



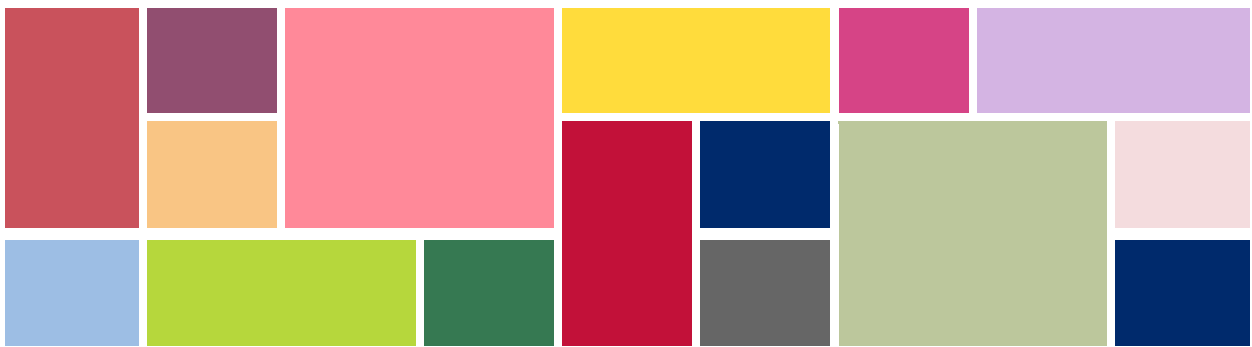
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Nigeria's Country-Led Scale-up of Chlorhexidine for Newborn Sepsis Prevention

Findings from a Mixed-Methods Case Study

March 2020



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Nigeria's Approach to Scaling Up Use of Chlorhexidine

Nigeria's neonatal mortality rate was estimated at 38 per 1,000 live births in 2013, one of the highest in the world.¹ About one-fourth of these deaths were estimated to be due to infections, many of which could be prevented through proper umbilical cord care.² Chlorhexidine (CHX) gel is an over-the-counter product that reduces neonatal infection when applied to the umbilical cord stump after delivery and during the first week of life. CHX was first introduced in Nigeria in 2012 through the first meeting of government and nongovernmental stakeholders and the U.S. Agency for International Development's (USAID's) Targeted States High Impact (TSHIP) Project operating in the northern States of Sokoto and Bauchi. The widely disseminated success stories from these two states, including engagement of Nigerian manufacturers for local production, provided local evidence that the Government of Nigeria needed to scale up the use of CHX for umbilical cord care. Country champions for CHX use also helped to disseminate these success stories through PATH's global Chlorhexidine Working Group, which in turn helped to advocate for its countrywide scale-up.

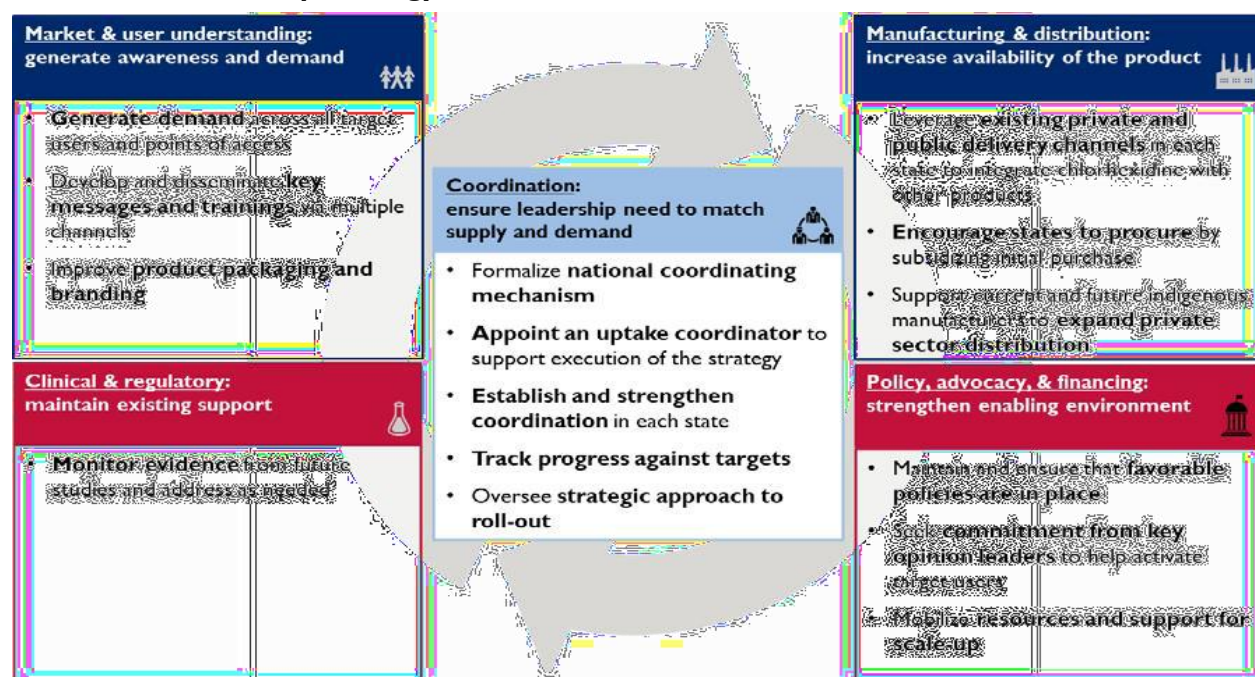
With technical assistance from USAID's Center for Innovation and Impact, Clinton Health Access Initiative (CHAI), USAID/Nigeria, and USAID's global flagship Maternal and Child Survival Program (MCSP), the Federal Ministry of Health (FMOH) developed and finalized the *National Strategy for Scale-Up of Chlorhexidine in Nigeria* in 2016. The strategy outlines interventions, guides programming, and sets a concrete **target of 52% coverage of CHX for all births (facility and community) after the fifth year of scale-up (2021)**, estimated to avert 55,000 neonatal deaths over 5 years. The strategy specifies the use and distribution of 4% CHX gel in 25-gram tubes for daily application to the stump, starting on the first day of life, regardless of the location of delivery. Within Nigeria's decentralized health system, operationalizing this national plan required further action by each of Nigeria's 36 state-level Ministries of Health (MoHs) and Primary Health Care Development Agencies (SPHCDA), which run public health programs at the public primary and secondary health care facility network as well as oversee private health care providers in the states. In cooperation with the FMOH, MCSP, a five-year global program, supported the Ebonyi and Kogi state governments to provide a systematic approach to CHX scale-up from 2014 to 2018, following the National Strategy, while UNICEF continued to support 10 other states.

The *National Strategy* identifies ways to leverage existing systems, processes, and markets to ensure gains in coverage are sustained over time. It identifies organizations, individuals, and stakeholder groups to facilitate coordination of scale-up efforts across the multi-stakeholder environment to implement specific aspects of the *National Strategy* (Figure 1). The *National Strategy* proposes scale-up indicators at national and state levels, includes cost projections to guide resource mobilization, proposes use of CHX in both facility and home settings, and envisions its distribution through three channels—public facilities, private facilities, and community level.

