Design and implementation of AMBAR: an innovative evidence-based training program for childbirth and newborn care

Jimena Fritz, PhD,[1] Sandra Treviño-Siller, PhD,[1] Mario Sánchez-Domínguez, PhD,[1]
Dolores González-Hernández, MDRD,[1] Alina Bishop, Prof midwife and consultant,[2] Héctor Lamadrid-Figueroa, PhD.[1]

Fritz J, Treviño-Siller S, Sánchez-Domínguez M, González-Hernández D, Bishop A, Lamadrid-Figueroa H. Design and implementation of AMBAR: an innovative evidence-based training program for childbirth and newborn care. Salud Publica Mex. 2024;66:50-58.
https://doi.org/10.21149/15181

Abstract

Objective. To present the development of a training model called AMBAR (*Atención a la mujer embarazada y al recién nacido* [Care for pregnant women and newborns]), which was designed to improve the quality of attention of health personnel responsible for obstetric care. **Materials and methods.** AMBAR was designed based on the results of a qualitative study exploring public health providers' needs and experiences. It was implemented in three health networks, and a total of 339 health personnel participated. **Results.** The educational design of the course was appealing to the trained personnel, and the inclusion of simulations in all modules encouraged interest, participation, as well as the integration of new knowledge and skills into practice. **Conclusion.** AMBAR can promote better practices and increase the quality of birth care. With the proper support and willingness of staff and management, AMBAR can be implemented in all health services, both public and private.

Keywords: birth; newborn; evidence-based practice; training program; Mexico

Fritz J, Treviño-Siller S, Sánchez-Domínguez M, González-Hernández D, Bishop A, Lamadrid-Figueroa H. Diseño e implementación de AMBAR: un programa innovador de capacitación, basado en evidencia, para la atención del parto y del recién nacido. Salud Publica Mex. 2024;66:50-58.
https://doi.org/10.21149/15181

Resumen

Objetivo. Presentar el desarrollo de un modelo de capacitación denominado AMBAR (Atención a la mujer embarazada y al recién nacido), el cual fue diseñado para mejorar la calidad de atención del personal de salud encargado de la atención obstétrica. **Material y métodos.** AMBAR fue diseñado a partir de los resultados de un estudio cualitativo que exploró las necesidades y experiencias de los proveedores de salud pública. Se implementó en tres redes de salud y participó un total de 339 personal de salud. **Resultados.** El diseño educativo del curso fue atractivo para el personal capacitado y la inclusión de simulaciones en todos los módulos fomentó el interés, la participación, así como la integración de nuevos conocimientos y habilidades en la práctica. **Conclusión.** AMBAR puede promover mejores prácticas y aumentar la calidad de la atención al parto. Con el debido apoyo y disposición del personal y la dirección, AMBAR puede implementarse en todos los servicios de salud, tanto públicos como privados.

Palabras clave: parto; persona recién nacida; práctica basada en evidencia; programa de capacitación; México

Experts in maternal health and human rights consider that low care quality during the birth process is reflected not only in consequences for morbidity and mortality, but in inadequate and disrespectful treatment during pregnancy, birth and postpartum period.[1] Several studies have reported the trend of medicalization of childbirth care in Mexico, as well as violence in healthcare services. It has been studied

(1) Instituto Nacional de Salud Pública. Cuernavaca, Morelos, Mexico.
(2) United Nations Population Fund. Tepoztlán, Morelos, Mexico.

Received on: July 20,2023 • **Accepted on:** October 10, 2023 • **Published online:** December 8, 2023
Corresponding author: Sandra Treviño-Siller. Instituto Nacional de Salud Pública.
Av. Universidad 655, col. Santa María Ahuacatitlán. 62100 Cuernavaca, Morelos, Mexico.
email: sandra.trevino@insp.mx

how these experiences are accepted and normalized as part of the birth.[2-4]

Though in Mexico, the current official standard includes respectful and woman-centered birth care practices, public institutions follow a highly medicalized model shown to be unsatisfactory to its users[5] and is characterized by the use of medically unnecessary interventions with the singular goal of achieving faster births and combatting the already existent oversaturation of maternal and neonatal health care facilities.[4,6] These practices not only violate the rights of the woman attended, but can constitute direct physical aggression and unnecessary risk exposure.[7]

The past 25 years have witnessed a reduction in the global maternal mortality rate (MMR) and infant mortality rate (IMR) by 38[8] and 57%,[9] respectively. The main strategies used to reduce the MMR have focused on strengthening health service access, thereby creating a culture of hospital birth care.[10]

In developing countries, coverage, access and quality of obstetric attention are considered the biggest challenges to a further reduction in maternal mortality.[11] For almost two decades Mexico has implemented a policy of hospital birth care for both low and high-risk pregnancies; currently, more than 98% of births in the country are attended in hospitals.[12] Nevertheless, nationally, 44.5 maternal deaths still occur for every one hundred thousand live births.[13] In the past decade c-sections have been increased enormously in Mexico, from an average of 44.5 in 2010 to 47.6 in 2019 and vaginal deliveries with a lower trend: from 55.7 to 52.3.[14] For episiotomies there are no national statistics on the frequency of its use. However, some studies have found a rate raging between 46.5 and 64.7%.[5,6]

