Safe Childbirth Checklist Collaboration

Improving the Health of Mothers and Neonates

PROGRESS REPORT
August 2014
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Foreword

It is a pleasure to present this first Progress Report for the WHO Safe Childbirth Checklist Collaboration.

We launched the Collaboration in November 2012 in the hope of gaining a better understanding of the factors that would lead to a successful implementation of the Safe Childbirth Checklist, and indeed the barriers to its successful implementation. Members have joined from around the world, committing to implement the Checklist in a research context and sharing their experiences for the greater learning of the Collaboration as a whole.

More than a year on, the programme has stimulated 20 projects across a diverse range of settings. It has been exciting to see the projects grow, and a pleasure to share a snapshot of their work through this report. There is huge potential to learn from this experience and to create a sustainable and readily implementable tool for global distribution. This report also sets out how we can endeavour to capitalize on this potential over the coming year.

The importance of this project has grown since its inception, as WHO and our partners have embarked on a major effort to expand Universal Health Coverage. Clearly, one of the most important priority populations for this effort will be mothers and children. In the words of the Director-General herself, "What good does it do to offer free maternal care and have a high proportion of babies delivered in health facilities if the quality of care is sub-standard or even dangerous?" The Safe Childbirth Checklist and the Collaboration which was is designed to test its use on the ground, will add to our ability to improve the quality of care while expanding access to services.

The Collaboration is being led by the Department of Service Delivery and Safety in the Health Systems and Innovation Cluster which I lead, but it has been jointly undertaken with colleagues from the Department of Maternal, Newborn, Child and Adolescent Health and the Department of Reproductive Health and Research. Our colleagues at WHO have enabled a truly multidisciplinary approach to this work. I would also like to thank the team at Harvard University and Ariadne Labs for their continued support and partnership in the development of the Checklist. Finally, we thank the Bill and Melinda Gates Foundation for funding development of the Checklist and partial funding of the Collaboration.

We are looking forward to another exciting year. It holds much promise.

Dr Marie-Paule Kieny
Assistant Director-General
Health Systems and Innovation
World Health Organization
Too many women and children die around the time of childbirth. A substantive fraction of these unacceptable deaths could be prevented by implementing simple and well-known health-care practices, accessible in the vast majority of health facilities across the world. However, health care is complex. Providers often work in busy environments with poor infrastructure, or with competing priorities. Quality of care then suffers, as do mothers and neonates.

WHO has long been working with its partners to develop new tools to facilitate the dissemination and reach of life-saving maternal and newborn practices. In November 2012, WHO launched the WHO Safe Childbirth Checklist Collaboration as a platform for a wide range of stakeholders to explore the best conditions for implementing the WHO Safe Childbirth Checklist, a promising tool, which in its initial testing, has proven efficacy in facilitating the compliance of health-care workers with best practices around the time of childbirth.

A year later, 20 institutions across all the regions of the world, have joined WHO’s call to join this worldwide collaboration, offering a unique opportunity to better understand how the Checklist can best be implemented under diverse economic, social, organizational and cultural conditions. Clinicians, birth attendants and other personnel have limited time to incorporate such innovative tools into their daily practice and thus it needs to be matched with efficient implementation. The challenge is to understand the conditions that need to be in place for the Checklist to be effectively used by the staff.

The Collaboration seeks to provide valuable insights for WHO and partners to understand and develop the set of supporting tools to facilitate use of the WHO Safe Childbirth Checklist in its endeavour to significantly reduce maternal and neonatal mortality and morbidity around the globe.

This is being undertaken alongside the Better Birth Program, one of the largest hospital-based randomized trials ever conducted. The Study is looking at over 100,000 childbirths, to see whether adoption of the Checklist improves health outcomes for mothers and neonates.

These two initiatives are synergistic; together they aim to demonstrate the potential of the Checklist as an essential tool to improve the quality of maternal and newborn care and to save the lives of both mothers and newborns.

This document provides an overview of the progress achieved by the Collaboration in its first year of operations. It first provides an overview of the dire statistics around the time of childbirth, introduces the Checklist and then discusses the work of the Collaboration itself.
Figure 1. Development of the WHO Safe Childbirth Checklist
Background

Childbirth

The risk of maternal and perinatal complications are increasingly understood. Current estimates suggest that 289,000 women die every year during pregnancy and childbirth. In 2010, there were 2.6 million stillbirths and nearly 3 million neonates died within their first month of life. Analysis shows the greatest burden of maternal and perinatal mortality is clustered around the time of birth, with the majority of deaths occurring within the first 24 hours after delivery, and these primarily in low-resource settings.