¹ Akinyemi JO, Bamgboye EA, Ayeni O. 2015. Trends in neonatal mortality in Nigeria and effects of bio-demographic and maternal characteristics. *BMC Pediatrics* 15:36. doi: 10.1186/s12887-015-0349-0

² United Nations Children's Fund. 2017. Child mortality estimates: causes of deaths of newborns in Nigeria, 2016. Estimates generated by the World Health Organization and Maternal and Child Epidemiology Estimation Group (MCEE).

Figure 1. Five strategic priority areas for scale-up in Nigeria Federal Ministry of Health's chlorhexidine scale-up strategy³

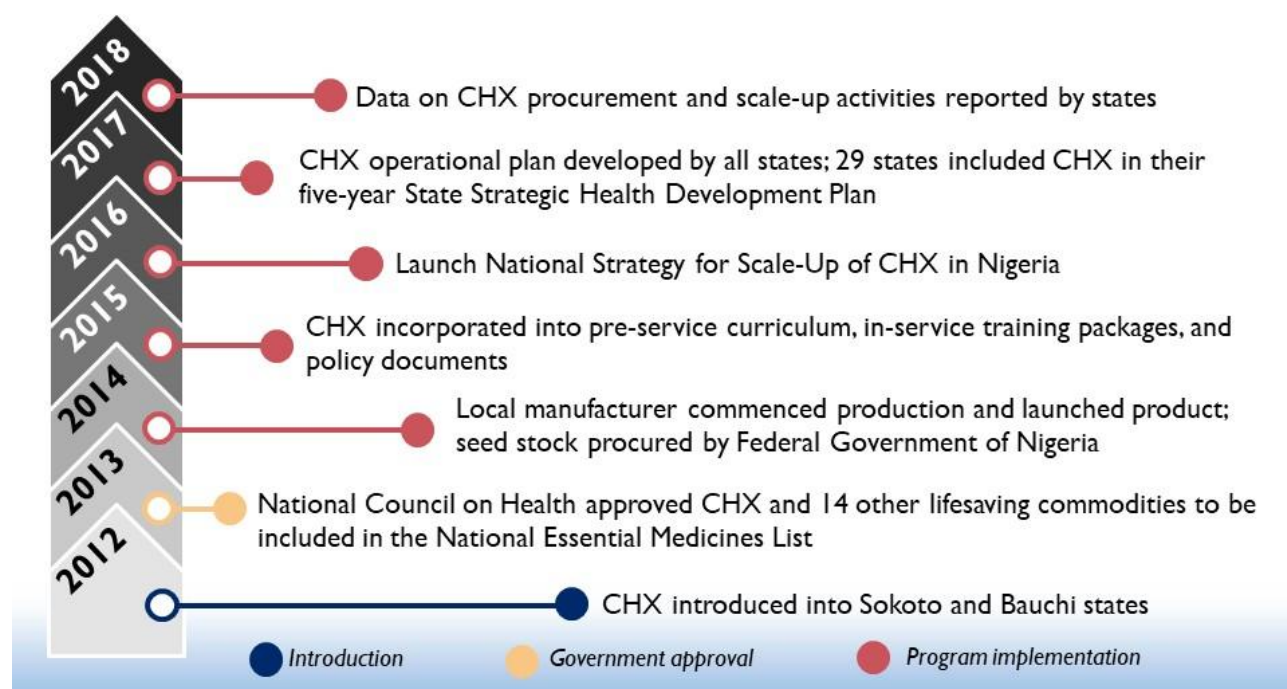


To help implement the strategy, the FMOH partnered with MCSP to secure a full-time scale-up coordinator and foster key partnerships. The FMOH's Family Health Department engaged other departments and agencies, states, implementing partners, donors, professional health associations, manufacturers, and other stakeholder groups on multiple occasions through a series of consultative meetings to build capacity for implementation of the *National Strategy*. By 2017, CHX was incorporated into the national training curriculum of the Essential Newborn Care Course (ENCC) and appended to the national essential medicines list (EML). The FMOH led participation at annual conferences of major professional associations and provided technical assistance to build sustainable financing and distribution through the various channels, including regular engagement with local manufacturers. FMOH created a WhatsApp group in early 2018 as a platform to engage the state reproductive health and maternal child health coordinators for experience sharing among the states, and frequent communication on implementation progress. Within 3 months, more than 780 messages and links were shared, 224 of which were photos. Many of these show engagement of stakeholders at subnational levels with the *National Strategy* (government officials, implementing partners, and key influencers) as well as community members using CHX.

To accelerate the rollout of CHX use, many states incorporated CHX activities into their strategic health development plans and used government funds as well as funds from Saving One Million Lives (SOML) to procure and distribute the product to health facilities, while other states have undertaken advocacy efforts, notably to UNICEF, which supplied CHX to its project states.⁴ Figure 2 shows a timeline of key events.

³ Federal Ministry of Health (FMOH). 2016. From National Strategy for Scale-up of Chlorhexidine in Nigeria. <https://www.healthynewbornnetwork.org/hnn-content/uploads/NATIONAL-STRATEGY-FOR-SCALE-UP-OF-CHX-IN-NIGERIA-FINAL-002.pdf>

Figure 2. Timeline of key actions



In addition, states have launched advocacy efforts to build champions among gatekeepers and influential figures such as hospital administrators, politicians, and community volunteers. Many states have also undertaken efforts to sensitize end users—including providers, traditional birth attendants, and families—on the importance of proper umbilical cord care using CHX gel. They did this through fora such as trainings on ENCC, family planning, and lifesaving skills, as well promoting it during celebrations such as World Breastfeeding Week, immunization days, and World Prematurity and Pneumonia Days. Since the launch of the *National Strategy*, the FMoH, state departments of health, and private sector identified and implemented plans based on the approaches summarized in Table 1 to overcome known barriers to scale-up.