This indicates that guaranteeing institutional birth care alone is not sufficient, but that it must be performed by qualified personnel in an effective system of networks with the highest achievable quality of obstetric care, and within a human rights framework.[15] The World Health Organization (WHO) has recognized the need to strengthen obstetric and neonatal care quality through continuous training of the attendant personnel (nursing and medical staff, professional midwives, perinatal nursing staff and obstetric nursing staff), and to guarantee that in all levels of care, appropriate knowledge and evidence-based care practices.[16]

Considering this issue, a multidisciplinary team of researchers from the *Instituto Nacional de Salud Pública* (INSP), created the Evidence-Based Care Model for Women and Newborns (AMBAR for its Spanish acronym). The aim was to update the knowledge of health personnel and train them in evidence-based practices for care during pregnancy, birth and postpartum, all centered in the necessities and wellbeing of the woman and newborn. The model focuses on care for uncomplicated births, which should represent approximately 90% of all births in any given country and is based on the human rights and sexual and reproductive rights approach as recommended for professional midwifery practices.[16]

This article describes the design and implementation of the AMBAR training model in three hospitals in Mexico, identifying barriers and facilitators to its success.

Materials and methods

Design of the AMBAR training

AMBAR was designed during 2015 based on the results of a previous qualitative diagnostic study performed with health personnel and users of public health services[4] as well as on the revision of all the new evidence for birth attention. It was implemented during 2016-2018 and evaluated to assess the impact of training on key practices.[17] The participatory adults' teaching methodology was used[18] as well as the improved quality approach of the National Academy of Medicine (NAM, previously Institute of Medicine - IOM), revised and expanded by the WHO.[19,20]

A large team including a professional midwife, a social anthropologist, two epidemiologists, an obstetrician-gynecologist, a neonatologist, a nurse, a nutritionist, a psychologist and a sociologist participated in the design of AMBAR. All contributed diverse experiences from fields including clinical care, public health and educational design.

The initial design proposal of AMBAR employed training experiences in obstetric emergency care[21,22] and was complemented with the results of a qualitative diagnostic study which included meetings with experts from different disciplines, as well as feedback from training participants. This allowed development of the course content based on the subjects of greatest need.[4]

The dignostic phase of aproximately six months included a qualitative study (by observation and interview) to understand the labor context within health services, and identify barriers to the implementation of a training course for health personnel and the necessities of birth care personnel. In addition, in-depth interviews were also performed with women who had received birth care in these facilities in order to understand their experiencies and needs. This information was gathered through semi-structured interviews: 72 with health care providers (management, phsyicians and nurses) and 37 with women users.

In order to design AMBAR four moments of the care process for pregnant women were considered:

pregnancy, labor, birth and immediate postpartum, which were structured by three conceptual axes as described below:

Educational design. The design was grounded in the adult learning framework (experiential) based in health literacy.[22] Experiential learning offers individual opportunities to "internalize" ideas derived from real life experiences.[23] This study incorporated experiential learning using techniques such as representations, group activities and simulations to create routine which could then be followed by reflection in the workplace and in the day to day, promoting the conversion of experience into competency.[24] Simulation is an educational system adapted from the avian industry to medicine, and seeks to increase knowledge, improve personnel leadership skills to assure the efficient use of resources, and foster coordination between team members for appropriate care provision.[25] It is a type of training which seeks to immerse the student in a real situation (scenario), created within a physical space (simulator), which recreates the surroundings convincingly enough so as to imitate reality.[26] One fundamental element of simulation is the filming of the exercise to guarantee the exact reproduction of the group's behavior in the situation they are presented. Directly from this, feedback and critiques are shared among the participants to evaluate the group's response.

AMBAR simulations recreated a scenario of birth care in different circumstances, and characters were played by volunteers from the group, always including a woman in labor, a companion (family member or partner) and a group of birth care providers (physician, nurses) who following a script acted out a specific situation based on the lessons of each module, providing care by the principal of childbirth which is centered in the needs of the woman and newborn.

Evidence-based medical intervention. A special focus of this course was to 1) sensitize and inform regarding evidence-based professional midwifery practices and 2) update the knowledge of health personnel for pregnancy, birth and postpartum care. The contents and exercises were based on a review of national and international evidence in subjects of pregnancy, birth and immediate postpartum care[27] and the actions were aligned with the guidelines of the official Mexican standard on birth care "NOM 007",[28] the Clinical Practice Guides, 2014[29] and the Mexican care models proposed by the implementation guide for the "Care model for women during pregnancy, birth and postpartum period: a humanized, intercultural and safe approach".[30]

Focus on improved quality of birth care services. This work is referenced within the action proposal of the NAM,[31] which states that the human rights of the subject must form the basis of birth care provision (woman-centered) as well as the basic competencies of professional midwifery,[10,32] service provision (referral and counter-referral) must not generate long wait times (timely), interventions must be based in scientific evidence (effective) and must not use excessive resources (efficiency) nor subject users to unnecessary risks (safety), and finally, care provision must not differ by ethnicity, social class, affiliation or any other individual characteristics (equity). Furthermore, the revision made by the WHO to this NAM model in 2018 was taken into account, which added that service provision must be a continuous process (integration).[20]

The AMBAR training model was organized into three sequential and staggered modules. Each module was designed to take a maximum of 16 hours over two days (8 hours each day) and was imparted every three months in order to allow time for the integration of knowledge gained in each module, share these gains within professional labors, reinforce knowledge and skills, and address concerns.

