



The Safe Delivery App

How to balance scale and sustainability
with a free, digital tool

Maternity Foundation
Forbindelsesvej 3, 2. floor
2100 Copenhagen Ø
Denmark
+45 20 10 81 66
CVR nr.: 34 64 00 92

email:

General inquiries:
mail@maternity.dk

Front page photo: Mulugeta Wolde
Illustrations: Emilie Lønborg

June 2023



Maternity Foundation



maternityfoundation



Maternity Foundation



maternityF

Introduction

Every other minute¹, a woman dies of causes related to pregnancy or childbirth. Every seventh second, a newborn suffers the same fate. Most deaths happen in low-resourced and fragile settings, but the majority can be prevented if women receive quality care from a skilled healthcare worker.

That is why Maternity Foundation works to build midwifery knowledge and skills across low- and middle-income countries around the world. The overall mission of the NGO is that it should not cost life to give life.

Maternity Foundation was founded in 2005 by the Danish obstetrician, Henriette Svarre Nielsen together with a small group of women, after working in western Ethiopia, and experiencing first-hand the devastating consequences of poor-quality maternal healthcare services. For several years, Maternity Foundation conducted training of midwives and other healthcare workers in Ethiopia, all while knowing that the need to build midwifery skills and knowledge stretched far beyond the borders of the East African country. Currently, the world is facing a shortage of 900,000 midwives² if we are to ensure quality care for all pregnant and labouring women and their babies.

In 2011, in order to strengthen the reach and impact of the organisation in ensuring safer births, Maternity Foundation, together with the Universities of Copenhagen and Southern Denmark, started to develop a free, digital tool - the Safe Delivery App. The Safe Delivery App provides instant, evidence-based and up-to-date clinical guidelines on how to handle birth and common birth complications and, once downloaded, it also

works offline, making it possible to reach even the most remote healthcare workers.

Initial studies in Ethiopia showed significant improvements in midwifery knowledge and skills among the healthcare workers utilising the Safe Delivery App, building a solid foundation on which the App could be scaled up beyond Ethiopia to other countries and regions around the world. The question now was - how to do this, and could the digital tool be built to last?

Why invest in maternal and newborn health?

Saving women and newborns from dying in childbirth is not only the right thing to do, but it is also the smart thing to do. According to Copenhagen Consensus Center³, **neonatal and maternal deaths translated to a welfare loss equivalent to \$426 billion and \$36 billion respectively in 2019 alone.** The total loss was \$462 billion. In order to reach the UN Sustainable Development Goals and meet global targets for reducing maternal deaths, it is of critical importance that we advance investments in women's health and rights, thereby making it possible to build healthier societies worldwide.



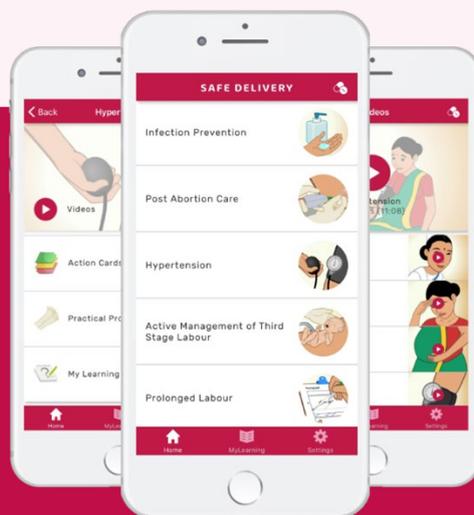
This report describes and discusses the evolution of Maternity Foundation’s Safe Delivery App and the accompanying Safe Delivery+ training and learning programme; from the trials of the App in Ethiopia in 2013/2014 to advancing to global scale and reaching 375,000 healthcare workers by the end of 2022. Lessons learned in building scale and ensuring sustainability will be highlighted along the way and main conclusions summed up at the end.

The report builds upon an analysis carried out by an external consultant, Ipsita Parida, to Maternity Foundation in 2022. The analysis is based on an adapted sustainability framework and informed by dialogues at the Maternity Foundation with key donors and thought partners.

Below, the Safe Delivery App’s content and features are explained in more details before moving to the analysis of the evolution of the App and programme.

Presenting the Safe Delivery App

The Safe Delivery App is a professional job aid and learning tool for midwives and other healthcare workers, providing instant, evidence-based, up-to-date clinical guidelines on how to handle birth and birth-related complications - straight from a phone or a tablet.



