Helping Babies Breathe
Country Case Study: Colombia

Successful National Scale-Up Led by the Ministry of Health and Neonatology Association

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March 2015

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Acknowledgements

We would like to recognize the contributions of the Colombian Ministry of Health and Social Protection, particularly representatives: Drs. Ana Maria Penuela, Martha Patricia Ospino Guzman, and Martha Linero. We would also like to recognize the trainers of the Colombian Neonatology Association (ASCON): Drs. Alexi Bracho, Jose Maria Solano, Ana Maria Carizosa, Julieta Castro, Karen Marthe, Lilian Macias, Doris Toro, Eulalia Tamayo, Natalia Restrepo, Karina Villera, and Clara Galvis.

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This report was made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-00 and Cooperative Agreement AID-OAA-A-14-00028. The contents are the responsibility of The Maternal and Child Health Integrated Program (MCHIP) and The Maternal and Child Survival Program (MCSP), and do not necessarily reflect the views of USAID or the United States Government.

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Abbreviations

AAP	American Academy of Pediatrics
ALAPE	Pediatric Association of Latin America
ASCON	Colombian Neonatology Association (Asociación Colombiana de Neonatología)
HBB	Helping Babies Breathe
DHS	Demographic Health Survey
IMNCI	Integrated Management of Newborn Childhood Illness
LAC	Latin America and the Caribbean
LDSC-C	Latter Day Saints Church- Charities
MCHIP	Maternal Child Health Integrated Program
MSPS	Ministry of Health and Social Protection (Ministerio de Salud y Protección Social)
NMR	neonatal mortality rate
PAHO	Pan American Health Organization
SBA	skilled birth attendance
TA	technical assistance
TBA	traditional birth attendants
TOT	training of trainers
USAID	United States Agency for International Development

Introduction

The neonatal mortality rate (NMR) (11.2/1,000 live births[1]) in Colombia has been stable in the last decade. Presently, the NMR is slightly higher than the average rate in Latin America and the Caribbean (LAC), where regionally, significant gaps in access and quality of services are pervasive. Recent figures indicate that 64% of under-five deaths in are newborn (Figure 1)[1]. In addition, there are important inequalities in several departments. For example, the NMRs are nearly triple the national average[2] in the southwestern departments of Guainía and Vichada as well as in the central coastal department of Choco, where the NMR is 29/1,000 live births. Furthermore, while Colombia has achieved nearly universal skilled birth attendance (SBA) nationally, one in three births in rural areas of the Amazon are delivered outside the facility[3].

The complications of prematurity, sepsis, and birth asphyxia (lack of spontaneous breathing at birth) are the three main causes of newborn mortality in Colombia. Significant improvements have been made (Figure 2), with a reduction in the number of newborn deaths per year due to asphyxia by nearly one-half during the 2000-2013 timeframe.

Figure 1: Newborn deaths contribute to nearly two-thirds of all deaths in the first year of life in Colombia, 2005- 2010