Based on the health literacy model, the beginning of each module included a revision of prior knowledge.[33] This implied assuring that the attendees understood the knowledge gained from the previous module and that it could be integrated in professional practice, at the level of pregnancy consultation as well as birth and postnatal consult. At the end of each course module within the final evaluation portion, participants were asked to provide feedback and suggest topics which should be reinforced in subsequent modules, by which the new topic and activities of modules two and three were constructed, respectively. Furthermore, following modules one and two, each trained group listed a series of commitments which would be incorporated in his or her workplace, hospital, or health center, and which were reported upon at the beginning of the subsequent module. This allowed new knowledge to be integrated in a participative and applied manner.

Module I had the specific objective to promote evidence-based care practices during pregnancy, labor, and birth (table I). Module II had the specific objective to improve knowledge, skills, and attitudes of health personnel in initiating immediate breastfeeding and neonatal resuscitation in the postpartum period (table II). Module III included three specific objectives: develop skills in counseling adolescents in decision-making about contraceptive use, improve nutrition and physical activity habits before, during and after pregnancy, and

develop leadership competencies for implementation of change in health services (table III).

Although AMBAR training had a modular design, its actions and elements may be represented as a continuum in the pregnancy, birth, and postpartum process (figure 1). With reference to the improved quality of care approach by the NAM and WHO, certain actions can be identified for each of the seven objectives (figure 2).

The facilitators of each module were specialists in the subjects they imparted, and came from different fields of knowledge: midwifery, obstetrics, neonatology, nutrition, psychology, public health and health service management. All were trained in the participative methodology of the study in order to promote constant interaction and reflection with the health personnel. Results of the impact evaluation for this training are published elsewhere.[17]

Ethical considerations

AMBAR was designed and implemented within the study "*Proyecto Marco: Modelo Integral de Partería*" which was approved by the Ethics and Research Commission of the INSP (ref. CI: No. 1756; CI- 484 -2015, Project No. 1339) which followed the recommendations regarding participant rights as approved by the Commission of Helsinki and informed consent from the participants, was obtained.

Results

Implementation of AMBAR

AMBAR was implemented in three care networks selected through convenience sampling in two Mexican states: Morelos and Hidalgo. An average of 24 participants formed each group, with a total of eight groups trained: six in Morelos and two in Hidalgo. The total number of health personnel trained in at least one course module was 339, all of whom provided verbal informed consent for participation.

Learning achievements were evaluated through a questionnaire at the beginning and end of each module. Increases in knowledge were observed in all subjects: nutrition (96%), problem solving for breastfeeding (73%), neonatal resuscitation (41%), counseling to prevent adolescent pregnancy (39%), newborn care practices (37%), leadership and management (24%),

Table I
Thematic content of module I

Dominion	*Topics*	*Competencies*
1. Teamwork and prenatal care	1.1. Introduction 1.2. Background on birth care by qualified personnel 1.3. Teamwork 1.4. Communication 1.5. Foundations of prenatal care 1.6. Referral and counter-referral	Recognize and discuss communication and teamwork strategies necessary to foster mutual support among team members Awareness of the role of midwifery personnel and evidence-based care practices Understand the importance of continuity in care provision to mother and newborn
2. Labor and birth care; evidence-based medicine (EBM)	2.1. Labor 2.2. Birth 2.3. Routine practices during pregnancy, birth and postpartum care 2.4. Evidence-based medicine: how to break the paradigm?	Recognize the benefits of performing care based on the EBM model and avoiding routine practices without basis in evidence during birth, immediate postpartum and newborn care Recognize and analyze the national standards and international recommendations for women's care during pregnancy, birth and postpartum period Correctly manage a labor and birth event, by studying the physiology of these phenomena
3. Care for newborns and mother in immediate postpartum based on EBM	3.1. Care practices for the newborn 3.2. Care in the immediate postpartum period 3.3. Barriers to care for mother and newborn	Analyze appropriate care practices for women during the immediate postpartum period to assure their adequate implementation Analyze initial responses, as well as non-urgent care practices for the newborn in order to ensure timely care intervention Identify different forms of care for mother and newborn recognizing new team structures and equipment, and adapt available resources to create a safe and culturally appropriate care space
4. Compassion culture: Mindfulness	4.1. Human psychological needs 4.2. The importance of self-care 4.3. Stress and anxiety in health personnel 4.4 Empathy: Institutional and individual disengagement	Acknowledge the importance of attention to psychological needs during women's care Acknowledge the natural emotional vulnerability of the woman and newborn, as well as of the health professional Incorporate new care habits based on the cultivation of empathy and compassion