Developed in partnership with the Universities of Copenhagen and Southern Denmark, the App uses four key features: **Simple, animated instruction videos, procedures, drug lists** and an e-learning tool, **MyLearning**, to guide skilled birth attendants in basic emergency obstetric and newborn care. In the e-learning component, MyLearning, users can improve and test their knowledge and earn certification as a Safe Delivery Champion after completing expert levels in all modules.

All content in the App works **offline** once downloaded, so healthcare workers in even the most remote settings can always refer to it – on the job, in their spare time, or as part of their training.

The App is available in **English, French and Arabic versions** and has been **adapted into numerous languages and national clinical guidelines** for specific countries.

Overview of clinical modules within the Safe Delivery App

The App is now available in 20+ languages. It includes a total of 14 modules and will be further expanded in the near future.



Active Management of Third Stage Labour



Post Partum Haemorrhage



Neonatal Resuscitation



Manual Removal of Placenta

2013



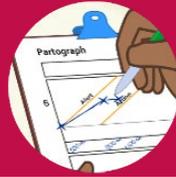
Infection Prevention



Post-Abortion Care



Hypertension



Prolonged Labour

2015-2022



Maternal Sepsis



Low Birth Weight



Normal Labour & Birth



Newborn Management



Covid-19



(Female Genital Mutilation)