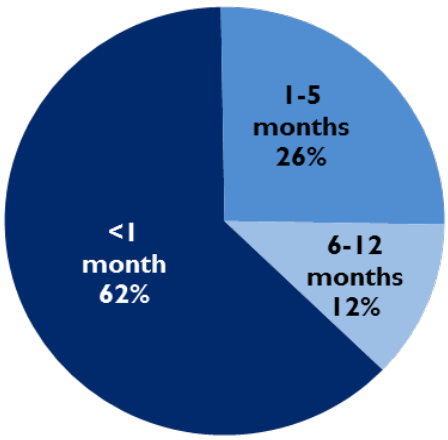


Figure 2: Number of newborn deaths due to asphyxia in Colombia, 2000–2013

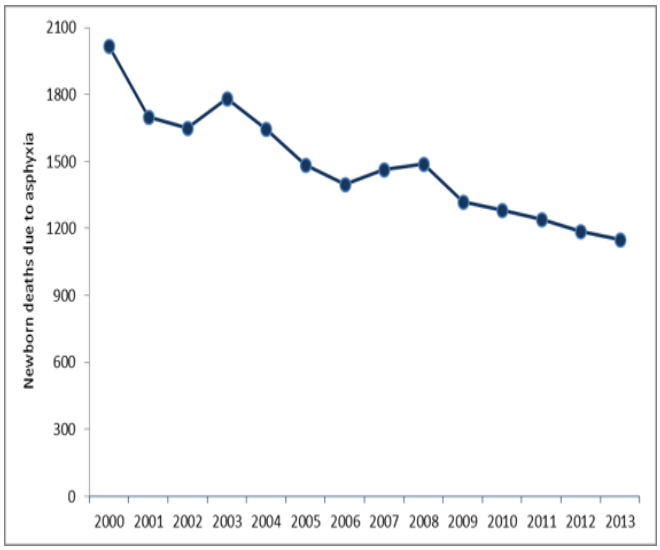


Figure 1 Source: Departamento Administrativo Nacional de Estadística (DANE) and Encuesta Nacional de Demografía y Salud (ENDS), 2010.
Figure 2 Source: WHO Global Health Observatory Data Repository. 2013.

[1]CRVS Lancet Every Newborn Series. 2014.
[2]Plan de Acción de Salud Materna E Infantil Primeros Mil Días de Vida y Marco Estratégico Nacional Armonizado con el Plan Decenal de Salud Pública, Colombia 2013-2021. Pan American Health Organization (PAHO). 2013.
[3]World Health Organization (WHO) Global Health Observatory Data Repository. 2013.

Preparation for Scale-Up

The Colombian Ministry of Health and Social Protection (MSPS) and the Colombian Neonatology Association (ASCON) have driven the national scale-up of Helping Babies Breathe (HBB), presently in 25 of the country's 32 departments (Figure 3). A particular focus has been placed on conducting training in vulnerable areas where accessing services is challenging because of armed conflict and/or geographically difficult terrain.[4]

The HBB curriculum was introduced to the country in 2011 through the participation of MSPS and ASCON in two key regional meetings: 1) the LAC Pediatric Association convening in Panama, in a training of trainers (TOT) sponsored by the American Academy of Pediatrics (AAP); and 2) the South American Forum of Neonatal National Alliances, held in Paraguay, in a TOT sponsored by USAID's Maternal Child Health Integrated Program (MCHIP). The President and Vice President of ASCON were the first to receive training as master trainers, followed by MSPS participation in the TOT organized by MCHIP. The Pan American Health Organization (PAHO) approached MCHIP for technical assistance (TA) and incorporated HBB into their existing cooperation agreement with Colombia. MCHIP also played a key role in facilitating a collaborative relationship between MSPS and Latter Day Saints Church Charities (LDSC-C), allowing for further expansion of the HBB strategy following the end of the agreement between PAHO and Colombia.

At the country level, MSPS adopted HBB quickly, initiating the national implementation process in coordination with ASCON and PAHO through two multi-regional TOT courses led by MCHIP. These courses were implemented in cooperation with the Health Care Improvement (HCI) Project, led by the University Research Co., LLC (URC). Ninety national trainers, including general practitioners, pediatricians, and neonatologists participated. When selecting providers, a focus was placed on serving the country's most vulnerable populations in both geographically and politically challenging landscapes. The regions initially introduced to HBB include: Arauca, Cauca, Choco, Nariño, Norte de Santander, Putumayo Amazonas, Vaupes, and Vichada (Figure 3).

In 2012, with continued support from ASCON, AAP, and MCHIP, MSPS facilitated training events during two international meetings, the Pan-American Neonatology Conference and the Pediatric Association of Latin America (ALAPE) Conference, reaching participants from 12 countries across the LAC region. In May 2012, MCHIP spearheaded coordination between PAHO, URC's HCI Project, MSPS, and ASCON to organize a national TOT that included 40 regional Integrated Management of Neonatal and Childhood Illnesses (IMNCI) instructors, many of them affiliated to academic institutions. Additional national training courses were held in that same year, the largest hosting 90 nurses. By the end of its first full year of implementation, a total of 283 health care providers had been trained in country, including general practitioners, pediatricians, neonatologists, and nurses.