Source: own elaboration based on "AMBAR: Modelo Integral de Partería" implemented in Morelos and Hidalgo, Mexico during 2016-2018.[17]

Table II
Thematic content of module II

Dominion	*Topics*	*Competencies*
1. Competencies and skills for newborn care based on EBM	Neonatal resuscitation 1.1 Factors associated with neonatal resuscitation 1.2 Steps of the Algorithm of Neonatal Resuscitation	Understand the importance of skills in neonatal resuscitation and the physiological changes which newborns experience at birth Identify risk factors to determine which newborns may need some form of resuscitation Apply the resuscitation program in newborn care management for both low- and high-risk births Become familiar with the basic tools and resources for a successful resuscitation Recognize the importance of communication and teamwork for successful outcomes
2. Competencies and skills for breastfeeding counseling based on EBM	2. Breastfeeding What is breastfeeding? The importance of breastfeeding Breastfeeding complications and barriers Non-recommended practices	Understand the importance of breastfeeding, newborn feeding, best practices and potential complications Obtain the necessary knowledge to successfully encourage and implement breastfeeding Obtain the skills and attitudes such as responsibility, respect, dignified treatment, and confidentiality needed to support breastfeeding mothers

Source: own elaboration based on "AMBAR: Modelo Integral de Partería" implemented in Morelos and Hidalgo, Mexico during 2016-2018.[17]

Table III
Thematic content of module III

Dominion	*Topics*	*Competencies*
1.Competencies and skills for pregnancy prevention in adolescents	1.1. Prevention of adolescent pregnancy 1.2 Counseling model for adolescents and young adults: Model PLI-SS-IT	Become familiarized with counseling oriented towards adolescents and young adults, sexual and reproductive health according to the Model P-LI-SS-IT for sexual counseling, perspective based on strengths, motivational interview, goal-setting theory and transtheoretical model of behavior change Obtain skills in communication, observation, active listening, evaluation and client-centered intervention Display attitudes of non-judgement, tolerance, teamwork, self-reflection, courage, openness, responsibility and honesty
2. Nutrition and physical activity before, during and after pregnancy	2.1 Nutrition before, during and after pregnancy 2.2 Gestational diabetes 2.3 Physical activity during pregnancy	Provide counseling on adequate nutrition for women across the life cycle, particularly during pregnancy and postpartum, with consideration towards regionally available foods Understand the importance of a healthy diet and optimal nutritional state before, during and after pregnancy Be able to recommend the type of physical activity most appropriate to women in the pregnancy and postpartum period Acquire knowledge of healthy eating habits and physical activity during a healthy pregnancy, or pregnancy at high risk for weight loss during or immediately following birth
3. Leadership and management	3.1 AMBAR long-term activity log 3.2 Types of collaborators 3.3 Identification of team members according to their qualities and abilities, "types of collaborators"	Acquire tools for leadership and management for the achievement of common team goals, identify the diverse abilities and knowledge of the team members with the objective to strengthen them Understand leadership styles and mature leadership in order to be able to assume this role in appropriate circumstances Acquire skills in communication, observation and interest in improvement; develop skills in leadership and management

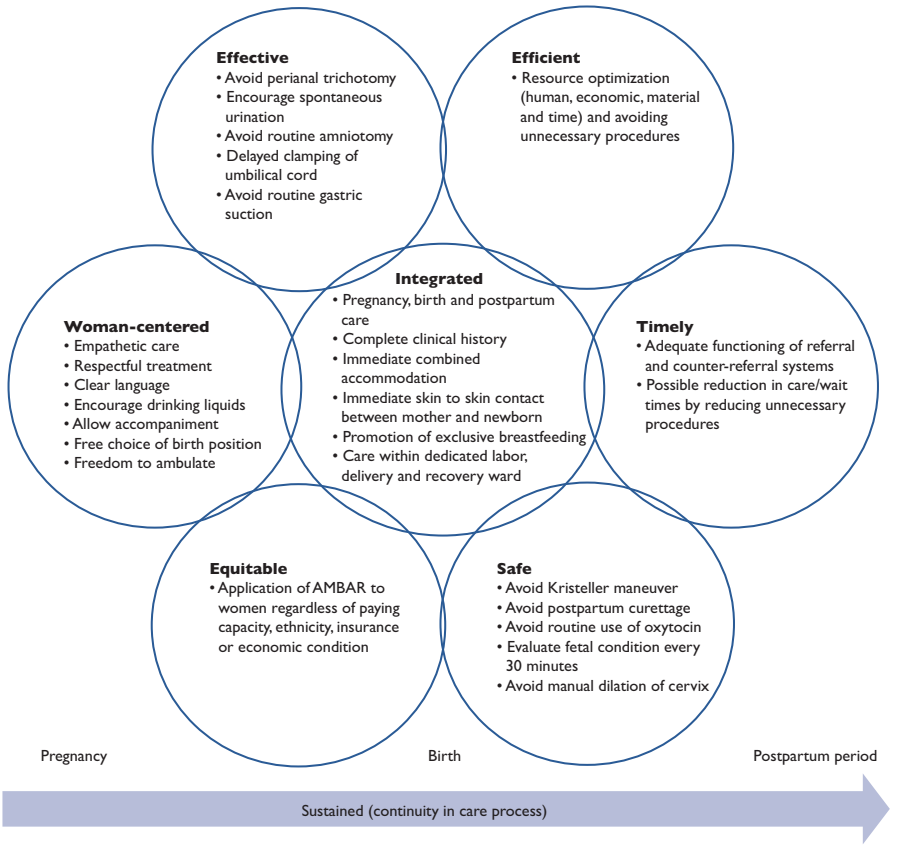
Source: own elaboration based on "AMBAR: Modelo Integral de Partería" implemented in Morelos and Hidalgo, Mexico during 2016-2018.[17]