Perinatal Mental Health



Modern Contraception



Antenatal Care



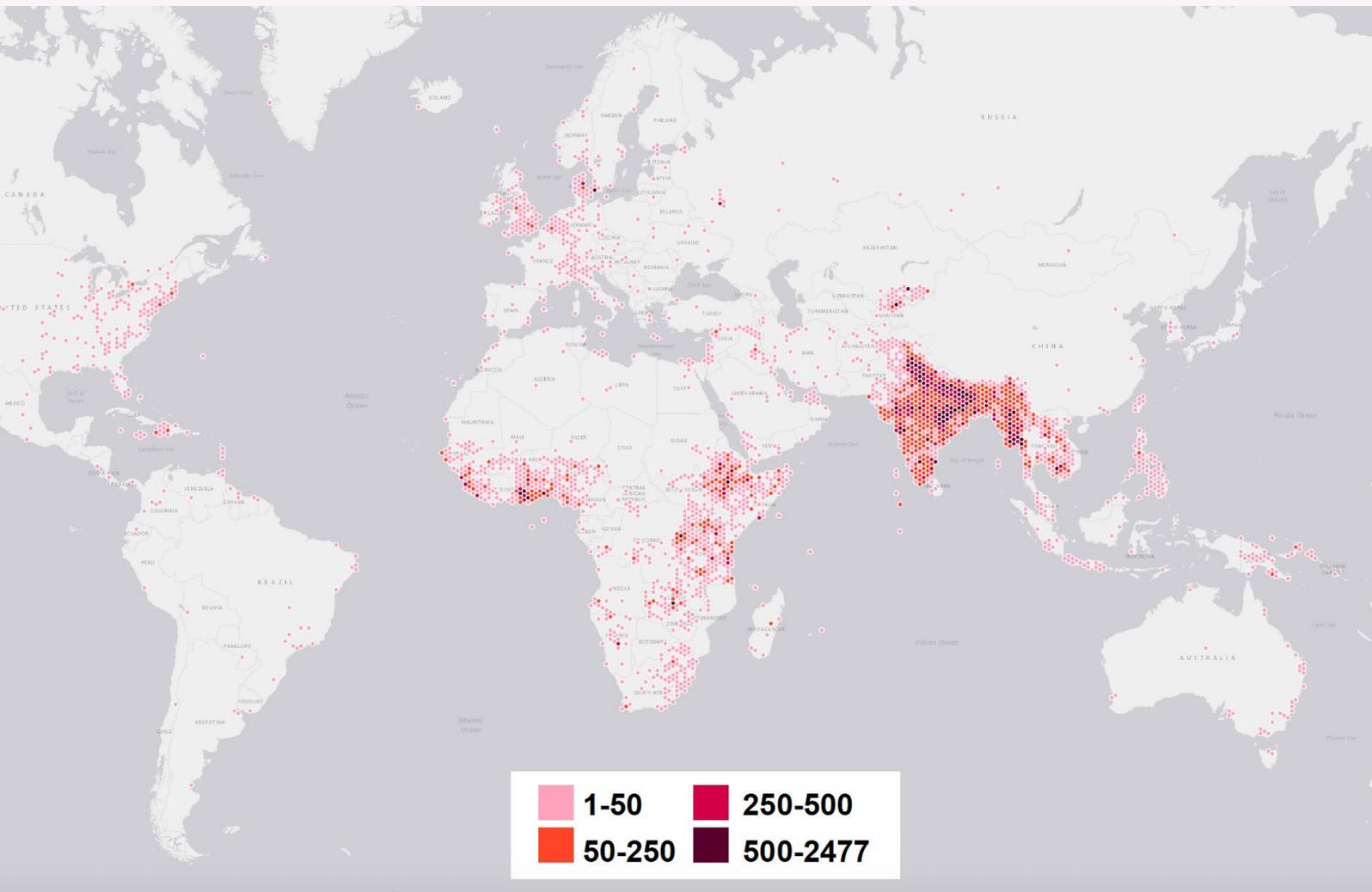
Postnatal Care

New modules

Through Maternity Foundation's larger, global Safe Delivery+ programme, which includes online learning and on-the-ground trainings, as well as the Safe Delivery App,

a total of 375,000+ healthcare workers have been reached across low- and middle-income countries worldwide to date.

Downloads of the Safe Delivery App across the world



Scaling the Safe Delivery App while ensuring sustainability - five lessons learned

Below, we discuss the journey of the Safe Delivery App and programme from its initial development to reaching 375,000+ healthcare workers worldwide. While doing so, we'll document the key learnings in attaining global scale while ensuring sustainability.

1. Always keep users at the core

It is easy to get carried away in terms of what

technology can do. However, focusing on the problem the tool is trying to solve, the unmet need, and the context where the tool is applied, is essential to ensuring sustained use.

In Maternity Foundation's experience, a user-centric approach and simple solutions make the biggest impact in poor and fragile settings.

The initial idea of the Safe Delivery App was developed by Maternity Foundation in collaboration with the Universities of Copenhagen and Southern Denmark. From the onset, it was important to ensure that the App would meet the needs in poor and fragile contexts where 95% all maternal deaths happen.

West Wollega in Ethiopia, where Maternity Foundation was already engaged in training midwives and other healthcare workers, was the starting point; an area low on resources and with limited internet access. Through various consultations with local stakeholders including frontline birth attendants, district and zonal health authorities and policy makers, it was recommended that the core messaging needed to be simple, providing only the most critical and important guidelines. Animated videos were recommended as a vital way of communicating effectively. At the same time, it was evident that the App needed to function offline due to limited internet connectivity, which remains a challenge today, not only in rural Ethiopia but in many countries and regions worldwide.

The first version of the Safe Delivery App was developed in 2013. It contained animated videos, practical procedures, and drug lists on the management of some of the most common birth complications, including Postpartum Haemorrhage, Manual Removal of Placenta, Active Management of Third Stage Labour, and Neonatal Resuscitation.

Over the years Maternity Foundation has developed a more advanced App in terms of content and features, but the core design principles and functionality remain the same

- always keep the needs of the user as the core focus.

To ensure sustained use, Maternity Foundation now combines the App with online learning and on-the-ground trainings as part of its wider Safe Delivery+ programme, to help users navigate the technology. Additionally, Maternity Foundation has developed a MyLearning module, a gamification element that enables healthcare workers to take quizzes and test their knowledge. There are 3 levels to becoming an 'expert', which will unlock an exam to become a certified 'Safe Delivery Champion'. In some countries, becoming a Safe Delivery Champion counts towards CNE (continuing nursing education) points. E.g., in India, the Indian Nursing Council award 15 CNE points/hour for completing the MyLearning module within the Safe Delivery App.

2. Document impact, use data and keep learning

A Randomised Controlled Trial (RCT) conducted in West Wollega, Ethiopia for twelve months from 2013-2014 laid the foundation for further expansion of the App, both in terms of content and reach. The research assessed the impact of the Safe Delivery App and covered 73 health facilities, 173 healthcare workers and 3,601 women giving birth. The results showed significant improvements in both skills and knowledge among the healthcare workers utilising the Safe Delivery App compared to the control group.

Based on these promising results, the Safe Delivery App was expanded and updated to include ten clinical content modules, covering all seven signal functions of Basic

Emergency Obstetric and Newborn Care and Essential Preventive Protocols. The updated version was launched in 2015 as a global English version with Sub-Saharan animated visuals.