Table 1. Prioritized approaches to overcome barriers to scale-up of chlorhexidine⁴

Scale-up priority area (from Figure 1)	Barriers	Approaches to overcome scale-up barriers
Market and user understanding	- Low awareness - Competitive alternatives - Socio-cultural practices - Delayed cord separation	- Increase awareness among likely points of sale (for example, drug dispensers, public and private health facilities) of the relative advantage of CHX over alternative methods - Increase awareness among family members of newborns and community structures of the relative advantage of CHX over harmful cord practices
Clinical and regulatory	Weak regulatory regime	Monitor safe manufacturing and use of CHX through routine pharmacovigilance systems
Coordination	- Weak coordination at state level - Weak reporting as a result of CHX not being captured in routine	- Coordinate stakeholder efforts to implement the <i>National Strategy</i> and state-level strategies - Use of labor and delivery registers in labor wards to capture CHX use in the facility while awaiting integration of a CHX indicator into the NHMIS

⁴ FMoH. 2016. From National Strategy for Scale-up of Chlorhexidine in Nigeria. <https://www.healthynewbornnetwork.org/hnn-content/uploads/NATIONAL-STRATEGY-FOR-SCALE-UP-OF-CHX-IN-NIGERIA-FINAL-002.pdf>

Scale-up priority area (from Figure I)	Barriers	Approaches to overcome scale-up barriers
	national health management information system (NHMIS) data	
Manufacturing and distribution	Weak logistics system for maternal, newborn, and child health commodities	- Improve logistics management for maternal, newborn, and child commodities - Support local manufacturers to attain global good manufacturing practice
Policy, advocacy, and financing	Inadequate funding streams at all levels	Improve long-term sustainability of financing for CHX gel

All states have now developed action plans for inclusion of CHX, usually as part of their strategic health and development plans. Major purchasers, including state governments, development partners, and hospitals, are procuring larger volumes of CHX. In Ebonyi State, in the month following a two-day multi-stakeholder engagement organized by MCSP, 1,200 units of CHX were procured. Local manufacturers reported distributing 532,008 units of CHX to state governments and local distributors within Nigeria in 2015; 1,536,532 in 2016; and 688,395 in 2017. The high quantity distributed in 2016 was due to a partnership with the Society for Family Health through which 600,000 tubes were procured as “seed stock” to stimulate distribution through the private sector. The majority of states (19 out of 37) relied on state government or the World Bank Saving One Million Lives (SOML) program as the primary procurement financing source. Local manufacturers (Drugfield Pharmaceuticals, Emzor Pharmaceuticals, Jawa Industries, and Tuyil Pharmaceuticals) report a combined capacity to produce 30 million units per year and have exported 130,000 units to Zambia, Mali, Republic of Benin, Mozambique, Ghana, and Niger Republic. In 2019, the FMOH also integrated CHX indicators into routine reporting systems.

Framework and Methods for Studying Scale-up Outcomes and Processes

MCSP worked with the FMOH to conduct a summative case study to analyze the actions, events, and milestones of various stakeholders in the CHX scale-up effort at the state and national levels. The evaluative framework for this case study adapts key elements of the ExpandNet/World Health Organization (WHO) conceptual framework for implementing a scale-up strategy, and the consolidated framework for implementation research (CFIR)⁵ as an evaluative framework for that experience. Figure 5 shows the conceptual framework for the systematic scale-up process in its advanced stages of expansion and full scale-up. The study team looked at the enablers and barriers related to five domains of the CFIR (intervention characteristics, outer setting, inner setting, individuals, and processes), and progress toward achieving high effective coverage (i.e., service expansion) and its institutionalization for sustainability.

- The left side of Figure 5 shows factors related to **intervention characteristics** and pre-conditions that should be in place from earlier piloting stages. These are the elements of scale readiness that affect the intervention's scalability in that context.
- Working from the center of Figure 5 outward, there is the **outer setting** (i.e., “environment”) or those conditions outside the implementers' control. In the next circle are the **inner setting** (i.e., leaders and managers) and **individuals** (i.e., providers and clients). These are the people who interact individually and in their organizational setting to supply and consume the intervention package. Finally, the outermost circle shows the components of an iterative cycle of adaptive management that those engaged in the scale-up process engage in: engagement of relevant partners, planning, implementation, reflection and learning, and ongoing financing. These strategies are employed by the government and other stakeholders to support effective scale-up of the intervention and are similar to ExpandNet's “strategic choices.”
- On the right of Figure 5 is the desired impact, that is, widespread and sustained improvements in health. To achieve this, the needed outcomes are both service expansion (i.e., high effective coverage of the population in need) and institutionalization of the intervention and its supports in routine systems. ExpandNet calls these vertical and horizontal scale-up.

⁵ <http://www.cfirguide.org/constructs.html>

Figure 3. General framework for driving the “advanced stages” of scale-up



Source: Authors' adaption of the ExpandNet/WHO conceptual framework for implementing a scaling up strategy and the consolidated framework for implementation research

The majority of births in Nigeria occur in the home (59.0% according to Nigeria Demographic and Health Surveys [DHS] 2018), followed by births in public facilities (26.4%), and finally private facilities (13.0%), but there is significant variability by state. Although the National Strategy deals in a general way with the strategies needed for women delivering in each location, this variability by state has necessitated tailoring strategies to focus on the distribution channels for CHX that target women using the most common birth location. To capture the diverse experiences of state-led scale-up processes, key informants were chosen from three states that could illustrate insights about this range of scale-up strategies, tailored to the various situations that correspond to the three distribution channels included in the national plan (see Table 2). These states also span various geopolitical zones of Nigeria:

- Kogi, with MCSP support, has pursued a strategy focused on public facilities, where 51% of its births occur.
- Ogun has pursued a strategy focused on private facilities, where 55% of its births occur. This was private sector driven from onset, and then financed by the state government through the Araya Community Based Health Insurance Scheme.
- Sokoto, with previous support from the USAID-funded Targeted States High Impact Project (TSHIP) project and current UNICEF support, has pursued a strategy focused on distribution in the community, where 88% of births occur in the home.

Table 2. States selected for in-depth study

State	Geopolitical zone	Location of birth*	Nature of partner support for chlorhexidine (CHX)-related activities
Kogi	North-central	Public facility 51% Private facility 25% Home/other 24%	2015–present: Focused on public sector facilities and scale-up management
Ogun	South-west	Public facility 23% Private facility 55% Home/other 22%	2015: Pooled procurement of CHX for private facilities in a social franchising model
Sokoto	North-west	Public facility 12% Private facility <1% Home/other 88%	2012–2015: Focused on community-based distribution of CHX, co-packaged with misoprostol

*Source: National Bureau of Statistics (NBS) and UNICEF. 2018. Multiple Indicator Cluster Survey 2016-17, Survey Findings Report. Abuja, Nigeria: NBS and UNICEF.

This mixed methods case study started with a desk review of FMoH strategies, plans, and policies as well as information on coverage (Multiple Indicator Cluster Survey [MICS], Nigeria DHS 2018, and service statistics from DHIS2). The team then collected complementary qualitative information from key informant interviews as well as completing structured tools (described in detail elsewhere) to assess the strategies used by the FMoH, state governments, and their partners to progress along a scale-up pathway.⁶ The study accounted for previous studies in Nigeria related to CHX and was designed to complement, not duplicate, these studies. This report pulls together that information plus the primarily collected information from the study team.

The study team consisted of an experienced qualitative researcher from Nigeria, two individuals from MCSP Nigeria, and one from MCSP headquarters (HQ) familiar with the history of implementation. The team also consulted frequently with key informants at the FMoH as they did their desk review for key information, developed the interview guides, and began to code the interviews. The team did the following:

- For a description and quantification of the inputs and outcome (coverage) shown in Figure 5, reviewed key project and policy documents, the 2016/2107 MICS, and the 2018 Nigeria DHS.
- Used the Management Systems International Scalability Checklist⁷ to help identify the key areas of focus concerning scalability and the scale-up environment, to help narrow the focus of the interviews.
- Used the CFIR⁸ to develop semi-structured interview guides for key informants to query them about the processes and players in the middle section of Figure 5 (implementers, leaders, and the processes they executed).
- After the interviews, used the MCSP institutionalization checklist to guide a structured discussion among team members and come to a consensus on the level of institutionalization in each of the health system components.