Achieving skilled attendance at every birth has emerged as a global priority and women in high-risk regions are increasingly being encouraged to deliver in health facilities. In practice, however, poor quality care is frequently observed and has been identified as a major contributor to childbirth-related harm. A WHO-led multi-country study also suggests that the provision of life-saving interventions alone is not enough to reduce maternal mortality, but that coverage needs to be matched with improvements in the quality of care being delivered.

Although there has been some progress towards reaching Millennium Development Goals 4 and 5 it is estimated that many countries will take many more years to achieve them. Indeed, childbirth-associated mortality continues to be a pressing global challenge despite the fact that most of these deaths could be prevented by delivering high quality but simple interventions. Two key elements to this requires expanding access to deliveries by trained birth attendants and ensuring that the quality of care provided by those health workers is of high quality. This is one of the core elements of WHO’s strategy on Universal Health Coverage.

The WHO Safe Childbirth Checklist

WHO established a working group to analyze the common causes of morbidity and mortality around the time of childbirth and extract a number of simple and effective interventions that could save lives. As a result of this work, WHO and its partners, with the technical leadership of the Harvard School of Public Health, developed a Checklist to support the delivery of essential maternal and perinatal care practices.

The key features of childbirth and its associated challenges encouraged the use of a checklist-based intervention. For example, the major causes of maternal and perinatal mortality are well-known. Most deaths occur within a narrow time frame and international guidelines for best practices during childbirth exist but are not followed. Above all, proven interventions are simple to perform, but can be difficult to remember and execute in the proper sequence.

The 29-item WHO Safe Childbirth Checklist Pilot Edition followed a rigorous methodology and was tested for usability in ten countries across Africa and Asia. It contains items addressing the major causes of maternal death, intrapartum-related stillbirths, and neonatal deaths in low-income countries, namely:

- Haemorrhage
- Infection
- Obstructed labour
- Hypertensive disorders
- Inadequate intrapartum care
- Birth asphyxia
- Complications related to prematurity

Each evidence-based item on the Checklist is a critical action that, if missed, can lead to severe harm.
Implementation research focuses on how to operationalize and realize proven interventions in the real world. It comprises both contextual factors that influence the delivery of an intervention and the delivery of the intervention itself.

Beyond the uptake of proven interventions, implementation research is defined by questions such as how evidence-based, efficacious interventions can be successfully implemented in the real world, what factors contribute to or hinder the success of such interventions, and why this is the case. In the context of public health, implementation research seeks to bridge the gap between innovations – such as pharmaceutical products and public health interventions – and their delivery to countries, communities or institutions that need them, across diverse settings.

Research on the implementation and delivery of health interventions remains a neglected area of study despite the formidable gap that exists between innovation and impact. Affordable and efficacious health interventions exist and are continually being developed, but there is very little understanding of how to implement such interventions in real world settings, particularly in developing countries. Indeed, many evidence-based interventions are unsuccessful when transferred to developing countries, primarily because their implementation is untested, unsuitable, or incomplete.

Box 1: Checklists

Checklists prompt users to remember to complete essential tasks and have long been integral to maintaining safety in industries such as aviation. In recent years, checklists have also been found to improve safety in health, with checklist programmes in intensive care medicine and surgery demonstrating significant reductions in complications and deaths.

Box 2: Implementation Research

Implementation research focuses on how to operationalize and realize proven interventions in the real world. It comprises both contextual factors that influence the delivery of an intervention and the delivery of the intervention itself.

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Research on the implementation and delivery of health interventions remains a neglected area of study despite the formidable gap that exists between innovation and impact. Affordable and efficacious health interventions exist and are continually being developed, but there is very little understanding of how to implement such interventions in real world settings, particularly in developing countries. Indeed, many evidence-based interventions are unsuccessful when transferred to developing countries, primarily because their implementation is untested, unsuitable, or incomplete.
The Safe Childbirth Checklist Collaboration seeks to mitigate the gap between innovation and implementation by promoting and collating research related to implementation of the Checklist. Stakeholders, including health-care, research, academic institutions, non-governmental organizations and others have been invited to join the Collaboration.

Collaboration participants are required to implement the Checklist within a research or evaluative framework that addresses issues related to the conditions of checklist implementation, and are expected to share their experiences and findings with WHO and fellow Collaboration members. WHO has particularly encouraged projects that address important knowledge gaps such as:

- acceptability, feasibility, and usability of the Checklist;
- compliance with best practices;
- mechanisms and resources that facilitate or hinder use of the Checklist.

