthcare providers' skills, and evidence-based training helped to change their attitudes. In addition, the engagement of multiple disciplines in the training helped to eliminate conflicts within hospitals during implementation. However, challenges such as variations in trainer qualification, and the shortage of personnel in county-level hospitals created obstacles to training implementation. To promote EENC training in health facilities in resource-limited areas of China and support nationwide scale-up, it is recommended that these facilitators and barriers be taken into account in the design and implementation of training programs.

Post-training feedback on EENC services and postnatal care from medical staff and postpartum mothers was positive. Consistent with the findings of a prior study, notable enhancements to the knowledge, attitudes, and skills of healthcare workers have been discerned after participation in training (20). Moreover, postnatal mothers expressed satisfaction with the interventions and felt that EENC could help to reduce the use of breastmilk substitutes and improve the maternal experience (21). Support for EENC from postpartum mothers may create a virtuous circle whereby EENC implementation barriers are reduced as a result of this support (22), causing greater demand for medical staff training (23), which in turn further increases participation in and adoption of EENC interventions.

The current EENC training methodology employed a pragmatic coaching approach, using minimal resources and limiting didactic or redundant contents throughout the 2-day session. This model of hands-on training helped strengthen the practical skills of the medical staff, thus supporting the implementation of practices post-training. This finding is consistent with prior studies, which found clinical simulations and practice to be effective educational techniques (24, 25).

During project implementation, two consensus documents helped provide clinical suggestions on implementation and updated evidence of the core contents of EENC for the adoption of EENC interventions. In complex intervention measures, agreement on the sources of authoritative knowledge and practice is crucial (26). Our study found that the integration of evidence into the training content helped change the perceptions and attitudes of medical staff towards EENC practices. Following the training, the majority of healthcare workers in the pilot areas expressed high acceptance of EENC interventions. According to Normalization Process Theory, when staff understand the value, benefits, and importance of a new set of practices, new routines are more likely to be sustained (27).

Furthermore, we found that the training's multidisciplinary approach, which brought together healthcare providers from different departments, helped to improve inter-professional team communication and collaboration, thereby mitigating conflicts encountered during subsequent implementation of EENC interventions. This approach ensures adequate internal support is available for healthcare providers involved in implementation. This finding is similar to that of a previous Canadian study in which participants identified inter-professional teamwork and collaboration as an important indicator of successful implementation of the guidelines (28). In addition, a study conducted in Vietnam also found that collaboration between relevant departments is important and contributes to smoother implementation of EENC interventions (21).

Consistent with our findings, indirect training, due to variations in trainer quality and training duration, can lead to incomplete knowledge absorption and doubts about the meaningfulness of behavioural change, as observed in countries such as Vietnam (21) and Kenya (29). Addressing this issue in China, however, poses challenges, as the country not

only lacks high-quality trainers but also faces a shortage of healthcare providers. The shortage of manpower discourages hospitals from sending elite staff members to participate in external training, which can create additional workloads for the remaining in-hospital personnel. The combination of high workforce demand, a dearth of human resources for EENC implementation, and the misalignment of workloads and appropriate compensation has led to diminished enthusiasm for work (30), insufficient training motivation, and subsequent quality control challenges (31). Similar trends have been observed in China as well. Multiple policymakers have pointed out the challenging work environment for neonatal healthcare providers and emphasised that conditions are likely even worse in rural settings

We also gathered recommendations from stakeholders to support broader replication of the training nationwide. Firstly, the establishment of exemplary hospitals in different regions is a commonly proposed recommendation to improve EENC training. An exemplary hospital is a high-level provincial or municipal health-care institution that serves as a training base for EENC and provides ongoing training for healthcare personnel in midwifery facilities in the surrounding jurisdictions. Exemplary hospitals could provide quality trainers and specialists, demonstrate techniques, and monitor quality control activities. In addition to showcasing the transformative effects of EENC through empirical data, such hospitals could also offer vivid illustrations of improved healthcare system efficiency and doctor-patient relationships, thereby positively influencing emulation. Secondly, maintaining standardised training procedures can optimise learning outcomes to mitigate disparities in the quality of care. When scaling up standardised training from urban areas to rural and less developed regions, distinct issues stemming from local cultural and contextual factors will inevitably arise. These region-specific

factors need to be considered when promoting practical training. Localising and adapting training methods and developing culturally sensitive training materials that address the specific challenges faced by the target population are essential. Thirdly, given the wide variation of neonatal care practices in China, ensuring the efficiency and feasibility of EENC implementation requires policy support at the national level—a need that was repeatedly emphasised by hospital stakeholders during interviews. Addressing medical liability through policy backing, the certification of EENC trainers, and targeted funding or policy reform can enhance motivation for EENC training and implementation across various institutions nationwide. Reforms to healthcare personnel training and the integration of EENC into university curricula can help build knowledge and awareness among healthcare providers.