The study team purposively selected key informants. Study resources allowed the team to sample 40 key informants from multiple levels of government as well as organizations from the three states that represent civil society, private providers, professional associations, donors, and implementing partners familiar with the scale-up process. All interviews were transcribed and uploaded to Dedoose. They were coded by two members of the in-country study team and reviewed by the HQ team overseeing all scale case studies. Codes used were a combination of initial codes linked to the CFIR constructs and those that emerged from the data.

Ethical Review

The study team obtained approval on the selection of the three states from the FMoH and the National Health Research Ethics Committee. The Johns Hopkins University Institutional Review Board issued a Non-Human Subjects Research determination and the National Health Research Ethics Committee in Nigeria provided ethical approval to proceed.

Outcomes of the Scale-up Process

Progress on Service Expansion

The 2016/2017 MICS asked respondents about umbilical cord care only for those babies born outside a facility in the 2 years prior to the survey. The MICS estimated that CHX use for home births from 2014–2017 was 3.9%. This offers a baseline for the 2016–2021 national CHX scale-up plan. The overall level of coverage was likely substantially lower than this figure, as there was little to no use of CHX in either public or private facilities at that time. The 2018 Nigeria DHS also asked about CHX, and gave a national-level coverage estimate of 10.9%, which included all births, both at home and in facilities. It is also notable that there was a wide range in coverage by state, as Table 3 shows. Since the 2016–2021 national plan for CHX scale-up set a

⁶ The study team engaged in primary data collection for the scalability checklist, environmental assessment, and MCSP institutionalization checklist as well as review of information from all other tools outlined in the Scale Coordinators Guide and Toolkit (MCSP Legacy website: <https://www.mcspprogram.org/resources/>). References for sources from which these tools were adapted are in the Guide.

⁷ Cooley L, Linn J. 2014. Taking Innovations to Scale. Washington, DC: Results for Development Institute. https://www.usaid.gov/sites/default/files/documents/1865/v5web_R4D_MSI-BrookingsSynthPaper0914-3.pdf

⁸ <https://cfirguide.org/>

target of 52% by 2021, states should have reached 40% of this target (i.e., 21%) by the 2018 Nigeria DHS. The five states shown in the top tier in Table 3 exceeded this target; the 10 in the middle tier were at least halfway to the target; and the 22 states in the lower tier were less than halfway to the target. Ogun has the highest level of coverage of any state. Kogi is at 15.5% coverage, and Sokoto is at 3.4% coverage. This report will focus on the implementation issues across these three states. States with differing emphasis on all three types of distribution channels (public, private, and community) are represented in the top tier of performers that are currently exceeding the trajectory in coverage change envisaged in the National Strategy. Therefore, the variability in the level of coverage in these three states is likely not explained by the distribution channel they chose because Ebonyi (which is similar to Kogi in emphasizing public facilities) and Bauchi (which is similar to Sokoto in emphasizing the community) are also among the states that are exceeding the target coverage level set in the national plan.

Table 3. Service expansion: Use of chlorhexidine (CHX) for cord care (from 2018 Demographic and Health Survey (DHS))

	State	% of newborns with CHX applied to cord within 24 hours of birth
>100% target	Ogun	38.7%
	Oyo	33.1%
	Ekiti	28.6%
	Ebonyi	26.6%
	Bauchi	22.3%
50–100% target	Gombe	18.3%
	Abia	16.1%
	Borno	15.6%
	Kogi	15.5%
	Bayelsa	14.3%
	Lagos	13.9%
	Imo	12.8%
	Kaduna	12.3%
	Cross River	12.2%
	Osun	11.1%
<50% target	Katsina	10.1%
	Yobe	9.9%
	Kano	9.2%
	Akwa Ibom	9.0%
	Benue	7.9%
	Niger	7.1%
	Jigawa	7.0%
	Taraba	6.9%
	Nasarawa	6.5%
	Adamawa	6.5%
	Kebbi	6.2%
	Rivers	6.0%
	Plateau	3.9%
	Enugu	3.7%

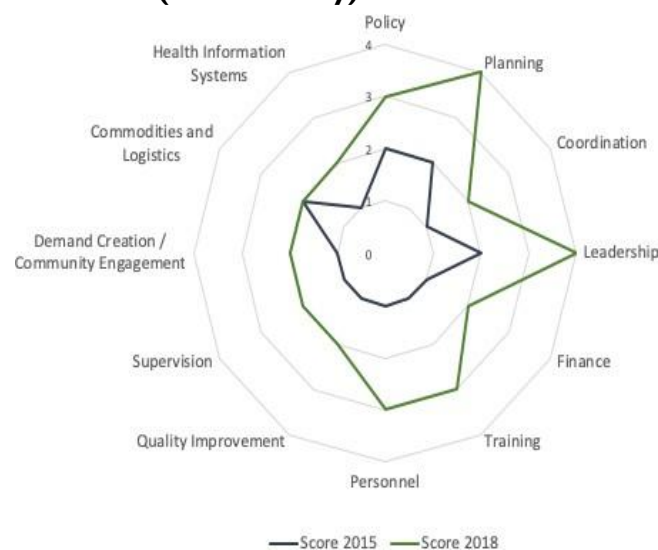
	State	% of newborns with CHX applied to cord within 24 hours of birth
	FCT-Abuja	3.6%
	Sokoto	3.4%
	Delta	2.8%
	Edo	2.4%
	Kwara	2.3%
	Ondo	1.8%
	Anambra	1.2%
	Zamfara	1.0%

Source: Nigeria DHS 2018, Table 9.15, <https://dhsprogram.com/pubs/pdf/ER359/ER359.pdf>

Progress on Institutionalization

The study team assessed the institutionalization of CHX components within the health system, scoring them retrospectively for 2015 and also for 2018. The institutionalization assessment tool used is described in the Scale Coordinator's Guide on the MCSP Legacy website.⁹ Figure 6 shows the consensus of the study team

Figure 4. Institutionalization of chlorhexidine in health systems: 2015 (before national strategy) and 2018 (time of study)



members based on the information from the key informant interviews. A score of zero represents no institutionalization and a four, complete institutionalization (i.e., integration into routine systems such as information systems, training, etc.). The planning and leadership for CHX scale-up component improved the most between 2015 and 2018. This was due to the *National Strategy* being finalized in 2016, as well as the inclusion of CHX in most states' strategic health development plans and the development of CHX action plans. Institutionalization of CHX made strong gains in personnel and policy during the period. Logistics was the only area with no improvement since 2015, which mirrors the experience across most maternal, newborn, and child health (MNCH) commodities. Progress on coordination and finance is also lagging as CHX activities still rely heavily on ad hoc funding and the support of development partners.