By joining the Collaboration, members are provided access to the Pilot Edition of the WHO Safe Childbirth Checklist and Manual. They are connected through an online platform called SharePoint, where they participate in a series of technical webinars, one-to-one conferences, and actively share individual project outputs and general resources. Collaborators regularly load project profiles, progress reports and other key tools, such as adaptation and translations of the Checklist.
Box 3: Collaboration Resources

SharePoint

The SCC Collaboration SharePoint is a password-protected platform which facilitate communication amongst members of the Collaboration and the sharing of resources. It is where the Pilot Edition of the Checklist and its Manual sit, as their use are restricted within the scope of the Collaboration. The SharePoint facilitates the sharing of announcements and other relevant information, while also serving as a learning platform for participants. Different tools and materials are archived on the SharePoint, including project profiles, progress reports, translations or adaptations of the Checklist and other material from the participating sites.

Website

As part of the WHO Service Delivery and Safety website, the Collaboration website provides general information on the Safe Childbirth Checklist Programme, and serves as the entry point for the Collaboration:

http://www.who.int/patientsafety/implementation/Checklists/childbirth/en/

Webinars

The SCC Collaboration holds regular webinars as a means if communicating with its members, sharing updates, and informing them about the latest technical developments. An open informative webinar about the Collaboration and its vision was also organized in the spring of 2013, bringing together about 280 attendees from 55 countries. Participants represented a wide range of facilities, including universities, hospitals, research organizations, WHO Regional and Country Offices, Ministries of Health, midwifery schools, other types of health-care facilities and many more institutions. The recorded webinar is available on the WHO Collaboration website (link indicated above).

Two technical webinars were run in collaboration with the Harvard School of Public Health in the second half of 2013. The first focused on strategies to engage leaders at both clinical and political levels in implementing the Checklist, while the second focused on the challenges of implementation.

Newsletters and News Digest

Collaboration newsletters were issued in June and November 2013. These included updates on progress of the Collaboration and the Better Birth Study, new developments from WHO in the field of maternal and child health, implementation research, as well as announcements of new relevant publications and tools. Newsletters were complemented with monthly News Digests, focusing on the most recent Collaboration updates.
Since its launch in 2012, 20 institutions involving a large number of facilities, have joined the Collaboration. Participants come from a diverse range of settings, organizations and provider institutions. They cover the six WHO world regions, and a wide range of organizational perspectives, development levels and environmental conditions, as well as research topics. The most frequent research questions look at issues of access, sustainability, usability, barriers to implementation, feasibility, acceptability, modes of delivery, Checklist adaptation and compliance with best practices.

Each site joined the initiative at different times, and therefore some are more advanced in their research. A brief summary of each Collaborator is provided below.

**African Region**

**Uganda (Management Sciences for Health, USA)**

Management Sciences for Health (MSH), a global health non-profit organization based in the United States, is conducting research on the implementation of the Checklist at different facility levels in Uganda, in collaboration with the Ugandan Ministry of Health. Implementation will take place in two districts in Uganda, Kamwenge and Kyenjojo. While specific facilities have yet to be chosen, the team is aiming to implement the Checklist in 20 sites.

**Research:** The research will focus on implementation of the Checklist, evaluating its effect on best practices in childbirth. The team will specifically evaluate the use, completeness and fidelity of the Checklist. Use refers to whether the Checklist is used at all; completeness refers to the extent to which it is completed in full, without items being skipped; and fidelity refers to the extent to which items are performed as intended, with items ticked as completed only when checks have genuinely been made, at the right time and in communication with the whole team.

**Progress:** The group completed a French adaptation and field-testing of the Checklist in 2013, and have just begun field implementation in February 2014. The project is now prioritizing introduction of the Checklist at the district level, integrating the Checklist into ongoing quality improvement efforts, providing training and orientation to staff, and preparing facilities for use of the Checklist. MSH emphasises the importance of providing support, coaching, training, troubleshooting and fostering team cohesion as necessary factors for achieving sustained use of the Checklist.

**Conakry, Guinea (Jhpiego, USA)**

Jhpiego, an international non-profit health organization affiliated with Johns Hopkins University (USA) is currently developing and testing a mobile version of the Checklist in three referral hospitals in Conakry, Guinea in collaboration with the Ministry of Health. Donka University Teaching Hospital, Matam Medical and Surgical Center and Ratoma Medical and Surgical Center are participating in the project, together with the Director of Family Health at the MoH. Jhpiego has been implementing a comprehensive emergency obstetrics and newborn care programme in these
hospitals for the last three years, which complements their research on the SCC.

Research: The focus of Jhpiego’s research project is the development, refinement, and use of a mobile version of the Safe Childbirth Checklist (mSCC). The team will assess feasibility of using the mSCC to improve care during childbirth and gather feedback from providers on acceptability and usability of the mSCC in comparison to the paper version. Data will be collected through direct observation and semi-structured interviews with end-users.