Maternity Foundation has also incorporated continuous feedback and evaluation into their programming and collects daily user

data. With a digital tool, you can easily measure what works, what doesn't work and then make updates accordingly.

Documenting impact and collecting data insights allows you to continuously learn and improve your digital tool and this has been essential in the scaling and sustainability of the Safe Delivery App.

Documenting impact through studies

Through the years, further results have been documented from additional partner-led pilots and larger projects to understand the impact and feasibility of using the App in different implementation settings.

In recent years, Maternity Foundation has strengthened their outreach with researchers, and various publications have been produced and published⁴ around the results and impact of their work.

A range of assessments show that our SafeDelivery+ programme result in:

an average **knowledge increase** from

51% to
60%

an average **increase in skills score** from

37% to
65%

an average **increase in confidence** of

16%

3. Balance globalization with localization

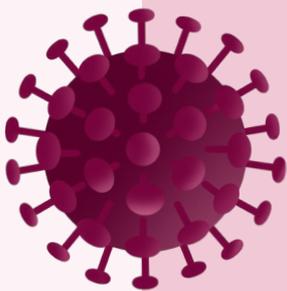
"One size does not fit all". Having a digital solution that can adapt to different country contexts and user types can go a long way towards ensuring the sustainability of the tool and embedding it within different programme delivery settings. However, there is still much to leverage from a universal package, ensuring that you should not start over when you wish to apply your tool in a different context.

In scaling up the Safe Delivery App, Maternity Foundation found that the Safe Delivery App had to meet different needs in different contexts. Therefore, Maternity Foundation adopted a modular approach and identified the core aspects of the App that could be easily standardized (such as standardized training content) while other components could be customized based on context/stakeholder needs, especially with respect

to the clinical content, language, and visuals of the App. Today, Maternity Foundation works with an 80/20 approach, meaning 80% of the App is standardized and 20% can be customized.

In Maternity Foundation's experience, this approach further helps foster the integration and institutionalization of the digital tool into existing projects and programmes at national, regional and global levels, which is key to scaling a digital tool and ensuring its continued use.

In 2015, Maternity Foundation started to work with the health authorities in different countries, to develop local versions of the App. Today, Maternity Foundation offers the App content to integrate with already existing training curriculum, (for example, it can be integrated into existing national pre-service, in-service, and/or continuing medical education refresher training programmes for midwifery students, nurses, and midwives). The App now exists in 20+ different language versions, including eight different languages in India and four different languages in Ethiopia.



Responding quickly to Covid-19

By having a standardised infrastructure that allows for individual customisation, Maternity Foundation can quickly respond to demand and/or changing environments. One example is the development of a Covid-19 content module, which rapidly reached 50,000+ healthcare workers across low- and middle income countries.



Reaching 150,000+ healthcare workers in India

The Indian government partnered with Maternity Foundation in 2017 to scale up the use of the organisation's Safe Delivery App and the accompanying training and learning programme, aiming to ensure safer childbirths for women and their newborns across India, particularly in parts of the country that were lagging behind the national average.

Today, Maternity Foundation supports several states in India, and is formally integrated into national-level initiatives focused on quality improvements, for practising healthcare workers, as well as those studying to become nurses or midwives. The Safe Delivery App is available in 8 languages in India (English, Hindi, Bengali, Gujarati, Marathi, Odia, Telugu, Assamese), and over 150,000 healthcare workers across the country have been reached to date.

4. Prioritize ecosystem over solution

A digital solution cannot stand alone. Publishing an app in Google Play or the App Store simply won't make a difference. It needs to be an integrated component of a bigger system, complementing existing programmes, structures, and tools, for it to be sustainable.

Building partnerships with health authorities and other actors was a major step for Maternity Foundation towards creating a more sustainable approach and securing country ownership. In some instances, partners and ministries of health supported the development and adaptation of a country-specific App version and co-hosted in-country launch events which brought a lot of attention to, and initial usage of, the App. Maternity Foundation soon discovered, however, that the national versions of the App along with the launch events alone were not sufficient to generate momentum and uptake beyond the initial phase, if the partner chose not to engage beyond that.

This realization forced Maternity Foundation to rethink how the development of new App versions were planned, which led to the formation of a partner-based model, ensuring that not only the App version was developed and launched but that an implementation plan was put in place to support roll-out, in-country uptake, and scaling. Working with the partner-based model, Maternity Foundation learned the importance of investing in key, global partnerships to foster engagements within and across countries and regions.