Enablers and Barriers to Scale-up

The team used a structured checklist¹⁰ to identify potential areas of focus for further investigation in the key informant interviews. The study team assessed the characteristics of the intervention that acted as enablers or barriers to scale up of CHX, using the constructs of the CFIR. If there was not clear evidence that a characteristic was either an enabler or a barrier, it was termed "equivocal." The main findings are described below.

See Table A.1 in the annex for a more complete list of the findings.

⁹ <https://www.mcspprogram.org/resources/>

¹⁰ Cooley L, Linn J. 2014. Taking Innovations to Scale (scalability checklist in Annex 2). Washington, DC: Results for Development Institute. https://www.usaid.gov/sites/default/files/documents/1865/v5web_R4D_MSI-BrookingsSynthPaper0914-3.pdf

Characteristics of the Intervention Affecting Scale-up

Intervention characteristic	Enabler/barrier
Source of intervention	Enabler
Complexity	Enabler
Cost	Enabler
Perception of evidence for intervention	Equivocal
Perception of relative advantage	Equivocal
Design and packaging	Equivocal

Enablers: Local Source of Intervention, Low Complexity, and Low Cost

The fact that there is a national plan to scale up CHX signed by the MoH and that there are multiple private manufacturers of CHX contribute to the perception that the source of the CHX intervention is local—that is, a Nigerian solution to the problem of newborn sepsis prevention, rather than a donor-driven solution imposed by outsiders. This helps with acceptance, especially among opinion leaders.

Key informants commented that CHX gel is more effective and more convenient to use than other traditional practices, especially methylated spirits, since it only requires a single application per day. These informants strongly believe that people are likely to accept it if they understand its purpose and advantages. They expected that health care workers and individuals will accept CHX because it is a simple product, relatively easy to use, and convenient. Multiple stakeholders across the health system and geographic locations shared these viewpoints. For example, a national partner, a partner who is a provider in Ogun State, a representative of a national professional association, and a representative of a professional association in Kogi State all mentioned that CHX is easier to use than methylated spirits because it is applied once a day. A traditional ruler in Sokoto State discussed how effective CHX is, and a manufacturer described its uptake as a “no brainer.” A partner in Sokoto said the fact that CHX is simple enough to be delivered by community health volunteers will fast track scale-up.

The cost of CHX across the country varies widely because it depends on the number of middlemen in the supply chain. Views on whether the cost of CHX will encourage or discourage scale-up were mixed, but most respondents, representing a range of professions and geographical locations, characterized CHX as affordable or that users would be willing to pay for it (one national government official, three partner respondents, one donor respondent, two manufacturer respondents, two professional association respondents in Kogi State, one professional association respondent in Sokoto State, one state government official in Sokoto, and one state government official in Ogun).

[CHX] is one of the cheapest things among the things they buy. How much are pampers? Pampers are around 500 Naira, and they buy pampers almost weekly. Why will they not buy one chlorhexidine tube and it will last them that particular child?
—Professional Association respondent, Sokoto

A minority of the respondents (5 of 40), however, characterized CHX as too expensive for families to buy, especially compared with methylated spirits. A partner in Abuja summed up these sentiments:

If it is more expensive than the local alternative, I think the poorer family will naturally object, not because they have anything against the product, but because they can't afford it. —Partner respondent, Abuja

Mixed Effects: Evidence for the Intervention, Design Quality and Packaging, Relative Advantage

Informants told the study team that many providers are still not aware of CHX and even when they are, the product is often not available at the facility, and, for home births, there is even less awareness. Mothers and delivery attendants have no knowledge of CHX, and no one has sold it to them. As awareness about CHX

increases, the challenge will be encouraging grandmothers, who often care for newborns during their first week of life, to change their traditional child care habits.

Some felt that an additional difficulty is related to the packaging. On the positive side, CHX can easily be integrated into routine interventions and platforms such as delivery lists, delivery packs, and existing projects and training programs. But on the other side, some providers may resist recommending CHX to patients because they heard about a widely reported story in 2015 of a previous imported formulation of CHX that came in eye dropper-sized bottles. A mother mistook it for eye drops and placed it in the eyes of her newborn, causing blindness. All domestic manufacturers now use a gel formulation of CHX to avoid another mistake like this. In addition, the instructions in the package have been improved for low-literacy child caretakers to clearly show that the gel should only be applied to the umbilical cord. Still, this story has persisted.

Although those interviewed were clearly convinced of the relative advantage of CHX over methylated spirits, many felt that this message has not been universally received or accepted. Key informants from among MCSP staff believe that most of the resistance to using CHX is due to clients and, to some extent, providers being uninformed about how effective and easy to use it is. One aspect of CHX use that concerns many potential users is that it is accurately perceived to delay separation of the umbilical stump. Many parents are motivated to get the stump to separate as quickly as possible, so traditional ceremonies can take place.

Characteristics of Clients and Providers Affecting Scale-up

Client/provider characteristic	Enabler/barrier
Knowledge and beliefs	Equivocal
Self-efficacy (of providers)	Barrier

Much is already known about client beliefs from formative research done through previous efforts. The main findings follow, and Table A.2 in the annex has a more complete list of the findings.

Barriers: Lack of Awareness, Cultural Practices, and Inertia

Currently the most important barrier to use of CHX appears to be lack of awareness. Providers are not aware of CHX or the product is not available at the facility, and, for home births, mothers, grandmothers, and delivery attendants are not aware of CHX and no one has sold it to them.

Traditional cultural practices include putting something on the umbilical cord (either methylated spirits or toothpaste)—not for antiseptic, but rather to hasten cord separation in time for the naming ceremony, which usually occurs on the eighth day after birth. The stump falling off is a religious and cultural priority.

Grandmothers, who tend to care for newborns, are unlikely to learn about CHX from the provider after delivery, and less likely to change their habits. They generally want to use the cord care method they used for their own babies. In addition, some providers may not feel comfortable adopting CHX because there is a cultural norm among providers in public facilities that they need to receive direct training on new health practices before adopting them.

Caregivers often believe that CHX will help the umbilical stump fall off quickly and primarily use it for this purpose. Stakeholders have attempted to educate clients that CHX has benefits beyond timing of stump separation, but misinformation is still widespread. Anecdotal evidence shared by key informants suggests that the clash between cultural beliefs and the reality of the benefits of CHX has hindered increased uptake.

There will be religious bias towards it. Even when you make them adopt it and you do not pass that communication very well, our culture requires the cord to fall off before the 7th or 8th day of the naming ceremony and it is the major thing women are trying to achieve with the use of a product...our Medical Rep told me that they had to return the carton they bought from [the main store] because the mothers were complaining that it is not helping the cord stump to fall off quickly.