Progress: The Checklist has been translated into French and a prototype mobile version of the Checklist has been created for Android tablets. Jhpiego launched a field refinement phase of the mSCC in February 2014 to inform further development of the mobile-based Checklist.

The mobile Checklist collects data in real time, opening new and additional possibilities for using and harnessing the data that is generated by the application.

Multi-site project (Millennium Villages Project, USA)

Millennium Villages Project (MVP), a joint initiative of the Earth Institute at Columbia University and the Millennium Promise Alliance, a non-profit organization based in the United States of America, is coordinating the largest project currently associated with the Collaboration. The WHO SCC is currently being implemented in MVP-supported facilities across six different African countries: Uganda, Malawi, Senegal, Tanzania, Kenya and Rwanda. The Checklist has been or will be implemented in various facilities within each country.

Research: MVP’s projects aim to improve the quality of care provided to women during childbirth and to increase the likelihood of survival for mothers and babies through use of the Checklist. MVP’s research focuses on gathering qualitative feedback from end-users on usability, feasibility and acceptability of the SCC through focus group discussions and semi-structured interviews.

Progress: This project is in its full implementation phase. The Ruhiira Millennium Village in southwestern Uganda served as a pilot for the SCC in the Millennium Villages Project and 21 midwives were trained on its use. Following positive feedback from the Ruhiira team and successful implementation in six health facilities in the cluster area, the SCC was introduced to a further five Millennium Villages in late 2013. Over 40 healthcare providers, including nurses, midwives, and clinical officers across the remaining five countries have been trained on using the SCC. In Malawi, Senegal, Tanzania, Kenya and Rwanda, implementation of the SCC is in its initial stages and continued monitoring and supervision are required before it can be scaled up to other health facilities or to district hospitals. Additionally, MVP has adapted and translated the SCC into French for use in Senegal and into Swahili for use in Tanzania.

The project emphasizes training of clinical health workers in proper use of the SCC, as well as empowerment of clinical leaders in improving adherence to the core set of safety standards included in the Checklist, whereas the Checklist serves as a constant reminder to the midwives of the basic requirements before any procedure.

Region of the Americas
Buenos Aires, Argentina (Hospital Alemán)

The Hospital Aleman is an institution of the Deutsches Community of Buenos Aires, Argentina, with approximately 1500 deliveries per annum.

Research: The study project is being run by the Neonatology Service and Obstetric Service of the hospital which is exploring compliance with best practices. They are specifically interested in how use of the Checklist may affect breast-feeding rates in the first hour after birth, measuring it through pre- and post- intervention study.

Progress: This project is in its early implementation phase. The team have adapted the Checklist to their local environment, and have designed a complementary pre-discharge Checklist to guarantee compliance with a set of additional best practices associated with neonatal care.

Sao Paulo, Brazil (Conjunto Hospitalar do Mandaqui)

Located in the north of Sao Paulo, Conjunto Hospitalar do Mandaqui is a public general hospital with a high-risk maternity unit (approximately 200 births per month). It serves a population of 2 million people.

Research: This research project will investigate acceptability and usability of the Checklist by the health-care professionals in this setting.

Progress: This team has just joined the Collaboration.

México DF, Mexico (CONAMED)

The National Commission of Medical Arbitration (CONAMED) is an autonomous institution affiliated with the Ministry of Health. It was created in 1996 with the purpose of facilitating arbitration and conflict resolution between patients and health professionals.

Research: CONAMED translated the WHO Safe Childbirth Checklist into Spanish following a validation assessment process with a multidisciplinary team, including researchers, professional translators and clinicians involving general and medical specialists in gynaecology, obstetrics and neonatology, and perinatal nurses. Following this step, CONAMED will test use of the Checklist in three pilot hospitals, including public, private and non-profit (Hospital Materno Magdalena-Contreras, Hospital Médica Sur and CIMIGEN). Research will focus on assessing the acceptability and feasibility of use of the Checklist based on qualitative methodologies.

In addition, CONAMED is studying the possibilities of incorporating training on the items included in the Checklist in the undergraduate training of clinicians in a number of nursing schools in Mexico.

Progress: After translation and adaptation of the Checklist into Spanish, and recruitment of the pilot hospitals, the team is advancing with preparations of the implementation phase.

Lima, Peru (Hospital National Dos de Mayo)

Dos de Mayo National Hospital is a tertiary care referral hospital located in Lima, Peru. It has a 40-bed obstetrics department, and cares for approximately 3250 births per year. The project team involving senior leadership and staff from the departments of Gynecology and Obstetrics, and Pediatrics, together with the Head Office Support for Training, Teaching and Research aims to improve adherence to best practices in childbirth.