This study is the first qualitative study to evaluate the implementation of the EENC training model since the SNP was launched in China. A strength of this study is that we recruited diverse stakeholders, which helped triangulate and validate the findings. In addition, the interdisciplinary research group allowed for researchers to engage in intensive discussions, thereby adding multi-perspective insights.

This study has several limitations. First, , the conclusions drawn from this study should be treated with caution, as the study was conducted in county hospitals in resource-limited areas. The generalisability of this study may be limited for China as a whole, especially the affluent eastern coastal region. Therefore, the EENC training model should be tested in different settings, including in diverse economic and cultural contexts. Second, it is important to note that this study involved numerous interviews. For the sake of conciseness, only the viewpoint-based statements obtained from participants' discussions have been retained in our references to FGDs. However, participants' interaction helped

researchers gain in-depth and rich data, which was beneficial for the generation of concepts and conclusions (32). Third, Due to the large number of participants interviewed, we did not collect enough socio-demographic characteristics of the different stakeholders, which may be a limitation.

Conclusions

Training is critical for scaling up EENC interventions in resource-limited areas of China. The current evidence-based and multidisciplinary training model has been accepted by local governments, health facilities, and postpartum mothers in the pilot areas of the project. However, training delivery still faces policy and human resource challenges. A more supportive environment to facilitate training scale-up can be created through the promotion of localised EENC clinical guidelines in China, optimisation of service delivery processes, and additional investment of health resources. These findings may have implications for the design and implementation of training programs on newborn health in other similar settings.

Declarations

Ethics approval and consent to participate

Ethical approval for this study was obtained from the Institutional Review Board of the National Center for Women and Children Health, Chinese Center for Disease Control and Prevention (FY2019-09), 27 June 2019. All participants were informed of the purpose and content of the study and written informed consents were obtained from all participants before data collection.

Consent for publication

Not applicable.

Availability of data and materials

Data are available from the corresponding authors upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contribution

All authors have read and approved the final manuscript as submitted. The research was designed by XBT, XNH, TX and KT. The data were collected by HXYZ, YL and CRW. The data were analysed by HXYZ and HCS. The draft of the manuscript was completed by HXYZ and HCS. The manuscript was proofread by AYX and LY. The manuscript was critically revised by XBT, XNH, TX and KT.

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References

1. UNICEF. Neonatal mortality 2023 [updated 2023 Jan; cited 2023 Aug 9]. Available from: https://data.unicef.org/topic/child-survival/neonatal-mortality/#.

2. Estimation UNI-AGfCM. Levels and trends in child mortality 2023 [cited 2023 Aug 9]. Available from: https://data.unicef.org/resources/levels-and-trends-in-child-mortality/.

3. He C, Liu L, Chu Y, Perin J, Dai L, Li X, et al. National and subnational all-cause and cause-specific child mortality in China, 1996–2015: a systematic

analysis with implications for the Sustainable Development Goals. The Lancet Global Health. 2017;5(2):e186-e97.

4. Organization WH. WHO recommendations on maternal and newborn care for a positive postnatal experience 2022 [cited 2023 Aug 9]. Available from: https://www.who.int/publications/i/item/9789240045989.

5. Organization WH. Action plan for healthy newborn infants in the Western Pacific Region (2014-2020) 2014 [cited 2023 Aug 9]. 240]. Available from: https://apps.who.int/iris/handle/10665/207766.

6. Obara H, Sobel H. Quality maternal and newborn care to ensure a healthy start for every newborn in the World Health Organization Western Pacific Region. BJOG: An International Journal of Obstetrics & Gynaecology. 2014;121(s4):154-9.

7. Moore ER, Bergman N, Anderson GC, Medley N. Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database of Systematic Reviews. 2016(11).