—Partner respondent, Abuja

Although there is some evidence that CHX delays cord separation by a few days on average, communication campaigns about CHX take advantage of this cultural norm of placing something on the cord. A traditional ruler from Sokoto State shared a view that was not technically correct, but demonstrates the cultural importance of umbilical stump separation. This respondent suggested that people were motivated to use CHX because they believed it allowed the umbilical stump to separate sooner: “this chlorhexidine, if you apply it in the cord, maximum of 2 days the cord will drop and the other one will be removed, but if it is traditional harmful one it will take up to a week not healing.” Many respondents felt that the widespread cultural practice could be a positive factor for CHX scale-up because CHX is being substituted for another substance. As one donor summed up:

When you visit the field it looks like Chlorhexidine gel is one intervention that is actually accepted. I think the fact that we have a lot of cultures where people must apply something, even the literate ones have to come out of that culture in which people have to apply something on it, you are giving them better alternative and they can see that it is having an impact.
—Donor respondent, Abuja

Characteristics of Implementers (Inner Setting) Affecting Scale-up

Implementer characteristic	Enabler/barrier
Readiness for implementation	Variable by implementer
Structural characteristics	Organizational complexity of public system is a barrier
Implementation climate	Barrier

Key informants identified several characteristics of implementers of CHX-related activities that made CHX scale-up easier or more difficult to scale up. Table A.3 in the annex summarizes these findings. One complication in terms of the analysis is the fact that the consortium for CHX scale is a loose public-private partnership with private manufacturers and public and private distributors, so there is a complex organizational environment with several different implementers—private manufacturers as well as the health facilities and providers in the public or private sector.

Readiness for Implementation

One national partner discussed the fact that manufacturers have a large distribution network for commodities, targeted at private sector facilities and drug shops. However, key informants identified several shortcomings in terms of readiness for widespread distribution of CHX to public facilities, particularly primary health care facilities.

Private drug manufacturers entered the market under the assumption that they would not have to invest a lot of resources in demand-generation because demand would grow naturally after the national government added it to the national EML and several donors signaled that they would buy CHX. Respondents from among the manufacturers said that they have very low profit margins for CHX, thus were resistant to investing in demand-generation activities, but after demand got off to a slow start they have begun investing resources. Due to inefficiencies in the supply chain, units of CHX might go through several middlemen before getting to the final outlet, so the price to consumers is much higher and totally variable by outlet type and geographic location. The government and consumers then blame the manufacturers for setting high prices. In addition, some public sector providers do not accept a market-based system that requires manufacturers to make some profit on each unit to stay solvent. Some people have called for price setting or argue that manufacturers should provide CHX for no profit because they should save newborns in their home country. Manufacturers also seem to understand that this viewpoint exists and have said that they are concerned about marketing the drug for fear that people will think they are being greedy or deceiving.

On the other hand, there is also variability in service readiness on the part of the service providers. The focus on who these providers are is different in each state, based on the distribution channel emphasized. In Sokoto, supply of CHX itself remains an issue. A state government respondent stated that demand for CHX was created during the TSHIP program, but irregular supply of CHX means that those who would use it cannot get it (see

the subsection on supply chain issues). A Sokoto-based respondent from a professional association also brought up the topic of availability when asked how to assure sustainability of gains in CHX coverage:

On the government's part, they should try and equip the facilities with the necessary things that will enable the health providers do their work, because there is no point you are trained, the facility is there; but you become handicap when you don't have tools to work with, it is another big issue. —Professional association respondent, Sokoto

In Kogi, a recent influx in funding for primary health care facilities appears to be enabling CHX scale-up. A Kogi state government respondent noted that recent investments in the health system targeted at primary care facilities have enabled the health system to function better; however, this respondent and a second from Kogi state government also observed that primary health care facilities within Kogi State are currently managed by the State Ministry of Local Government and not by the State MoH, a potential barrier in some but not all states. The Ministry of Local Government struggles to pay salaries, and therefore does not prioritize important inputs to primary care, such as essential medicines.

Because the PHCs are not under one roof they are left to the mercy of the Local Government Authority, the same local government that is finding it difficult to pay salaries. They are paying percentages, so they can't even talk of procuring chlorhexidine gel. —Kogi state government official

In parallel with training of health workers, CHX needs to be available at the last mile. One partner cautioned against training health workers before availability needs are met:

You know when you go to the sick bed of a mother and say you need to access this service, you need to state where. When you tell a woman chlorhexidine is good, [etc.]..., you need to say where it can be gotten from and this has to be a place that is within 5km radius. You need to get it down to door level so that this growing demand can be satisfied. —Partner respondent, Abuja

Barriers: Structural Characteristics and Implementation Climate

A national government respondent identified that high attrition of health workers may affect CHX scale-up. The example provided was related to state officials; however, this problem is seen among government health workers as well.

Because there is high attrition in the states, the person who is DPRS in the next couple of 2 months or so may not be there again. You people are not paying salaries. What are you expecting from workers? —National government respondent, Abuja

In Kogi State, public worker salaries across the health sector were delayed or not paid for an extended time in 2017 and 2018. This situation weakened the health system, and was a major discussion point of respondents from Kogi State. A state government respondent in Kogi State identified a dysfunctional health care delivery system as a potential barrier to scaling up CHX within a facility:

When the facilities are closed like they are now—I was in the facility where I worked yesterday and the facility was closed—when the pregnant women come to seek antenatal care they do not get them. People have to give birth at home or go private clinics, they are probably where this sensitization or scale-up has not reached so the traditional method come into play. So I believe that we are not [at the community] but with what we have on ground now we need to do a lot of things to build the system. It is not just the moral, the system itself needs strengthening, the hospital system both primary and secondary facilities many of them are in deplorable state. You need to bring them up. —Kogi state government respondent

In addition, uneven distribution of the health workforce is another major concern for scale-up of CHX. A Sokoto state official noted that 70% of the health workers are based in Sokoto local government authority, while only 30% are in the remaining 20 local government authorities in the state.

In some cases, quality improvement or assurance efforts have driven implementation. A professional association respondent in Sokoto State discussed how an organizational culture of supervision within facilities will help CHX be implemented. And an implementer/provider in Ogun State described how they assure adherence to standards of care by newly franchised private providers through trainings and supportive supervision.

Characteristics of the Environment (Outer Setting) Affecting Scale-up

Environment (outer setting) characteristic	Enabler/barrier
Policy and incentives	Enabler
Networking with other agencies (“cosmopolitanism”)	Complex public-private partnership
Other: procurement difficulties, short-term programming	Barrier

Here we examine the main findings on the extent to which the external environment is either enabling or not. Table A.4 in the annex has more detail on the findings from key informant interviews.