Research: They aim to undertake implementation analysis of compliance with the best practices included in the Checklist. Their plan is to complete the implementation phase over a six-month period. The study will be complemented with a qualitative assessment looking at clinicians' perceptions of acceptability of the Checklist, as well as why compliance was successful or not.

Progress: The Safe Childbirth Checklist has been translated and adapted to their environment. It Checklist was initially introduced to a small group for testing and focus group feedback, before full implementation. The team has also run extensive awareness campaigns across the hospitals and provided training to practitioners involved in maternal care. They have now begun data collection.
Eastern Mediterranean Region

Cairo, Egypt (Ain Shams Faculty of Medicine)

Ain Shams Faculty of Medicine’s Healthcare Quality Unit, located in Cairo, Egypt, recently launched their research project at Ain Shams Maternity Hospital. One of four referral hospitals of Ain Shams University, the hospital took care of 13,966 deliveries in 2012, including 8,075 normal vaginal deliveries and 5,891 caesarean. The hospital has 10 delivery rooms, 11 operating theatres, 8 beds in the Obstetrics and Gynaecology ICU and 36 incubators.

Research: In an interventional follow-up study, the Healthcare Quality Unit is exploring effectiveness of the Checklist in facilitating compliance with best practices. The research team anticipates a sample size of 270 births pre- and 270 births post-intervention.

Progress: The team launched a pilot project in early February 2014 and have outlined four upcoming phases of the project. These include the preparatory phase, involving literature reviews and administrative approval, an initial assessment phase of three months for baseline data collection, followed by implementation and post-implementation phases lasting 3 months each.

Mashhad, Islamic Republic of Iran, (Mashhad University of Medical Sciences)

The Research Center for Patient Safety, an affiliation of the Mashhad University of Medical Sciences, is running this project across three teaching referral hospitals that are associated with the university: Ommonibani, Ghaem and Imam Reza. The main study hospital has 9 wards, 3 birthing units, 2 labour rooms, and a NICU with 12 active beds. The study team involved 99 nurses, 52 midwives, 8 paediatricians and 5 gynaecologists. The average number of deliveries across the three hospitals is approximately 7,000 per year.

Research: The team chose to conduct a study looking at compliance with best practices in two intervention and one control hospitals. The initial outcomes were: improving hand hygiene in the delivery process, improving maternal knowledge during hospitalization, and assuring first hour breastfeeding. The team will also look at the rates of episiotomy dehiscence and infections to assess the possible impact of the Checklist in these two outcomes.

Progress: This project is in full implementation phase. The team have completed the vast majority of a quasi-experimental prospective pre- and post-intervention study. The Checklist was translated into Farsi and slightly adapted, based on the hospitals’ standard practices. Six to seven midwives were trained to observe and check the Checklist items in each hospital. Baseline data was collected during a two week period. After completing the pre-intervention phase, the project team organized a series of educational sessions about childbirth where they informed staff about the project and included a 2-hour training session on use of the Checklist. Post-intervention data collection was conducted for one month and was finalized in September 2013. The data are currently being analyzed to investigate the possible improvements in the delivery of selected practices. The research team received tremendous support from the hospitals’ leadership as well as from clinical staff.

Zgharta, Lebanon, (Saydet Zgharta Hospital)

Saydet Zgharta Hospital is a private non-profit hospital that cares for the northern communities of Lebanon, including Lebanese, Syrian and Palestinian refugees. The Obstetric and Gynecology department has approximately 950 births per year. Eleven obstetricians, five midwives and the patient safety expert are involved in this project.
**Research:** This team aims to explore how effective the Checklist is in facilitating compliance with best practices.

**Progress:** The Checklist was adapted based on comments received from local staff. In an initial trial phase, the Checklist was used in the obstetric/gynaecology unit for two weeks. Implementation has been affected by the emergency situation related to the conflict in Syria and arrival of refugees. The plans are to provide further training and guidance to clinical staff to reinforce the use of the Checklist.

**Rawalpindi, Pakistan (Holy Family Hospital, Rawalpindi Medical College)**

The Holy Family Hospital is a 1000 bed tertiary care center in northern Pakistan. It cares for 15 000 deliveries per year. This research group is particularly concerned with the very high maternal mortality rates in Pakistan and are interested in using this opportunity to assess potential of the Checklist to improve maternal and child care.