8. Wang CR, Li XY, Zhang L, Wu LM, Tan L, Yuan F, et al. Early essential newborn care is associated with increased breastfeeding: a quasi-experimental study from Sichuan Province of Western China. Int Breastfeed J. 2020;15(1):99.

9. Li Z, Mannava P, Murray JCS, Sobel HL, Jatobatu A, Calibo A, et al. Association between early essential newborn care and breastfeeding outcomes in eight countries in Asia and the Pacific: a cross-sectional observational -study. BMJ Glob Health. 2020;5(8).

10. Qu W, Yue Q, Wang Y, Yang JL, Jin X, Huang X, et al. Assessing the changes in childbirth care practices and neonatal outcomes in Western China: pre-comparison

and post-comparison study on early essential newborn care interventions. BMJ Open. 2020;10(12):e041829.

11. Wang C, Lin Y, Zhang H, Yang G, Tang K, Tian X, et al. Effectiveness of early essential newborn care implementation in four counties of western China. BMC Health Serv Res. 2022;22(1):1185.

12. Hempel S, O'Hanlon C, Lim YW, Danz M, Larkin J, Rubenstein L. Spread tools: a systematic review of components, uptake, and effectiveness of quality improvement toolkits. Implementation Science. 2019;14(1):83.

13. Organization WH. Coaching for the first embrace : facilitator's guide 2016 [cited 2023 Aug 9]. Available from: https://www.who.int/publications/i/item/9789290617594.

14. Malterud K, Siersma VD, Guassora AD. Sample Size in Qualitative Interview Studies: Guided by Information Power. Qual Health Res. 2016;26(13):1753-60.

15. Ayre J, McCaffery KJ. Research Note: Thematic analysis in qualitative research. J Physiother. 2022.

16. O.Nyumba T, Wilson K, Derrick CJ, Mukherjee N. The use of focus group discussion methodology: Insights from two decades of application in conservation. Methods in Ecology and Evolution. 2018;9(1):20-32.

17. Sim J, Waterfield J. Focus group methodology: some ethical challenges. Quality & Quantity. 2019;53(6):3003-22.

18. Javadi M, Zarea K. Understanding Thematic Analysis and its Pitfall. Journal of Client Care. 2016;1(1).

19. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3(2):77-101.

20. Spiva L, Hart PL, Patrick S, Waggoner J, Jackson C, Threatt JL. Effectiveness of an Evidence-Based Practice Nurse Mentor Training Program. Worldviews on Evidence-Based Nursing. 2017;14(3):183-91.

21. Morseth MS, Nguyen TT, Skui M, Terragni L, Ngo QV, Vu HTT, et al. Health staff experiences with the implementation of early essential newborn care guidelines in Da Nang municipality and Quang Nam province in Viet Nam. BMC Health Serv Res. 2020;20(1):585.

22. Yue J, Liu J, Williams S, Zhang B, Zhao Y, Zhang Q, et al. Barriers and facilitators of kangaroo mother care adoption in five Chinese hospitals: a qualitative study. BMC Public Health. 2020;20(1):1234.

23. Fossum M, Opsal A, Ehrenberg A. Nurses' sources of information to inform clinical practice: An integrative review to guide evidence-based practice. Worldviews on Evidence-Based Nursing. 2022;19(5):372-9.

24. Amsalu R, Morris CN, Hynes M, Had HJ, Seriki JA, Meehan K, et al. Effectiveness of clinical training on improving essential newborn care practices in Bossaso, Somalia: a pre and postintervention study. BMC Pediatrics. 2020;20(1):215.

25. Bluestone J, Johnson P, Fullerton J, Carr C, Alderman J, BonTempo J. Effective in-service training design and delivery: evidence from an integrative literature review. Human Resources for Health. 2013;11(1):51.

26. May C, Finch T, Mair F, Ballini L, Dowrick C, Eccles M, et al. Understanding the implementation of complex interventions in health care: the normalization process model. BMC Health Serv Res. 2007;7:148.

27. May C, Sibley A, Hunt K. The nursing work of hospital-based clinical practice guideline implementation: an explanatory systematic review using Normalisation Process Theory. Int J Nurs Stud. 2014;51(2):289-99.