Expansion efforts spearheaded by MSPS and ASCON continued in 2013, a year marked by several important events, including 1) the incorporation of HBB into national IMNCI guidelines and 2) the introduction of HBB in pre-service IMNCI curriculum as well as post-service training. International meetings, including The Latin and Ibero-American Pediatric Conference and the National Neonatology Conference, as well as national symposiums geared toward physicians and nurses, led to increased coverage nationally. By the end of the second year of implementation, HBB training had been delivered in 23 of the country's 32 departments.

[4]Colombian Neonatology Association (ASCON). 2015.

MSPS continues to prioritize the underserved and most vulnerable, including its indigenous and Afro-Colombian populations, as well as promoting and carrying out HBB training for traditional birth attendants (TBAs) in areas of difficult access. As of December 2014, 1,859 trainers and providers have received HBB training.[5]

HBB Funding, Inputs and Partnerships

MSPS has a national budget to carry out training courses and purchase equipment. ASCON sends invitations to the selected department's Health Secretaries, who in turn select 50 providers to participate. Additionally, ASCON develops the training agendas, selects trainers, collects and reports training registration information, and handles logistics arrangements, including venue selection. ASCON also covers the costs of meals for trainers and participants, per diems, lodging and transportation for participants, and distribution of materials, equipment, and certificates. LSDC-C continues to provide financial and human resources in the form of equipment, materials and instructors, as well as venue and logistics support when not otherwise available.[6]

Adaptation of HBB for the Local Context

In 2011, the HBB implementation guide and educational materials were translated into Spanish for use in LAC; various versions of the translation were revised by MCHIP. The translated materials were tested during the South American Forum of Neonatal National Alliances. Pictures were also adapted to the various ethnicities of the region. MSPS requested and obtained permission to incorporate AAP images into the updated IMNCI guidelines.

[5]C. Galvis, Colombian Neonatology Association (ASCON). 2015.
[6]HBB Training Evaluation, Colombian Neonatology Association (ASCON). 2014.

Implementation

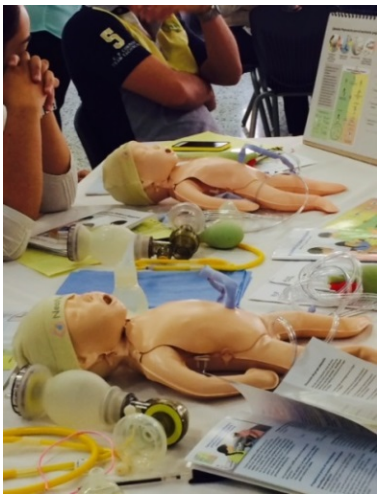
In-Service Training and Pre-Service Education

Presently, there are nine master trainers in Colombia; a master trainer is present at every HBB training, where the trainee-to-trainer ratio is 10:1. Upon successfully completing the training, one provider from each institution is given an HBB kit, including NeoNatalie simulator, and in turn, signs an agreement (Annex II) requiring the trained provider(s) to conduct a minimum of two replication trainings within a two-month time period. This strategy has provided two-fold benefits, as it has enabled many staff attending deliveries at peripheral facilities to participate in replication trainings and at the same time, has promoted that trainers practice and teach their acquired skills in neonatal resuscitation.

To date, a range of providers in Colombia have received HBB training, including auxiliary and registered nurses, general practitioners, pediatricians, neonatologists, obstetricians/ gynecologists, anesthesiologists, and respiratory and physical therapists. In addition, nursing and medical students in their final semesters of pre-professional training as well as specialty students in pediatrics, gynecology and obstetrics, and internal medicine have received training.

Actions to Improve Quality of Implementation and Retention of Skills

The duration of the training workshop is 10 hours completed by an additional practical component. Participants are organized into groups of no more than 10 per instructor; each group has at least three simulators, basic resuscitation equipment, and several flowcharts, and each participant is given one manual. During the practical component, providers participate in role playing under specific circumstances. Participants also alternate roles between teacher and participant, which has been identified as an important concept for carrying out successful trainings and enhancing adult learning.