**Research:** The team's main goal is to explore the effectiveness of this Checklist in improving compliance of health workers with best practices. They are also interested in factors that enable its sustained use and any barriers to its implementation. Improvements in compliance with best practices will be checked by comparing checklists used six months apart. The primary outcome will be the average rate of successful compliance of essential childbirth practices by health workers at each birth. Maternal and neonatal mortality and morbidity during the study period will also be recorded as a reference. Additionally, a series of focus group discussions will be held to assess feasibility and acceptability of the Checklist across health-care providers.

**Progress:** The Checklist has been adapted to the local context, with the inclusion of additional items (substitution of a Hepatitis B item instead of the one on HIV) and introduced to the whole maternity unit in a two-hour session held in July 2013, supported by periodic refreshment sessions. Implementation started on 1 August 2013 with checklists being included as part of the admission forms. By the end of 2013, the Checklist had been used on 300 patients. A first focus group discussion was held in
December last year. Based on their opinion and discussion with the WHO team, a point on thrombo-prophylaxis will now be included in new versions of the Checklist.

Khartoum, Sudan (Royal Care International Hospital)

The Royal Care International Hospital is a tertiary care center in Khartoum, Sudan. It hosts three obstetrics and gynecology consultants, four specialists, five residents, five midwives, four nurses and a large number of part time staff. There are approximately 840 deliveries per year. The project team sees an opportunity in this project to increase awareness and engagement with patient safety practices around childbirth among the clinical staff. It is expected that the Checklist will help with implementation of best practices. The possibility of sharing experiences regarding implementation of the Checklist with WHO and other countries and promoting a comprehensive behaviour change strategy are seen as important outputs of this project.

Research: The research project focuses on assessing compliance with best practices and usability of the Checklist.

Progress: The team have trained staff on use of the Checklist and on the challenges of implementation. They have also conducted initial interviews with staff members to appraise their first reactions concerning acceptability of the Checklist. The tool is currently being implemented across obstetric teams. Implementation has been facilitated by a synergistic initiative towards implementation of the WHO Surgical Safety Checklist in the hospital’s operating rooms. Staff are thus familiar with the concept of checklists. Once the implementation phase is complete, the team will run focus groups to gain a better understanding of the usability and feasibility of the Checklist among clinical staff.

Khartoum, Sudan (Omdurman Maternity Hospital)

Omdurman Maternity Hospital is a specialized hospital in Khartoum, Sudan, specializing in pregnancy, delivery and women’s health. The total number of deliveries in 2013 was 35,255, 10,685 of which were by caesarean section. The research team is interested in studying the effects of introducing the WHO Safe Childbirth Checklist on health-care provider childbirth practices, with 45 doctors and 60 midwives using the Checklist. They anticipate including 800 births, over a period of two months, in the study.

Research: This research will be conducted by the Patient Safety Department in the Federal Ministry of Health’s Quality Directorate. The specific objectives of the study are to measure the adherence of health-care providers to a set of predetermined practices, both pre-and post-introduction of the Checklist, and to obtain qualitative feedback describing the enablers, barriers and modifications required for implementation of the Checklist. At the end of the study, a focus group discussion will be facilitated to discuss the advantages and disadvantages of the Checklist and potential modifications needed to improve it.

Progress: This team has just joined the Collaboration.

European Region

Barcelona, Spain (Hospital del Mar-Parc de Salut Mar)

Hospital del Mar-Parc de Salut Mar is located in Barcelona (Spain) and has 400 ordinary beds and two childbirth areas. In 2012, they attended 1588 childbirths, with a caesarean section rate of 23.6%.

Research: Their project aims to introduce the Checklist over a period of 12 months. They hope to reach 80% coverage. Prior to introduction of the Checklist, they will develop an awareness-raising and training programme with staff in the obstetrics and gynecology departments. Their aim is to
analyze compliance with the best practices included in the Checklist and correlate it with the rate of complications.

**Progress:** This team has just joined the Collaboration. They have begun to design information sessions to discuss the Checklist and will proceed to translate and adapt the Checklist in the coming months.

### South-East Asian Region

**Bangladesh (James P. Grant School of Public Health)**

A research team based at the James P. Grant School of Public Health (JPGSPH) of the BRAC Institute of Global Health (BIGH) joined the Collaboration at the start of 2014.

**Research:** The team wish to explore mechanisms that may facilitate sustained adherence to best practices in childbirth. To do this, they have designed a year-long pre-post type quasi-experimental study with the introduction of a strategy of adherence to the Safe Childbirth Checklist. In the pre-intervention phase, deliveries and practice of nurses will be observed in two comparable district hospitals. An adapted version of the Checklist will then be introduced, but only one hospital will be provided with supervision in order to facilitate its use. The adherence will then be compared between the two groups. They will also undertake focus group discussions to help identify barriers to adherence.