28. Ploeg J, Davies B, Edwards N, Gifford W, Miller PE. Factors influencing best-practice guideline implementation: lessons learned from administrators, nursing staff, and project leaders. Worldviews Evid Based Nurs. 2007;4(4):210-9.

29. Nzinga J, Mbindyo P, Mbaabu L, Warira A, English M. Documenting the experiences of health workers expected to implement guidelines during an intervention study in Kenyan hospitals. Implement Sci. 2009;4:44.

30. Cortese CG, Colombo L, Ghislieri C. Determinants of nurses' job satisfaction: the role of work-family conflict, job demand, emotional charge and social support. J Nurs Manag. 2010;18(1):35-43.

31. Eriksson L, Nga NT, Hoa DP, Persson L-Å, Ewald U, Wallin L. Newborn care and knowledge translation - perceptions among primary healthcare staff in northern Vietnam. Implementation Science. 2011;6(1):29.

32. Webb C, Kevern J. Focus groups as a research method: a critique of some aspects of their use in nursing research. Journal of Advanced Nursing. 2001;33(6):798-805.

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Appendix:

Table A. Number of participants in focus group discussions

Location	FGD Number	Group	Stakeholder type	N
Guizhou	1	Control	Policymakers	8
	2	Control	Providers	6
	3	Pilot	Policymakers	7
	4	Pilot	Providers	9
Ningxia	5	Control	Policymakers	6
	6	Control	Providers	8
	7	Control	Providers	7
	8	Pilot	Policymakers	4
	9	Pilot	Providers	5
	10	Pilot	Providers	7
Qinghai	11	Control	Policymakers	8
	12	Control	Providers	6
	13	Pilot	Policymakers	5
	14	Pilot	Providers	6
	15	Pilot	Providers	6
Sichuan	16	Control	Policymakers	7
	17	Control	Providers	8
	18	Control	Providers	8
	19	Pilot	Policymakers	9
	20	Pilot	Providers	9
	21	Pilot	Providers	9

Safe Neonatal Project Interview/Focus Group Guide

Individual Interviews with Recipients of the Safe Neonatal Project

Warm-up Phase: (approximately 5 minutes)

The interviewer briefly introduces the background, organizing unit, requirements, procedures, and purpose of the interview.

The interviewee signs the informed consent form; those unwilling to participate can terminate the interview.

The interviewee fills out a basic information registration form, including age, education level, ethnicity/language, household registration, whether they are engaged in farming (living and working locally/elsewhere; if elsewhere, how many weeks pregnant they were when they returned and why they returned), living arrangements, previous births and current delivery details (time, natural birth/cesarean section and reason, full-term/premature, low birth weight), whether they are aware of the Safe Neonatal Project, and whether they received the full EENC interventions.

Formal Start: (approximately 30 minutes)

Are you aware of the concept of Early Essential Newborn Care (EENC)? [Care during and after childbirth]

If aware, what do you think Early Essential Newborn Care includes?

If unaware, provide examples such as immediate skin-to-skin contact, early breastfeeding initiation, and exclusive breastfeeding; if still unaware, explain these concepts. (If they understand after the explanation), ask if there are other measures included.

Do you think Early Essential Newborn Care measures are important and necessary?

(If this is not your first child) Did you receive these care services during your previous deliveries? What issues and difficulties did you face in newborn care (e.g., immediate contact, early breastfeeding initiation, exclusive breastfeeding)?

Where and when did you learn about Early Essential Newborn Care?

Are you aware of the Safe Neonatal Project? If so, how did you learn about it (e.g., leaflets)?

Doctor's introduction: When was it introduced (prenatal check-ups, labor, delivery room, postpartum)?

Were there brochures or flyers distributed?

Can you choose to participate or not (e.g., the right to voluntarily join or withdraw from

the program, privacy protection, informed consent)? Why did you decide to participate in this program?

What Early Essential Newborn Care services (interventions) did you receive during this pregnancy and delivery? [Go through each intervention] What do you think about these care measures? Did you face any difficulties throughout your delivery and the newborn care process? Do you have any other opinions about this program?

Why did you choose to give birth at this hospital? Are you satisfied with the capabilities, attitudes, and service levels of the healthcare providers who provided EENC interventions? On a scale of 0-10, how would you rate them?

Did the doctors provide prenatal and postnatal health education? Did you and your partner attend antenatal classes? If so, what was taught?