A Constellation of Enabling Policies

USAID supported a series of engagements for stakeholders at national and subnational levels, and this led to the development of the *National Strategy*. There was consensus across a wide variety of respondents that the *National Strategy for Scale-Up of Chlorhexidine in Nigeria*, launched by the FMOH in 2016, greatly enhanced the enabling environment for scale-up of CHX. Respondents from an implementing partner, a professional association, and an Ogun state government official cited the *National Strategy* as important for enabling local action. The national plan built on a market segmentation analysis done by CHAI and helped systemize thinking about three main channels for distribution (public facilities, private facilities, and community level) that encouraged a whole market approach. This encouraged states to tailor their responses to their system strengths and to focus on the channel most appropriate for the predominant location of births. Furthermore, USAID also encouraged the engagement of the CHX uptake coordinator, who was financed through MCSP and seconded to the FMOH. Over the last several years, she helped identify key areas for action to accelerate the scale-up process, such as inclusion of CHX on state EMLs, inclusion of an indicator for initial application of CHX in the health management information system (HMIS), and inclusion of the questions on umbilical cord care in the 2018 Nigeria DHS to include use of CHX.

There was broad consensus among respondents of all types that the inclusion of CHX on the EML at both federal and state levels has also been critical.¹¹ When asked about policies surrounding CHX, many respondents mentioned the EML. When asked about key actions that can be taken to increase CHX coverage, several people mentioned including it in the state EML to enable procurement at the state level and/or to enable registered retailers to stock it. One Kogi state government respondent, however, reminded the team that this is necessary but not sufficient action: “[CHX] is in there in the state essential medicine list ... but being in the state essential medicine list does not translate to government procurement.”

Three respondents from FMOH agencies discussed how various national government policies kick-started local CHX manufacturing. For instance, a Nigerian regulatory body stopped issuing waivers for importing CHX from other countries. The Government of Nigeria (GoN) created a separate, expedited process for registering essential commodities such as CHX; abolished import duties for active pharmaceutical ingredients (raw materials); created a manufacturing guide for CHX; and designated CHX as an over-the-counter drug to improve availability in the private market.

An FMOH respondent discussed how a partner was able to provide manufacturers with the formulation of CHX when it was not initially available. These policies and actions proved successful in encouraging manufacturers to enter the CHX market. In 2014, one manufacturer was producing CHX. As of 2018, five manufacturers can produce CHX.¹²

¹¹ The EML streamlines various medicines that are deployed in the health care delivery system. It identifies the drugs that should be stocked at each level of the health care system. It guides the procurement of drugs and their use in the public sector, provides drug information to health care providers, and guides reimbursement for drugs under the National Health Insurance Scheme (NHIS).

¹² Despite the new entrants into the market, all three of the manufacturers interviewed were not concerned about increased competition because the potential market for CHX is so large. One manufacturer mentioned that building a production line for CHX gel was a worthwhile investment for the company because now they can use the production line to produce other gel formulations.

A Complex Political Environment Affects CHX Scale-up

The political environment at the state level is complex and dynamic, with considerable autonomy from the national level, which can create difficulties in scaling up a new health intervention such as CHX. State government respondents from all three states discussed how administration changes can disrupt a scale-up effort. For example, a state official in Ogun State mentioned that policies can change when administrations change. A state official in Sokoto discussed how paying community workers under TSHIP did not continue after a new administration came on board, despite good evidence that it was working well. A state official in Kogi was skeptical that state funds would be used for another mass procurement of CHX now that elections (national and state level) were approaching. Other respondents provided insights as to why this might be the case. One respondent discussed how politicians want to invest in things that have tangible value, and preventive health care has benefits that are less tangible and must compete with other initiatives that may have more immediate value.

It has not been sold from a political point of view. This is because health issue is not very easy to sell to the politicians because it is not tangible. ... My argument is there is limited funding in the sector, yet some sectors get funded and the reality of the public sector is the money is not enough and you have competing sectors and within a sector you have competing interest for it. Then how do you make it much more sellable from the political angle? —Implementing partner respondent, Abuja

Two state officials in Sokoto identified how MNCH interventions such as CHX are competing for attention with other health priorities. One explained that malaria has a different partner and financing landscape than MNCH and is a lower priority. A state government respondent in Sokoto explained that when TSHIP was starting in the state, it encountered challenges getting the State MoH to prioritize the program. This may be because CHX was not included in the state EML during TSHIP, which demonstrates how having a commodity on the EML can promote scaling up that commodity. A Sokoto state government official described the situation in this way, “I think chlorhexidine and misoprostol have been included into the Essential Drugs List ... nobody [will] start arguing ‘what is this,’ ‘where are you getting this;’ it has already been approved.”

Barriers: Short-Term and Fragmented Donor Agency Support

Other barriers are the temporary nature and uneven distribution of partner support, as well as the ad hoc and inconsistent nature of national coordinating bodies. Partners tend to work with a small number of states during a given project period. For example, MCSP worked with two states, and although UNICEF has presence in all states, it works with six states specifically on MNCH programs. CHAI is in a few states, etc.¹³ Most of the poorest states have a partner that supports MNCH in some way, but not necessarily CHX specifically. The nature of this support is completely different from state to state. For example, some partners only support community-based services, whereas other partners only support facility-based services. States with partners can ask them to support CHX if the state considers it a priority. In addition to partner support, all states have a large budget of funding from the World Bank SOML loan (performance for result). Newborn survival is one of the result indicators and some states have decided that using those funds for CHX will help them improve this indicator, but this is a state decision.

Processes Employed to Drive Scale-up

Scale-up process	Enabler/barrier
Planning	Enabler
Engaging	Equivocal
Financing	Depends on state
Implementation strength	Barrier
Reflecting, evaluating, learning	Barrier

¹³ Information from the *National Strategy to Scale up Chlorhexidine*

We present a summary of the findings related to the implementation strategies used to drive CHX scale-up. That is, engaging key stakeholders in the public-private partnership, going through a planning process with them at national and state level; actually implementing these plans as well as financing them (especially from sustainable and domestic sources of funding); and engaging in an active and adaptively managed process (i.e., learning mechanisms). We present the main findings here. Table A.5 in the annex has more complete information from key informants.

Planning

The *National Strategy* is fairly detailed and contains a timeline and cost analysis. However, it is still relatively high level. Although each of the states was represented in the group that developed the plan at the national level, awareness of the plan variably reached lower levels in each state. Respondents generally suggested that state-level action plans were important for scaling up CHX. As one Kogi state respondent explained, “you cannot start anything without having an action plan.” An FMOH respondent agreed that state-level planning was important and there was more work to be done to ensure that both planning and institutionalization occurred across all the states. They explained, “all the 37 states developed state plans, but only 31 have been able to integrate it in the state strategic health development plan.” Respondents also recommended that action plans for CHX scale-up be developed and costed out. One partner respondent suggested that having a costed action plan that takes an “integrated approach” will make it more likely to be implemented. Another partner respondent proposed that having a costed CHX action plan could be an advocacy tool to help with resource mobilization.

Engagement Is Difficult in a Complex Environment

Within the FMOH, Family Health has been the lead department for the CHX scale up effort and roles have been assigned to other departments based on their mandates. But many of the partner respondents expressed concern about weak coordination at the national level. One discussed how different departments and agencies were coordinating different work streams related to CHX but were not coordinating with each other. Two other partner respondents identified fragmentation and lack of formal structures for addressing issues within the FMOH organizational structure as potential barriers to scaling CHX.