**Progress:** The study was launched in March 2014. To date, each hospital has recorded 220 deliveries in the pre-intervention phase.
Bangladesh (Centre for Reproductive Health and International Centre for Diarrhoeal Disease Research)

The Centre for Reproductive Health (CRH), which is part of the International Centre for Diarrhoeal Disease Research, Bangladesh, joined the Collaboration in November 2103. The study plans to involve two government medical college hospitals situated in the capital of the country. These are Dhaka Medical College Hospitals (DMCH) and Shaheed Suhrawardy Medical College Hospital (ShSMCH). The hospitals have 1700 and 550 inpatient beds respectively. An average 3000 or more normal deliveries take place every year in each medical college hospital.

Research: The team plans to undertake some implementation research to: 1) test the feasibility and acceptability of a paper-based versus an electronic WHO Safe Childbirth Checklist (SCC) in selected medical college hospitals in Bangladesh; 2) explore and compare adherence of the health-care staff to certain evidence based techniques between the paper-based and electronic WHO SCC programmes; 3) measure and compare the cost of implementation of the electronic versus the paper-based SCC versions; and 4) explore the enabling and constraining factors for scaling up the SCC in the context of Bangladesh. It will be an 18-month mixed-method prospective follow-up study. One medical college hospital will receive the paper-based SCC and another will receive the electronic SCC.

Progress: The proposed study has just received ethics approval and will begin field implementation from June 2014.

Pondicherry, India (Pondicherry Institute)

The Pondicherry Institute of Medical Sciences is a tertiary level perinatal centre that cares for routine and high-risk obstetric cases. It is a Medical College Hospital that caters to the indigenous population many of whom are below the poverty line. Their obstetric and neonatal services are interested in enhancing the quality of perinatal care of the poor. They intend to include approximately 600 births in their research.

Research: The Institute wishes to test whether using the SCC leads to improvements in the quality of birthing services.

Progress: The research team is advancing the preparatory phase of the study. This group joined the Collaboration in October 2013.

Colombo, Sri Lanka (De Soysa Hospital for Women)

De Soysa Hospital for Women is a major tertiary care maternity hospital in Colombo, Sri Lanka, with approximately eight obstetricians, 45 medical officers, 110 nursing staff and 55 midwives. The hospital has a total of five obstetrics units, two of which comprise the University Obstetrics Unit. The unit includes one ICU and a neonatal ICU and has an average of 4000 births per year.

Research: The study focuses on assessing the level of compliance with best practices, as well as the level of acceptance by health-care personnel and the challenges to implementation. The hospital-based, prospective observational study is set in all five of De Soysa’s obstetrics wards.

Progress: The project is in the full implementation phase. The research team has introduced the Checklist, and was included as part of the mother clinical notes, after a training programme involving all health-care workers in the obstetric wards. Two months after implementation, the Checklist had been used in 824 births. A self-administered anonymous questionnaire was given to all nursing and midwifery staff involved in childbirth practices in the hospital to assess the level of knowledge about and acceptability of the Checklist. The University Obstetrics Unit will continue using the Checklist as routine procedure following completion of the hospital-based study. The research team is confident that this will further promote maternal and child health services.
Western Pacific Region

Pudong, Shanghai, China

This is a joint project between the Nursing School of the Second Military Medical University and Shanghai Pudong New Area People’s Hospital. Shanghai Pudong New Area People’s Hospital is a secondary teaching hospital in Shanghai that has 62 obstetric beds, and oversees approximately 3500 births per year. They have 13 doctors and 47 nurses on staff for obstetrics and gynecology.

Research: This research team aims to test usability and acceptability of the Checklist in a Chinese hospital and to devise an effective way to train professionals to use it. They plan to undertake semi-structured interviews, focus group discussions and run surveys over the course of 12 months to help extract relevant data.

Progress: The team has translated the Checklist into Chinese. Two focus group discussions and a training session have taken place and the Checklist was subsequently distributed in the Shanghai Pudong New Area People’s Hospital in January 2014 for implementation. Early experience shows the need to adapt some items in the Checklist and of facilitating its use among staff. The collaborative effort between the two institutions with the Nursing School bringing in the research capacity to run the project in Shanghai Pudong New Area People’s Hospital was highlighted as a key success factor in the project.

Manila, The Philippines (Medical City Hospital)

The Medical City (TMC) is a tertiary care hospital in Pasig City, Manila. In 2013, the department had 1059 normal spontaneous deliveries and 1314 caesarian sections.