Pre-and post-tests are administered to evaluate participants' existing knowledge and to address any gaps. Following the trainings, ASCON provides trained providers with in-person and virtual support in HBB and advanced resuscitation.

HBB Equipment and Logistics Systems

The Directorate of Health Services and Pharmaceuticals serves as the national regulatory committee for medical equipment and supplies. Established in 2014, Resolution 2003 establishes that "all medical facilities providing obstetrical care, neonatology services, intermediate and intensive care must have the necessary medical equipment to deliver respiratory therapy and oxygen administration to newborns." Established in 2011, Decree 4107 states "the Directorate, in coordination with designated authorities, is responsible for the design, adaptation, and evaluation of policies regarding pharmaceuticals, medical equipment, and biomedical technology". Presently, there are no existing guidelines in place for the procurement of new and replacement HBB equipment and materials; MSPS and ASCON procure materials from Laerdal which ships the materials from China.

Training materials are printed in-country with AAP authorization. LDSC-C donates materials and equipment. Equipment is distributed at the end of HBB training courses, wherein one health care provider from each institution represented is selected and given one HBB kit which includes: Neonatalie mannequin, two facilitator flip charts, 10 participant workbooks, and two action plans (one wall poster and one small size). To date, nearly 60 kits have been distributed. Trained providers receive their HBB certificate upon submitting documentation (participant list and photos and/or videos) of completion of three replication trainings.

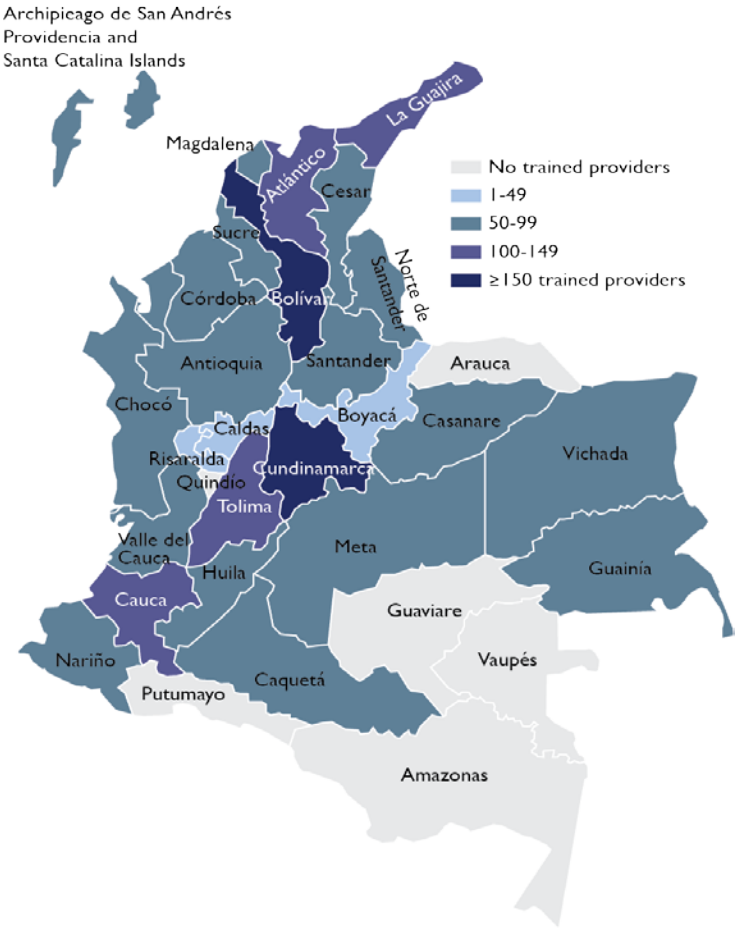
Recording and Reporting System

In 2013, MCHIP shared the data collection tools and indicators piloted in the Dominican Republic under MCHIP. MSPS showed great interest in measuring; however, uptake has not been achieved to date. Newborn health program indicators, including mortality, causes of death, and stillbirths, are recorded in facility registers and reported to regional MSPS departments for analysis. MCSP has received a request for technical assistance from ASCON (as the advisory group for MSPS) for indicators and data collection tools.