Module I Prenatal care Evidence-based medicine Referral and counter-referral	Qualified care for eutocic delivery Communication and teamwork	Newborn care Immediate postpartum period
Module II Breastfeeding	Qualified care for dystocic delivery Neonatal resuscitation Communication and teamwork	Care for at-risk newborns Immediate postpartum period
Module III Counseling for adolescent pregnancy prevention Nutrition and physical activity Gestational Diabetes Leadership and managemen for the implementation of AMBAR	Vertical birth care Nutrition and physical activity Leadership and management for the implementation of AMBAR	Nutrition and physical activity Leadership and management for the implementation of AMBAR
Pregnancy	Birth	Postpartum period

Experiences and barriers to implementation
Evidence-based medicine
Woman-centered care

Source: own elaboration based on "AMBAR: Modelo Integral de Partería" implemented in Morelos and Hidalgo, Mexico during 2016-2018.[17]

FIGURE 1. AMBAR MODEL FOR CARE PROVISION DURING PREGNANCY, DELIVERY AND THE POSTPARTUM PERIOD



Source: own elaboration based on improved quality of care approach by the National Academy of Medicine and World Health Organization and "AMBAR: Modelo Integral de Partería" implemented in Morelos and Hidalgo, Mexico during 2016-2018.[17,19,20]

FIGURE 2. EIGHT OBJECTIVES TO IMPROVE THE QUALITY OF BIRTH CARE

physiology of birth and evidence-based medical practices (23%), and care during labor, birth and immediate postpartum (20%).

Direct observation during birth care (pre- and post- for each module) was performed through a checklist of practices which the personnel was noted to have or have not completed, aiming to objectively identify changes in these practices; an evaluation of the impact of AMBAR on these practices is detailed elsewhere.[17] In summary, it was discovered that during labor care a significant increase was achieved in skin-to-skin contact and delayed cord clamping, as well as significant reductions in the number of digital vaginal examinations and the percentage of births by C-sections. In addition, better communication was reported between the health care team and the female patient, beginning by calling the patient by name and offering her greater privacy.

To conclude the three-module course, five focus groups were organized to explore general perceptions on the course, main takeaways, barriers, and facilitators to incorporating better care practices, and recommendations for achieving change. Among the principal findings in these focus groups were improved treatment of women during labor and birth, a reduction in routine episiotomies and an increase in allowing the woman to choose her birthing position (asking her which position was most comfortable). Barriers were recognized in lack of knowledge of the current labor and birth care standard, routine practices which were medically unnecessary, lack of knowledge of evidence-based practices and lack of the trust needed to implement these changes, lack of adequate resources and spaces to provide woman-centered birth care. Furthermore, a certain fear was acknowledged regarding legal action in the event of complications during birth.

Discussion

In line with national and international recommendations, AMBAR emphasized the importance of applying positive practices such as the Active Management of the Third Phase of Pregnancy (MATEP for its Spanish acronym), delayed clamping of the umbilical cord and immediate initiation of contact between mother and newborn (including early breastfeeding).[17,34,35] It also highlighted the importance of avoiding routine practices which are not recommended or contraindicated, such as the use of fundal pressure (Kristeller maneuver), routine episiotomy during birth and postpartum uterine cleansing.[36-38] Health personnel achieved important changes in these practices after receiving AMBAR training course to avoid damage and to maintain quality of care.

Applicability should take place in any health facility (public or private) in which deliveries are attended, including rural areas with less socioeconomic development, higher degree of marginalization and less coverage of obstetric care, where deficiencies for delivery care are due to a combination of factors such as the lack of adequate infrastructure and mainly the lack of qualified health personnel for obstetric care, hence staff training proposals such as AMBAR are necessary.[15,39] This program does not require any infrastructure nor high-cost simulators so it can be implemented in any health care institution.