These partnerships have accelerated the enhancement of the Safe Delivery App and programme, including supporting the development of new clinical content modules, engagements in new regions and countries, improvement of the technological features of the app, etc.

Working with partners, it also became evident that the Safe Delivery App had to become interoperable with other tools. Hence, the Safe Delivery App has increasingly enabled API integration, shared data integration, and hosting other digital platform technologies or enabling its modules to be supported across different technology platforms (both with public and private partnerships). This has facilitated technology integration ensuring future technology updates in the direction of more open-source integration.

Maternity Foundation's partnership approach

Through a partner-driven model of implementation, Maternity Foundation works closely with national governments, local and international associations, as well as UN agencies and international NGOs.



5. The freemium model - building a sustainable model

Financial stability is essential for sustainability. Without financial resources, you won't come far but at the same time, it is unsustainable to rely on global grants alone. It is therefore essential to develop a business model around your digital tool and programme that includes a sustainable country-led plan.

Initially, country partners approached Maternity Foundation for funding to finance the customisation of the App to local contexts as well as the initial implementation and training support in various projects. Although this approach was feasible in expanding the reach of the App, it was not financially sustainable in the long term. Furthermore,

Maternity Foundation experienced a lack of commitment and ownership from partners when they were not financially engaged themselves.

These learnings resulted in a shift in Maternity Foundation's financing model and led to the development of their freemium business model. Within this model, the App is free for everyone to use. However, to ensure its longevity, partners invest in country-led activities.

This freemium business model is increasingly contributing to financially enabling the continued development of the Safe Delivery App and programme.

Country level financing of the Safe Delivery App



Customisation of the App's visuals, language, or clinical guidelines



Technical support to partners for integration into national curricula, training programmes, and accreditation structures



Accompanied **clinical and introductory trainings**



Monitoring, evaluation, and research services.

Key lessons learned in building scale and ensuring sustainability

Always keep users at the core

In Maternity Foundation's experience, a user-centric approach and simple solutions make the biggest impact in low resource settings.

Document impact, use data and keep learning

Documenting impact and collecting data insights allows you to continuously learn and improve your digital tool and this has been essential in the scaling and sustainability of the Safe Delivery App.

Balance globalization with localization

"One size does not fit all". Therefore, Maternity Foundation adopted a modular approach and identified the core aspects (80 %) of the App that could be easily standardized while other components (20%) could be customized based on context/stakeholder needs. This approach fosters integration and institutionalization.

Prioritize ecosystem over solution

A digital solution cannot stand alone. Working with the partner-based model, Maternity Foundation learned the importance of investing in key, global partnerships to foster engagements within and across countries and regions. Here, it is important to ensure your tool is interoperable with other tools.

The freemium model - building a sustainable business model

To better ensure financial sustainability, Maternity Foundation has developed a freemium business model. Within this model, the App is free for everyone to use. However, to ensure its longevity, partners can invest in country-led activities.

Conclusion

One of the key reasons that innovations remain sustainable is their ability to create replicable impact in a cost effective way even in under-resourced settings. Maternity Foundation, through the Safe Delivery App and programme, has demonstrated a significant impact on healthcare-worker learning and consequently their provision of quality care to women, leading to improved neonatal and maternal health outcomes.

Its evolutionary journey from its origin to its most recent and more scaled format has always embraced the principles of good design based on user needs, as well as the need to be agile and adaptable, all while benefiting as many users and contexts as possible. Maternity Foundation's constant focus on pushing for healthcare worker

engagement by designing multi-language formats, with customized content, and a focus on training to encourage healthcare worker app literacy, all while enabling flexible learning and open access through other digital platforms, is a testament to the value the organisation puts on end-user satisfaction and benefit. Simultaneously, the app and programme have focused squarely on improving institutionalization and integration with the partner ecosystem, as the best path to sustainability.

With the adopted freemium business model, Maternity Foundation is increasingly enabling the continued development of the Safe Delivery App and programme in order to meet the needs of mothers and babies around the world.



Bibliography

¹ WHO: "Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division":

who.int

² WHO: "New report sounds the alarm on global shortage of 900 000 midwives":

who.it

³ Copenhagen Consensus: "Halftime for SDGs: Maternal and Newborn Health":

copenhagenconsensus.com

⁴ Maternity Foundation: Our impact

maternity.dk