Implementation Status in Country

As of 2015, there are trained providers in 81% of the country's departments (26 of 32). The number of trained HBB providers to date in each department can be found in Annex I.

Figure 3: Trained HBB Providers by Department



Institutionalization

Integration of HBB

HBB was embedded into the national newborn health program through its incorporation into IMNCI guidelines in 2013. This year (2015), the HBB program is anticipated for inclusion in the First 1000 Days guidelines, which seeks to integrate approaches for health from conception until a child's second birthday.

Sustainability of HBB

The HBB program is led and owned by the government, and further supported by scientific societies, donors, and development partners. Formerly, MCHIP and PAHO provided financial and human resources. MCHIP facilitated coordination between LDSC-C and MSPS for continuation of activities, a now collaborative partnership that continues today. MSPS, in coordination with ASCON, coordinates and guides the implementation process according to the highest newborn morbidity and mortality rates reported in the First Days Health Plan.

Key Lessons Learned

Summary of Success Factors

MSPS and ASCON have taken complete ownership of the implementation and scale-up of HBB. Trained staff have demonstrated their commitment to training their referring facilities. HBB trainings have been funded in great part by MSPS and ASCON, demonstrating the clear transfer of ownership and uptake by the government. Several HBB champions emerged at the outset of intervention and have continued to play a fundamental role in scaling up HBB. These include: ASCON board members, PAHO, and MSPS technical staff, particularly the IMNCI national trainers—many of whom are also university professors and have included HBB in the pre-service curricula.

The government has authorized training of TBAs in those regions where no health care provider is present or accessible. The first TBAs successfully completed HBB training in 2014. Despite having limited formal education (some illiterate), the participating TBAs demonstrated a clear commitment and dedication to acquiring basic neonatal resuscitation skills. The HBB training presented an opportunity for trained providers to work uniformly with TBAs to promote adequate newborn care.

Summary of Challenges

MSPS and ASCON have identified the need to build the capacity of providers in the areas of training, supervision, and logistics.

Next Steps toward Institutionalization and National Impact

Plans

Data collection on basic resuscitation and essential newborn care at birth indicators will continue to generate valuable new information for program adjustments. Ongoing monitoring and supervision of data collection is needed to ensure timely and accurate information. Collecting information related to retention of skills will also inform training and reinforce the acquisition of skills and practice.

Recommendations

- Develop a procurement plan for acquisition of equipment.
- Conduct an assessment to determine amount of equipment needed in each implementing hospital. The UN Commission has developed a quantification tool for newborn resuscitation equipment that can be used for this purpose.
- Continue pre-service training for students in health care in existing universities, and consider expansion to other academic institutions.
- Conduct refresher trainings.
- Include resuscitation data in labor room registers to collect, analyze, and report related indicators.
- Advocate for HBB training to be a requirement for all health personnel providing newborn care.
- Advocate for the uptake of HBB indicators building on pilot conducted in the Dominican Republic under MCHIP.
- Advocate for active participation of implementing hospitals in the LAC HBB virtual Community of Practice, created and managed by USAID's ASSIST project, which provides an avenue for health care providers to continue engagement among program implementers at the facility level within the country and across the LAC region.

Annex I: Number of Trained HBB Providers to Date, by Department*

#	Department(s)	Number of Trained Providers
1.	Amazonas	-
2.	Antioquia	50
3.	Arauca	-
4.	Atlántico	105
5.	Bolívar	210
6.	Boyacá	34
7.	Caldas/ Risaralda	48
8.	Caquetá	50
9.	Casanare	50
10.	Cauca	106
11.	César	52
12.	Chocó	85
13.	Córdoba	70
14.	Cundinamarca	313
15.	Guainía/ Vichada	90
16.	Guaviare	-
17.	Huila	50
18.	La Guajira	127
19.	Magdalena	71
20.	Meta	50
21.	Nariño	50
22.	Norte de Santander	50
23.	Putumayo	-
24.	Quindío	-
25.	San Andrés, Providencia and Santa Catalina	50
26.	Santander	50
27.	Sucre	63
28.	Tolima	119
29.	Valle del Cauca	50
30.	Vaupés	-

*As of February 2015 (ASCON).