According to the information collected in focus group sessions, as well as in the written comments of the evaluation at the end of each module, the educational design was appealing, and including simulations in all modules fostered interest and participation. Participants felt that this facilitated learning as well as inclusion of the new evidence-based practices into their daily routine of obstetric and neonatal care. This shows once again, that learning processes built through simulations are superior to those achieved through the classic training model.[40]

Implications for practice and/or policy

The main contribution of this study is to document the experience of the design and implementation of a training strategy (AMBAR) that managed to increase knowledge and improved birth care quality based in the approach by the NAM and WHO, due to its foundation in actions drawn from the seven objectives proposed by the NAM of the United States of America, revised, and expanded by the WHO (figure 2). The program was designed to account for the preferences of the woman receiving health services, prioritizing respectful treatment and informed consent. For example, by encouraging free choice for the woman to select a birthing position.

The safety of mother and newborn was prioritized by avoiding unnecessary risks, countering the tendency towards over-medicalization which can lead to medically unjustified Cesarean sections.

AMBAR achieves the substitution of purely empirical practices with effective practices of evidence-based medicine. The course was tested and evaluated in Mexican public hospitals where most births are attended nationally, and implementation was not based in any individual characteristic such as ethnicity, paying capacity, economic status or insurance affiliation, thereby contributing to equity in care.

Because AMBAR is founded in scientific evidence, its implementation can avoid the over-medicalization of birth care and inappropriate use of resources towards

actions currently performed routinely. In this way it contributes to the efficient use of resources, which in turn encourages timely service provision as long as unnecessary and resource-costly procedures are avoided. This serves to counter the over-saturation of health care services.

Given that the care process during pregnancy, birth and postpartum period is continual, actions of AMBAR promote sustained attention in which the final result of the process is the outcome of the articulation between all phases, allowing integrated service provision.

The implementation of the AMBAR training allowed the current knowledge of health personnel responsible for obstetric care to be updated through a care model grounded in scientific evidence and which contributed to improve quality of care.

The implementation of AMBAR model as part of the public policy for birth care can help increase the quality of care and relieve hospital participation in the birth care process, favoring the use of hospital resources to care for conditions that require it.

Among the limitations of this study, the convenience sample within the unique context of Mexico (central zone) do not allow the extrapolation of results to other regions of the country. Nevertheless, the available evidence (in terms of knowledge gained and acceptability by the personnel trained) permits the assertion that AMBAR could maintain acceptability and positive results in birth care in other areas of the country. In the context of Mexico, in which disrespectful and lack of evidence-based birth take place,[5,17,41] this kind of intervention is essential.

Another limitation in terms of potential effectiveness in different systems, like the private sector is the lack of economic incentives to promote natural, and respectful childbirth as well as political will of federal and state health authorities. This can be accompanied by a wider process of altering conceptions of the medicalization of care, and it is happening in some private schools of medicine in Mexico. Which have started to reassess its curricula, but this could take time to gain momentum nationally.

Declaration of conflict of interests. The authors declare that they have no conflict of interests.

References

1. Bowser D, Hill K. Exploring evidence for disrespect and abuse in facility-based childbirth report of a landscape analysis. USAID-TRAction Project, 2010 [cited Sep 29, 2023]. Available from: https://www.hsph.harvard.edu/wp-content/uploads/sites/2413/2014/05/Exploring-Evidence-RMC_Bowser_rep_2010.pdf

2. Castro R, Frías SM. Obstetric violence in Mexico: results from a 2016 National Household Survey. Violence Against Women. 2020;26(6-7):555-72. https://doi.org/10.1177/1077801219836732

3. Treviño-Siller S, González-Hernández D, Fritz J, Rojas A, Martínez-Garrido P, Olvera-García M, *et al*. La voz del personal y las usuarias de los servicios de salud: Percepción y conocimiento sobre la partería profesional. In: Freyermuth G, Vega M, Tinoco A, Gil G, eds. Los caminos para parir en México en el siglo XXI. Experiencias de investigación, vinculación, formación y comunicación. Mexico City: Centro de Investigaciones y Estudios Superiores en Antropología Social, 2108;80-7 [cited Sep 29, 2023]. Available from: https://omm.org.mx/wp-content/uploads/2020/09/Los-caminos-para-parir-en-Me%CC%81xico_Formacio%CC%81n_29nov_web.pdf

4. Treviño-Siller S, González-Hernández D, Fritz J, Olvera-García M, Montoya A, Sánchez-Dominguez M, *et al*. Is it possible to incorporate evidence-based professional midwifery practices into public health services in Mexico? Women and Birth. 2019;33(3):240-50. https://doi.org/10.1016/j.wombi.2019.05.008

5. Montoya A, Fritz J, Labora A, Rodriguez M, Walker D, Treviño-Siller S, *et al*. Respectful and evidence-based birth care in Mexico (or lack thereof): An observational study. Women and Birth. 2020;33(6):574-82. https://doi.org/10.1016/j.wombi.2020.02.011