Did doctors visit you and your baby daily? Did both obstetricians and pediatricians come? Was it easy to call for help from doctors/nurses, and was the help provided promptly?

How far do you live from the hospital? Is transportation convenient?

How has the Safe Neonatal Project or these services helped you? Are there any issues or needs that remain unresolved? If so, how do you think the program should be adjusted to meet your satisfaction?

Through participating in the program, do you think there have been any changes for yourself, your family, and your newborn? What changes have occurred (e.g., mother-newborn bonding, family's views, attitudes, confidence, and behaviors regarding early newborn care; needs/expectations for newborn safety; newborn's growth and health)?

If you have previously given birth, please compare the services received during and after delivery with your previous experiences. How were your experiences and feelings different?

Did the EENC measures increase your hospital delivery costs?

If you have previously given birth, please compare the costs of both deliveries.

Do you think the COVID-19 pandemic affected your pregnancy, delivery process, and newborn care? If so, what specific impacts did it have? (e.g., interrupted/rescheduled prenatal check-ups, number of companions during delivery, number of caregivers, nucleic acid testing)

(If considering having more children) Would you be willing to participate in such a program again/recommend it to others? Why?

Focus Group with County-Level Service Providers for the Safe Neonatal Project

Warm-up Phase: (approximately 15 minutes)

1. The interviewer briefly introduces the background, organizing unit, purpose, method,

and requirements of the focus group.

2. Participants sign the informed consent form; those unwilling to participate can terminate the interview.

3. Participants briefly introduce their position/title, work experience, and main responsibilities.

Formal Start: (approximately 90 minutes)

1. What issues do you hope to address through Early Essential Newborn Care (EENC) (services/expectations for newborn safety)? What changes have occurred during the project implementation? What caused these changes?

- Follow-up questions:

- Before implementing this project, did you encounter any difficult problems in maternal delivery and newborn care?

- Since starting the project, have there been any improvements in newborn safety and care?

2. What do you think are the main factors that facilitate the smooth implementation of the Safe Neonatal Project?

3. What are the main difficulties and problems currently faced in the project implementation? How has your hospital and its staff overcome these issues (please provide examples of innovative practices and successful experiences)? What are the outcomes/effects of the project implementation? Are there any unexpected results and changes? What caused these? (For example, what changes have occurred for mothers and newborns after implementing EENC interventions?)

- a) What interventions have been implemented in your hospital? Who are the targets of these interventions?

- Have the targets of these interventions been adjusted?

- If so, why were these adjustments made, and what were the effects of these adjustments?

- b) Do healthcare providers seek the consent of pregnant women before implementing EENC interventions?

- If yes, when is the consent obtained (during pre-pregnancy, prenatal check-ups, admission, or delivery)? Who mainly seeks the consent? Is there any newborn safety education before delivery?

- If no, have there been cases where pregnant women refused the interventions due to the lack of consent?

- c) How satisfied are the pregnant women who received EENC interventions with the measures?

- If there is dissatisfaction, what are the main areas of concern (content of interventions, cost, service quality)?

- Do the families of pregnant women have any objections to certain interventions (e.g., skin-to-skin contact, delayed cord clamping, kangaroo care)?

- How does your hospital handle such issues, and what are the outcomes after handling them?

- d) What is your and/or other healthcare providers' acceptance of the EENC interventions, which differ from traditional newborn care practices? Are you willing to implement these interventions?

- Initially, which interventions were difficult to accept? Why (inability to master the technique, disagreement, external resistance)?

- How did you eventually accept these interventions? How long did it take to go from unfamiliarity to acceptance and familiarity with these interventions?

- e) Has the implementation of EENC increased service costs (including material costs, manpower, and time costs)?

- If so, please specify which interventions.

- Are these costs solely due to the project implementation? Were these costs present before the project?

- f) Does your hospital have relevant policies or documents to promote project implementation?

- How does your hospital ensure multi-departmental communication and cooperation (e.g., obstetrics, neonatology, nursing, infection control, information department, health department)?

- What aspects of the current project implementation require cooperation from other departments? What roles do each department play?

- Has your hospital developed related manuals and training materials for the project?

- g) How does the training for Early Essential Newborn Care differ from other technical training (forms, teaching aids, etc.)?

- Are you and/or other healthcare providers satisfied with the EENC training?

- How do you apply the training techniques and content in your daily work?