Research: The aim of the research is to monitor compliance with best practices through use of the Checklist, as part of its continuous quality improvement efforts. Since the department developed a Normal Spontaneous Delivery (NSD) pathway, the team is interested in comparing the WHO Safe Childbirth Checklist with it. The Medical City’s NSD pathway is a pre-printed order sheet and documentation tool which serves as a timeline of patient care activities. Patients admitted for labour in their pre-Labour room were randomized: one group followed the NSD pathway and another followed the NSD pathway and the SCC. The primary outcome of the study is the average rate of successful delivery of essential childbirth practices as defined in the SCC by health workers at each birth event. Observed rates of in-facility maternal deaths, newborn deaths and stillbirths will be analyzed as secondary outcomes. The frequency of medication administration before and after the intervention will also be measured.

Progress: This project is in the late implementation phase. Data collection has been completed. Data collection for patients solely on the NSD pathway implemented by the department ran from August – October 2013 and data collection for patients who were under both the department’s NSD pathway and the WHO Checklist ran from November 2013 – January 2014. The team is currently analyzing the data.
Figure 2. Implementation sites

Data: Data not available
Not applicable

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Public Health Information and Geographic Information Systems (GIS)
World Health Organization

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The Better Birth Study is a multicenter randomized trial involving development and testing of a childbirth safety improvement package based on the WHO Safe Childbirth Checklist to determine its impact on facility childbirth outcomes in Uttar Pradesh. The study is focused on the impact of adoption of Essential Birth Practices through the WHO Safe Childbirth Checklist on reduction of maternal and perinatal harm. It will be rolled out in approximately 60 maternity centres for a total sample of about 170,000 births. Funded by the Bill & Melinda Gates Foundation, the trial is led by the Harvard School of Public Health (HSPH) in partnership with Population Services International (PSI) and the Governments of India and Uttar Pradesh, with WHO providing strategic guidance.

The intervention combines a process of engaging leadership, introducing the Checklist and then ongoing support through coaching at the facility and district levels. The study has completed the pilot phase during which the approach was adapted to ensure local effectiveness and rigorous measurement in the main trial, which is expected to conclude in 2017. Lessons learned from the study are anticipated to guide scale-up and policy-making in India and other high-priority countries.
The 29-item WHO Safe Childbirth Checklist Pilot Edition was developed following a rigorous methodology and was tested for usability in ten countries across Africa and Asia. It contains items addressing the major causes of maternal death, intrapartum-related stillbirths and neonatal deaths in low-income countries. The Safe Childbirth Checklist Collaboration was subsequently set up to help mitigate the well-documented gap between innovation and implementation by promoting and collating research related to implementation of the Checklist. Since its launch, 20 institutions have joined the Collaboration. The participants are from a diverse range of settings and provider institutes, covering a range of research topics.

After a year WHO is pleased to see such a diverse group of collaborators supporting development of the WHO SCC, as part of the global commitment to improving maternal and child health. The development of 20 research projects across a wide range of countries is in itself a positive outcome for this initiative. The Collaboration has strong potential to provide invaluable insights into the usability and feasibility of the Checklist, that we hope to encourage in 2014 and 2015.

WHO priorities are in effect to realize such potential by harvesting progress and learning from each participating institution, and by transforming learning into actual tools and recommendations to guide the development of effective implementation strategies by future sites, and eventually enable a successful implementation of the Checklist across the world.

Implementing a novel intervention is complex and context-specific, with a wide array of factors at play. The Collaboration offers a unique learning platform where the same intervention is used across many geographical, cultural and socioeconomic contexts; with different degrees of organizational structure and culture, but where health-care practitioners are committed to improving maternal and newborn care. Extracting common threads and directions from this diversity will be extremely powerful and helpful for future global use of the Checklist. It is imperative that WHO and the Collaboration members work together to capture and harvest the learning from these diverse experiences. Higher-level implementation research is needed in order to evaluate specific implementation of the Checklist across Collaboration members and their sites. This important goal will represent the priority for the Collaboration Secretariat in 2014 and 2015, and it will be followed by an application of the knowledge generated through the Collaboration into the development of new implementation tools and general guidance to apply successful implementation strategies.

The Safe Childbirth Checklist Collaboration has already made significant strides to improving maternal and neonatal health. It is hoped that the Checklist can become an effective life-saving tool that can be used in a wide-range of settings.

Alongside the Better Birth Program, the Collaboration will help WHO and partners to develop and promote the final version of the Checklist, an innovative tool that aims to significantly reduce maternal and neonatal mortality and morbidity around the globe. The WHO Safe Childbirth Checklist Collaboration and its partners are therefore effective change agents contributing to the success of the Safe Childbirth Checklist Programme.
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