6. Fritz J, Walker DM, Cohen S, Angeles G, Lamadrid-Figueroa H. Can a simulation-based training program impact the use of evidence based routine practices at birth? Results of a hospital-based cluster randomized trial in Mexico. PLoS One. 2017;12(3). https://doi.org/10.1371/journal.pone.0172623

7. Warren C, Njuki R, Abuya T, Ndwiga C, Maingi G, Serwanga J, *et al*. Study protocol for promoting respectful maternity care initiative to assess, measure and design interventions to reduce disrespect and abuse during childbirth in Kenya. BMC Pregnancy Childbirth. 2013;13:1-9. https://doi.org/10.1186/1471-2393-13-21

8. World Health Organization. Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Geneva: WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division, 2023 [cited May 16, 2023]. Available from: https://www.who.int/publications/i/item/9789240068759

9. The World Bank. Mortality rate, infant (per 1,000 live births). Data. The World Bank, 2023 [cited May 16, 2023]. Available from: https://data.worldbank.org/indicator/SP.DYN.IMRT.IN

10. Fondo de Población de las Naciones Unidas. El Estado de las Parteras en el Mundo 2014. Hacia el acceso universal a la salud, un derecho de la mujer. New York: UNFPA, 2014, 01-228 [cited Mar 18, 2023]. Available from: https://www.unfpa.org/es/publications/el-estado-de-las-parteras-en-el-mundo-2014

11. Segal L, Leach MJ. An evidence-based health workforce model for primary and community care. Implement Sci. 2011;6(1). https://doi.org/10.1186/1748-5908-6-93

12. Secretaría de Salud. Gobierno de México. Datos abiertos: Nacimientos. Mexico: Dirección General de Información en Salud, 2020 [cited Jun 25, 2023]. Available from: http://www.dgis.salud.gob.mx/contenidos/basesdedatos/da_nacimientos_gobmx.html

13. Institute of Health Metrics and Evaluation. Health-related SDGs. Prevalence of child stunting, Global. IHME, 2020 [cited Aug 6, 2022]. Available from: https://vizhub.healthdata.org/sdg/#

14. Secretaría de Salud. Subsistema de Información sobre Nacimientos (SINAC). Mexico: Dirección General de Información en Salud, 2021 [cited Oct 6, 2022]. Available from: http://www.dgis.salud.gob.mx/contenidos/sinais/s_sinac.html

15. Lazcano-Ponce E, Schiavon R, Uribe-Zúñiga P, Walker D, Suárez-López L, Luna-Gordillo R, *et al*. Cobertura de atención del parto en México: Su interpretación en el contexto de la mortalidad materna. Salud Publica Mex. 2013;55(suppl 2):S214-24.

16. World Health Organization. Maternal, Newborn, Child and Adolescent Health and Ageing. Quality of care for maternal, newborn, child and ado-