- If difficulties are encountered in clinical application after project training, how are

they resolved?

- What aspects of project training need improvement? How do you suggest they be improved?

- h) How do you evaluate the supervision activities from higher authorities (provincial trainers/project leaders) during project implementation?

- What is the current supervision process (frequency, content, personnel)?

- What problems exist in the current supervision? How do you suggest they be improved?

- Is it easy to obtain the data required for various report forms and checklists? How do you ensure the accuracy of this data?

- Has the supervision been helpful to your hospital's project work?

- Has the supervision been helpful to your hospital's non-project work?

- i) Does your hospital have a quality control system for the Safe Neonatal Project (internal assessment or self-inspection)?

- Does your hospital have quality control systems for obstetrics and neonatology? If yes, how does the internal assessment for the Safe Neonatal Project integrate with the quality control systems of obstetrics/neonatology?

- What is the effect of this internal quality control/supervision? How are problems resolved once identified?

- j) Have social and public health emergencies (e.g., COVID-19) affected the project implementation? (e.g., hospital visitor restrictions)

- What impact did they have on the implementation of interventions?

- What impact did they have on project training and supervision?

- k) How is your hospital currently equipped with key medications and equipment for Early Essential Newborn Care?

- What items are included in the maternity or newborn kits? Who bears these costs?

- Who bears the costs of medications or items required for the interventions?

- Which medications or equipment were available before the project, and which were introduced after the project implementation?

4. **[For managers of midwifery institutions]** How do you view the sustainability and promotability of the Safe Neonatal Project in your hospital (intervention content and service pathways, service system and division of responsibilities, capabilities, and

readiness)?

- (1) Policy Support:

  - Are there any government policies supporting the project implementation (e.g., government documents or implementation plans)?

  - What policies are necessary for promoting Early Essential Newborn Care in other similar areas in the country?

- (2) Fund Utilization:

  - What are the main areas of fund utilization for the current project?

  - Do you think the project funds are being effectively utilized? If not, what suggestions do you have?

- (3) Willingness for Continued Implementation:

  - Is your hospital willing to continue organizing the Safe Neonatal Project? If the project ends, will you continue with the current measures? Why?

  - What difficulties or challenges might you face in continuing the project or related interventions?

  - If the project funding stops, will the hospital continue to invest in the project? What difficulties might there be in terms of hospital funding support?

  - Apart from national project funding, what other funds/support does the project currently have?

- (4) Among the 7 core interventions of Early Essential Newborn Care currently implemented, which do you think are mature enough to be promoted, which need adjustment before promotion, and which are not suitable for promotion?

- (5) **(Supplementary Question)** As one of the first pilot units, do you have any experiences to share with other hospitals that could help other cities and counties quickly adopt this concept and operational process?

National/Provincial Decision-Makers Meeting on the Neonatal Safety Project

Warm-Up Session: (Approx. 15 min)

1. Brief introduction by the interviewer about the background, organizing unit, interview purpose, method, and requirements.

2. Signing of informed consent forms by the participants.

3. Brief introduction by each participant about their position/title, work experience, main responsibilities, etc.

Formal Session: (Approx. 90 min)

1. **Alignment with WHO Western Pacific Region Newborn Action Plan:**

- How well does the design of the neonatal safety project interventions align with the framework and recommended services of the WHO Western Pacific Region Newborn Action Plan?

1. The applicability of this plan in China (design of interventions, compatibility with China's existing health system, feasibility of implementation).

2. Key elements to be considered; elements that are not or partially covered and the main reasons for this.

2. **Pre-Project Status:**

- What was the basic situation of early neonatal care services in terms of intervention content, service pathways, and technical guidance nationwide/provincially before the implementation of the neonatal safety project?

1. What were the main difficulties faced at that time?

2. How do you view the differences and similarities between EENC interventions and traditional neonatal care projects (do EENC interventions meet the current needs of pregnant women and newborns)?

3. **Policies, Plans, and Measures Since 2016:**

- Since the launch of the neonatal safety project in 2016, what policies, plans, and measures have been introduced at the national/provincial level regarding neonatal safety, particularly early neonatal care?

1. To what extent does the design of the neonatal safety project align with the priority areas of national/provincial neonatal safety policies (consistency of EENC intervention results with national/provincial neonatal safety policy priorities and goals/relative importance of neonatal safety projects in the healthcare system)?