Annex II: Carta de Compromiso

MINISTERIO DE SALUD Y PROTECCION SOCIAL
SOCIEDAD COLOMBIANA DE PEDIATRIA
ASOCIACIÓN COLOMBIANA DE NEONATOLOGIA - ASCON
IGLESIA DE JESUCRISTO DE LOS SANTOS DE LOS ÚLTIMOS DÍAS

ATENCIÓN INTEGRAL A LA PRIMERA INFANCIA **MIL - PRIMEROS DIAS DE VIDA**	**DEPARTAMENTO DE LA GUAJIRA – SERVICIO DEPARTAMENTAL DE SALUD**

TALLER MINUTO DE ORO – AYUDANDO A LOS BEBES A RESPIRAR ABR

Las malformaciones congénitas, la infección neonatal, la prematurez y la asfixia son las principales causas de morbilidad y mortalidad neonatal en Colombia. La incidencia de asfixia perinatal, la podemos disminuir, si contamos con personal entrenado en la atención del recién nacido haciendo énfasis en el primer minuto de vida denominado en la literatura "el minuto de oro"[7].

Los primeros segundos de vida de un bebe son vitales para su desarrollo físico y neurológico es por ello que se desarrolló el programa de minuto de oro como una estrategia para salvar la vida de los recién nacidos y disminuir la mortalidad en neonatos.

Por lo anterior, el Ministerio de Salud y Protección Social en asocio con las sociedades científicas y el apoyo de la iglesia de Jesucristo de los Santos de los Últimos Días, está realizando un proceso de desarrollo de capacidades de los equipos de salud y personas que atienden directamente a los recién nacidos desde el momento del parto en el marco de la política nacional y territorial de la atención integral a la primera infancia.

Se considera personal entrenado aquel que ha recibido capacitación teórico práctica sobre el manejo del recién nacido y reanimación básica que le facilite brindar una atención oportuna y pertinente al bebé.

El primer taller de capacitación del equipo de salud del Departamento de La Guajira se realizó el 18 de Enero de 2014 por parte de la Asociación Colombiana de Neonatología en la cual participaron 57 personas—1 ginecobstetra, 5 pediatras, 15 médicos generales, 22 enfermeras, 7 auxiliares de enfermería, 3 terapeutas (física y respiratoria) y 1 ingeniero de sistemas - que representan a 15 instituciones salud que atienden a las mujeres en el momento del parto y en consecuencia gestionan la atención del recién nacido en el primer minuto vida.

Con el propósito de asegurar que las instituciones que participaron repliquen el curso de "Ayudando a los bebés a respirar—ABR" dentro del grupo de sus profesionales se entrega uno o dos kits de simulador neonatal con el compromiso de:

1. Realizar en el siguiente trimestre un taller (s) de ayudando los bebés a respirar y enviar a ASCON la base de datos de los participantes al mismo.

[7]2011. Elk Grove Village, IL: Academia Americana de Pediatría

2. Valorar las condiciones técnicas y tecnológicas de la atención del recién nacido en el momento de parto.
3. Gestionar y analizar los indicadores de calidad de atención al recién nacido.
4. Mantener en buenas condiciones del kit de simulador neonatal

Con el objetivo de medir a largo plazo el impacto de taller de ayudando a los bebés a respirar sobre la morbilidad y mortalidad neonatal, ASCON realizará en coordinación con la secretaria de salud departamental seguimiento de estos compromisos.

Se entrega kit de simulador neonatal a las siguientes instituciones:

- Gyomedical
- I.S.S. – En liquidación
- Hospital Nuestra Señora de los Remedios
- Hospital San José
- Caribe Salud
- Clínica CEDES
- ESE Hospital Nazaret
- Coomeva EPS
- Clínica Riohacha
- Hospital Armando Pabón López - Manaure
- Clínica Aso cabildo
- Hospital Nuestra Señora del Pilar - Barrancas

Se anexa base de datos con nombres de las personas a las cuales se les entrega el kit.