lescent health. Geneva: WHO, 2023 [cited May 16, 2023]. Available from: https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/quality-of-care
17. Séris M, Fritz J, Montoya A, Lamadrid-Figueroa H. AMBAR: A midwifery-led training program to improve obstetric and neonatal practices among low-risk births in Mexico. Birth. 2023;50(1):151-60. https://doi.org/10.1111/birt.12699
18. Quintas-Cid MC. Pedagogía experiencial o vivencial: el programa Intensivo para jóvenes. RES Rev Educ Soc. 2016;(22):291-301 [cited May 16, 2023]. Available from: https://eduso.net/res/wp-content/uploads/2020/06/pedagiaexpereincial_res_22.pdf
19. Chassin MR, Galvin RW, Quality and the NR on HC. The urgent need to improve health care quality. Institute of Medicine National Roundtable on Health Care Quality. JAMA. 1998;280(11):1000-5. https://doi.org/10.1001/jama.280.11.1000
20. World Health Organization. Delivering quality health services: a global imperative for universal health coverage. Geneva: WHO, 2018 [cited May 16, 2023]. Available from: https://www.who.int/publications/i/item/9789241513906
21. Brüggemann AJ, Wijma B, Swahnberg K. Abuse in health care: A concept analysis. Scand J Caring Sci. 2012;26(1):123-32. https://doi.org/10.1111/j.1471-6712.2011.00918.x
22. Walker DM, Cohen SR, Estrada F, Monterroso ME, Jenny A, Fritz J, *et al*. PRONTO training for obstetric and neonatal emergencies in Mexico. Int J Gynecol Obstet. 2012;116(2):128-33. https://doi.org/10.1016/j.ijgo.2011.09.021
23. Heckmair B, Michl W. Erleben und Lernen: Einstieg in die Erlebnispädagogik. Luchterhand, 1998.
24. Lori JR, Ofosu-Darkwah H, Boyd CJ, Banerjee T, Adanu RMK. Improving health literacy through group antenatal care: A prospective cohort study. BMC Pregnancy Childbirth. 2017;17(1). https://doi.org/10.1186/s12884-017-1414-5
25. Hamman WR. The complexity of team training: What we have learned from aviation and its applications to medicine. BMJ Qual Saf. 2004;13(suppl 1):i72-9. http://doi.org/10.1136/qshc.2004.009910
26. Halamek LP, Kaegi DM, Gaba DM, Sowb YA, Smith BC, Smith BE, *et al*. Time for a new paradigm in pediatric medical education: Teaching neonatal resuscitation in a simulated delivery room environment. Pediatrics. 2000;106(4). https://doi.org/10.1542/peds.106.4.e45
27. World Health Organization. Midwifery education and care. Geneva: WHO, 2023 [cited May 16, 2023]. Available from: https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/midwifery
28. Subsecretaría de Promoción y prevención de la salud. Norma Oficial Mexicana NOM-007-SSA2-2016, Para la atención de la mujer durante el embarazo, parto y puerperio, y de la persona recién nacida. Mexico: Secretaría de Salud, 2016 [cited Feb 1, 2022]. Available from: https://www.cndh.org.mx/sites/all/doc/Programas/VIH/Leyes%20y%20normas%20y%20reglamentos/Norma%20Oficial%20Mexicana/NOM-007-SSA2-2016%20Embarazo,%20parto%20y%20puerperio.pdf
29. Sistema Nacional de Salud. Guía de práctica clínica (GPC). Vigilancia y Atención Amigable en el Trabajo de Parto en Embarazo de Bajo Riesgo. Mexico: CENETEC, 2019 [cited May 16, 2023]. Available from: http://www.cenetec-difusion.com/CMGPC/GPC-IMSS-052-19/ER.pdf
30. García-Ramírez HJ, Almaguer-González JA, Vargas-Vite V, Pimienta-Luna F. Guía de Implantación. Modelo de atención a las mujeres durante el embarazo, parto y puerperio. Enfoque humanizado, intercultural y seguro. Mexico: Secretaría de Salud, 2018 [cited May 16, 2023]. Available from: https://www.gob.mx/cms/uploads/attachment/file/29343/GuiaImplantacionModeloParto.pdf
31. Wolfe A. Crossing the quality chasm: A new health care system for the 21st century. Washington DC: The National Academies Press, 2001, 233-5. https://doi.org/10.17226/10027
32. Renfrew MJ, McFadden A, Bastos MH, Campbell J, Amos-Channon A, Cheung NF, *et al*. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. Lancet. 2014;384(9948):1129-45. https://doi.org/10.1016/S0140-6736(14)60789-3
33. Juvinyà-Canal D, Bertran-Noguer C, Suñer-Soler R. Alfabetización para la salud, más que información. Health literacy, more than information. Gac Sanit 2018;32(1):8-10. https://doi.org/10.1016/j.gaceta.2017.07.005
34. Stanton C, Armbruster D, Knight R, Ariawan I, Gbangbade S, Getachew A, *et al*. Use of active management of the third stage of labour in seven developing countries. Bull World Heal Organ. 2009;87(3):207-15. https://doi.org/10.2471/BLT.08.052597
35. Suzuki S. Effect of early skin-to-skin contact on breast-feeding. J Obstet Gynaecol. 2013;33(7):695-6. https://doi.org/10.3109/01443615.2013.819843
36. Liljestrand J. Episiotomía en el parto vaginal: Comentario de la BSR. La Biblioteca de Salud Reproductiva de la OMS. Ginebra: Organización Mundial de la Salud. 2003;1(4):11-34 [cited May 16, 2023]. Available from: https://cienciadedatosysalud.org/wp-content/uploads/2019/06/Episiotomia_def_3.pdf
37. Sartore A, De Seta F, Maso G, Ricci G, Alberico S, Borelli M, *et al*. The effects of uterine fundal pressure (Kristeller maneuver) on pelvic floor function after vaginal delivery. Arch Gynecol Obstet. 2012;286(5):1135-9. https://doi.org/10.1007/s00404-012-2444-x
38. Camacho-Villarreal AL, Pérez-López JC. Revisión de cavidad uterina instrumentada gentil frente a la revisión manual y su relación con la hemorragia posparto. Enfermería Univ. 2013;10(1):21-6. https://doi.org/10.1016/S1665-7063(13)72624-1
39. Sesia P. Violencia obstétrica en México: La consolidación disputada de un nuevo paradigma. In: Quattrocchi P, Magnone N. Violencia obstétrica en América Latina: Conceptualización, experiencias, medición y estrategias. Remedios de Escalada: EDUNLa, 2020, 3-29. https://doi.org/10.18294/9789874937506
40. Vázquez-Mata G, Guillamet-Lloveras A. El entrenamiento basado en la simulación como innovación imprescindible en la formación médica. Educ med. 2009;12(3):149-55 [cited May 16, 2023]. Available from: https://scielo.isciii.es/scielo.php?pid=S1575-18132009000400004&script=sci_abstract
41. Valdez-Santiago R, Arenas-Monreal L, Rojas-Carmona A, Sánchez-Domínguez M. "If we're here, it's only because we have no money…" discrimination and violence in Mexican maternity wards. BMC Pregnancy Childbirth. 2018;18. https://doi.org/10.1186/s12884-018-1897-8