- Compatibility of the neonatal safety project with these policies.

- Relative importance of neonatal safety in these policies.

2. How does the (national/provincial) government develop and use technical guidelines/project documents related to EENC interventions that fit the national/provincial context?

- Any new changes in management/service plans (changes in the understanding and execution capacity of national/provincial planning and project implementation in the field of neonatal safety).

3. Support from leadership, human resources, and funding:

- How do you view the current levels of funding and cost structure for the neonatal safety project (current funding channels, future potential sources, channels, and the effective use of project funds)?

- Has there been any change compared to before 2016? If so, what are the reasons for the changes?

4. Willingness to continue investing in/implementing the neonatal safety project:

- What supporting policies and measures might be developed in the future to continue supporting the implementation of EENC interventions?

5. Views on the use of exit mechanisms (have exit mechanisms been applied and the reasons for their application).

6. Has the neonatal safety project imposed any burdens or negative impacts on any stakeholders (healthcare institutions, pregnant women, etc.)?

7. What changes has the neonatal safety project brought to the country/province (project benefits/effects)?

8. Is there consistency in project progress and outcomes among different county-level pilot sites within the province? If not, what are the reasons for the differences, and what are the response strategies of each county?

4. **Impact of Social and Public Health Emergencies (e.g., COVID-19):**

- What impact has the COVID-19 pandemic had on the policy environment, intervention content, and target population? Were any project plans adjusted as a result? If so, what adjustments were made/if not, what adjustments will be made in the future?

5. **Project Monitoring System:**

- What is the status of the project monitoring system (completeness, suitability, operation, etc.)? How do you view the quality of the monitoring data and why? Has the monitoring data played a role in decision-making? If so, what role and why?

6. **Factors Influencing Project Outcomes:**

- What are the main factors influencing the output and goal achievement of the neonatal safety project (both positive and negative factors)? How were the negative factors overcome? What innovative practices and experiences were there? Were there any unexpected results and changes?

7. **Sustainability of National/Provincial Promotion:**

- How do you evaluate the sustainability of promoting the neonatal safety project at the national/provincial level (intervention content, service system and division of responsibilities, capacity, and readiness)? What are the most pressing issues to be addressed? Can you provide successful examples of sustainable implementation?

1. Feasibility of integrating into the national/provincial basic public health services (intervention content, service pathways)? What are the main challenges?

2. Are there plans or considerations for promoting the project nationwide/provincially, and what are the potential promotion strategies and considerations, such as different focuses for different levels of healthcare institutions?

- Anticipated/already faced difficulties and challenges? How to address them? (Are there relatively more mature and easily integrated intervention contents and potential necessary adjustments and reasons)

3. To what extent has the national/provincial government prepared for the promotion of early neonatal care (policy commitment, management and technical resources, promotion plans, funding, etc.)?

- Are there any gaps in resource allocation or management mechanisms (including human resources, facilities and equipment, matching funds, coordination mechanisms, and incentive mechanisms)?

- If gaps exist, what is the tolerance range of the national/provincial government for these gaps, and what policy, management, and financial input changes are anticipated?

Key Informant Discussion on the Neonatal Safety Project at County Level

Materials Preparation:

- Basic population status of the county and characteristics of early neonatal care services (allocation of medical and health resources, changes in major causes of neonatal deaths and disease burden, maternal and child health services and management, etc.)

Warm-Up Session: (Approx. 15 min)

1. Brief introduction by the interviewer about the background, organizing unit, meeting purpose, method, and requirements.

2. Signing of informed consent forms by the participants.

3. Brief introduction by each participant about their position/title, work experience, main responsibilities, etc.

Formal Session: (Approx. 90 min)

-- Policy Aspects --

1. What are the key maternal and child health priorities in the county? Which of these involve the neonatal safety project or early neonatal care measures? (Inquire about other relevant departments as well.)

2. Are you involved in the implementation of the neonatal safety project? If yes, what is your involvement and the nature of your work?

3. What are the main issues in early neonatal care in the county, and which aspects need further improvement? What role has the neonatal safety project played in addressing these issues? (Ask the county mayor and health department.)

4. What processes and stages has the county experienced in implementing and promoting the neonatal safety project? (Ask the county mayor and health department.)