Annex III: Sample HBB Training Agenda

HORA	TEMA	ACTIVIDADES Y METODOLOGIA
7:00–8:30	Preparación del equipo	Preparación del equipo por parte de los facilitadores
7:30	Inscripciones	Llegada de los participantes - inscripciones
08:30–9:30	Ceremonia de apertura- Bienvenida y presentación de los docentes y participantes.	Protocolo - presentación de participantes y facilitadores. Entrega del manual a cada asistente
9:30–10:00	Pretest	Entrega de formularios de pretest a los participantes
10:00–10:30	Principios y justificación del ABR.	Presentación con diapositivas
10:30–11:00	Diseño educativo y ayudando a los bebes a respirar (revisión herramienta N. 8 de la guía de implementación.	Presentación con diapositivas. presentación de herramientas de trabajo
11:00–11:30	Preparación para el nacimiento	Presentación con diapositivas, práctica lavado de manos según protocolo de la OMS herramienta plan de acción • Presentación/demostración, práctica con el plan de acción, verifíquese usted mismo • Práctica de la habilidad en pares (plan de emergencia, área para el parto, lavado de manos, área y equipo para ventilación • Preguntas y discusión en grupo Trabajo en grupos con cada facilitador Trabajo en parejas donde cada participante cumple el rol de alumno y de docente de forma alternante
11:30–12:00	Atención de rutina del recién nacido	• Presentación, demostración, práctica con el plan de acción, verifíquese usted mismo • Práctica de la habilidad en pares con retroalimentación de los facilitadores de la mesa. Secado, espiración, mantener caliente, vigilar respiración, pinzar, atar, cortar cordón. piel a piel y apego precoz. • Preguntas y discusión del grupo. Trabajo en grupos con cada facilitador. Trabajo en parejas donde cada participante cumple el rol de alumno y de docente de forma alternante.

HORA	TEMA	ACTIVIDADES Y METODOLOGIA
12:00–13:00	Minuto de oro (despeje la vía aérea y estimulación de la respiración)	• Presentación/ demostración, práctica con el plan de acción y verifíquese usted mismo. • Práctica de la habilidad en pares. Posición de la cabeza, despeje de la vía aérea, estimulación de la respiración evaluación de la respiración. • Preguntas y discusión en grupo Trabajo en grupos con cada facilitador. Trabajo en parejas donde cada participante cumple el rol de alumno y de docente de forma alternante. Sociodrama grupal. Caso clínico
13:00–14:00	ALMUERZO	
14:00–15:00	Minuto de oro (ventilación)	• Presentación, demostración, práctica con el plan de acción y verifíquese usted mismo. • Práctica de habilidades en pares. Iniciación de la ventilación, ventilación con bolsa – máscara. Evaluar la respiración. Trabajo en grupos con cada facilitador. Trabajo en parejas donde cada participante cumple el rol de alumno y de docente de forma alternante. Sociodrama grupal. Caso clínico
15:00–16:00	Ventilación continua con frecuencia cardiaca normal o lenta	• Presentación/demostración/práctica con el plan de acción y verifíquese usted mismo. • Práctica de habilidades en pares pedir ayuda y mejorar la ventilación, evaluar la frecuencia cardiaca, continuar la ventilación, vigilar con la madre, activar el plan de emergencia y apoyar la familia. • Preguntas y discusión de grupo. Trabajo en grupos con cada facilitador. Trabajo en parejas donde cada participante cumple el rol de alumno y de docente de forma alternante. Sociodrama grupal. Caso clínico
16:00–17:00	Evaluación de los participantes: • Dominio del plan de acción. • Ventilación con bolsa y máscara.	Aplicación del formato por parte de los facilitadores evaluando habilidades de los participantes
17:00–17:30	Prueba de conocimiento escrita - POSTEST	
17:30–18:00	Discusión final, evaluación del curso y entrega de certificados.	Entrega de Kits a 5 instituciones participantes en el taller.