4.1. Have any related supporting policies been introduced for the successful implementation of the project or have early neonatal care management and service plans been developed based on this project? Please provide details.

-- Measures and Efforts --

5. Which hospitals in the county are implementing the neonatal safety project? Are there differences in the implementation of EENC (Early Neonatal Care) measures between XX Hospital and XX Hospital? What are the reasons for these differences? (Ask the health department.)

6. What issues have been encountered in implementing EENC measures in the county? How have these issues been addressed?

6.1. Issues in the policy implementation process (ask the deputy county mayor and health department).

6.2. Issues in the technical implementation process (ask the directors of the People's Hospital and Maternal and Child Health Hospital).

7. What was the initial target population covered by the project? Has the target population coverage of the neonatal safety project changed in recent years due to local policy changes (e.g., expansion from natural births to cesarean sections, differences between Han and ethnic minority groups)? If there have been changes, what is the current situation of the covered service recipients? (Ask the directors of the People's Hospital and Maternal and Child Health Hospital.)

8. Has the county adjusted its policies or EENC measures due to sudden social and public health events (e.g., COVID-19), such as adjusting measures for delayed umbilical cord clamping due to infection concerns or changing family accompaniment policies? (Ask the health department.)

9. Besides policy support (refer to previous policy support), what efforts has the county government made to ensure the successful implementation of EENC measures (e.g., leadership support, human resources allocation, financial support, technical support, material support, service quality supervision and management)? What are the reasons for these changes? How is the implementation situation? (Ask the county mayor and health department.)

10. What are the future policy plans, work plans, or key projects related to early neonatal care in the county? (Ask the county mayor and health department.)

-- Project Evaluation --

11. What training and supervision have been conducted during the project (e.g., national, provincial, county-level)? What role have they played in the project work, and what additional benefits have they provided? (Ask the directors of the People's Hospital and Maternal and Child Health Hospital.)

12. What is the current funding and cost structure for the neonatal safety project in the county (e.g., costs related to training, supervision, and technical support)? (Ask the funders: government, directors of the People's Hospital and Maternal and Child Health Hospital; and the spenders: hospitals, supplementing funds.)

13. Are there other funding sources supporting the neonatal safety project besides the project funds? (Ask government, hospitals.) Follow-up: If project funds are withdrawn in the future, are there other funding sources to continue EENC measures? What potential issues might arise? (Ask the deputy county mayor, health department, finance department, development and reform bureau.)

14. (Currently, the project is only implemented in XXX) How many other medical institutions provide maternal and child services, and is there consideration of implementing the project in these institutions? (Ask the health department.)

14.1. If considering implementation, what are your suggestions for promoting the neonatal safety project across various levels of medical institutions in the county? What potential issues might arise (e.g., policy, management, finance, technology)? (Ask the health department, medical institution directors.)

14.2. If not considering implementation, why?

15. Evaluate the scalability and promotion strategies of EENC measures. What are the focuses for promotion in various provinces/cities (counties) within the province? What are the main obstacles and bottlenecks?

16. In terms of coordination mechanisms, ask leaders from various government departments: The project requires multi-party cooperation. What experiences and issues have you encountered in cooperation and coordination? Are there any unique experiences and practices? What difficulties and challenges have been faced?

Key Informant Discussion on the Neonatal Safety Project with Project-Related Personnel from Other Government Departments at National/Provincial/County Levels

Expansion Questions: (For other government department heads) (Approx. 30 min)

1. How do you evaluate the impact and role of the neonatal safety project? What positive effects has it had on neonatal health and safety?

2. What are the key focus areas of your department in recent years? Are there any policies/plans/projects related to early neonatal care? Please provide details. Are there any plans to incorporate the neonatal safety project into future policy-making/work planning/key projects? What are the reasons for this?

3. Are you involved in the implementation of the neonatal safety project? If so, what is

your role and what does your involvement entail?

4. How has inter-departmental coordination and collaboration been managed during the project? What are the unique experiences and practices? What difficulties and challenges have you encountered?

5. Evaluate the scalability and promotion strategies of EENC measures. What should be the focus for promotion in various provinces/cities (counties) within the province? What conditions are necessary? What are the main obstacles and bottlenecks, and how can they be addressed? If the project were to be discontinued (e.g., if funding support is withdrawn), what support could your department provide for the continued implementation of EENC measures?