The [Federal] Ministry of Health in my professional view needs to be restructured, every department is doing its own thing, activities are too siloed ... The kind of restructuring I am talking about is like they have senior management meeting every Wednesday, but this meeting is not happening. Even if it happens it is for [the FMOH department heads] to state what they are doing. So, there is need to deliberately structure the Ministry to foster coordination, and this starts by ... making sure that all departments can come together. —Partner respondent, Abuja

A professional association respondent expressed a similar viewpoint: “I don’t understand workings in the Federal Ministry of Health. There so many divisions, you don’t know who is answerable for what and what ...” A state government official from Sokoto identified how teaching hospitals, which are managed by a department within the FMOH, were not aware of the *National Strategy* and of CHX, and suggested that interdepartmental coordination be strengthened.

In Nigeria’s health system, the Core Technical Committee for MNCH is expected to undertake stewardship and coordination of MNCH initiatives. To follow this norm, the Newborn Subcommittee of the Child Health Technical Work Group would play this coordination role. However, multiple respondents described how the ad hoc nature of these committees makes it difficult for them to coordinate effectively. Because there is no devoted domestic financing stream, and no requirement in their terms of reference that meetings happen every quarter, meetings are dependent on partners calling the group together. Thus, the meetings sometimes inappropriately focus on the agenda items of priority to those partners. This dynamic has had a negative spillover effect on coordination of the CHX scale-up initiative. One partner summed it up:

When it comes to coordination, there is what they call [the] Core Technical Committee and there they have the subcommittees. I don’t feel how often these committees meet. Not only for the newborn care. It is like whenever somebody has something, they call for the committees. You are talking of coordination. There should be regular statutory meeting and there should be extra meeting when there is something but I don’t see it. It is like when a partner has something; they say we can sponsor this and then they call

for the meeting. I don't think that is how it should be done. Because we have to be following on what is happening in the state. I found out that the federal ministry is and am sorry to say this is solely dependent on partners. —Partner respondent, Abuja

Difficulties with Strength of Implementation

The various states have prioritized different distribution channels and, therefore, have distinct issues in implementing their plans. But one issue that has presented a consistent difficulty has been procurement. Nigeria relies heavily on donor funding for procuring CHX. For procurement of commodities, most donors/partners have a rigorous quality assurance process, some of which include an audit by an international body.¹⁴ Two government agency respondents and one partner respondent helped explain the procurement dilemma. The partner is expected to procure a large number of CHX tubes to include in new mother packs (potentially up to 1 million tubes/year), but it requires either WHO prequalification certification or an audit by a third party to procure CHX from a manufacturer. A third-party audit was conducted in 2015 by this partner for Zinc/oral rehydration solution (ORS), amoxicillin DT, and CHX, however manufacturers only passed the audit for Zinc/ORS. The CHX manufacturer explained that they since revised their processes and passed an audit by the United States Pharmacopeia in 2017. This means that the manufacturer currently has prequalification certification for CHX by an international body. However, this partner still cannot procure CHX from this manufacturer for unknown reasons (possibly because the partner's headquarters does not acknowledge prequalification certification by other agencies). This lack of accepted prequalification certification is a barrier because the national government banned CHX imports.¹⁵

In terms of domestic procurement, the GoN has had a history of not paying manufacturers in a timely manner for other commodities, making some manufacturers wary of doing business with the government. As one respondent explained,

The only problem my managing director has with [the government] is in the procurement. We supplied [the government] about 100 million naira [worth of commodities] since 2013 and they have refused to pay until now ... So, we are focusing on the private sector. —Manufacturer representative, Lagos

Reflecting and Evaluating: Hampered by Lack of Solid Data

There has not been a way to track CHX usage, even in public facilities, as the indicator for initial CHX application was only included in the national HMIS in 2019 after the study interviews had concluded. In the absence of a formal HMIS indicator, some states have reported moving forward with having public facilities add a column to a register, such as the labor and delivery register, to report CHX application at birth. Kogi State's scale-up management team (SUMT) is encouraging the state HMIS unit to support this effort and enable the SUMT to use the data for coordination and decision-making. A national government official shared that the government has a DHIS2 web-based reporting system that is highly interactive. Once CHX is tracked through the HMIS, people at the FMOH analyze the data. However, respondents also explained why reporting is not easy. One Sokoto State respondent highlighted issues around lack of capacity and efforts by government workers or facility managers. Another Sokoto State respondent advocated for support to improve logistics information around CHX distribution.

Sometimes people provide data because is part of their duty. They don't even look at it because they have to submit data to the DHIS...but ideally they should use it. Okay, my immunization coverage this month is low compared to last month, what is happening, why? But no director in primary health care will do that they don't do it...because our partners around they only help us to do that. —Sokoto state government official

A partner also reflected that the HMIS will only be able to measure distribution through public facilities. Private health facilities have been mandated to report to the HMIS, but there is an ongoing limitation with data collection from patent and proprietary medicine vendors and pharmacies. For tracking estimations of coverage, it would also be useful for FMOH planners to have access to manufacturers' wholesale data.

¹⁴ Note that this audit is different from WHO Good Manufacturing Practices (GMP) certification, because CHX gel is not part of the list of commodities that requires GMP certification. This distinction has caused confusion in the past related to procurement of CHX by this donor/partner.

¹⁵ This ban was likely put in place for two reasons: 1) to show that the government responded to the adverse events that occurred in 2015 after a donor imported and distributed CHX solution, and 2) to protect Nigerian manufacturers from outside competition.

Conclusions

Progress on Scale-up: Reaching Those in Need and Institutionalizing Supports for Sustainability

Nigeria is the most populous country in Africa and accounts for a large fraction of the continent's newborn deaths. A quarter of those deaths are due to infections, and scaling up CHX could go a long way toward reducing newborn deaths. The fact that Nigeria developed and began executing its national plan in 2016 was an achievement in itself and a testament to the dedicated efforts of several champions in the FMoH and development partners. Although the country is not now on track to achieve its target of reaching 52% of all newborns by 2021, it has nevertheless made substantial progress. In addition, focusing only on the aggregate national pace of coverage expansion masks the fact that there is a wide range of achievement among the states. In fact, five states are exceeding coverage targets and another 10 are reaching at least half their coverage targets. It is encouraging that some states have tailored the focus of their distribution plans to match the location of the majority of their deliveries (i.e., community, public facilities, or private facilities). The Nigeria DHS 2018 data on coverage by state shows that at least one state focusing its efforts on each of these distribution channels is in the top tier of states exceeding the coverage target set by the national plan. This is encouraging evidence that each of these distribution mechanisms is a potentially viable path to sustained impact at scale.

The progress on institutionalizing the needed supports across public health system components to reach high levels of CHX use at scale gives confidence that the gains have a good chance of being sustainable. Especially notable is the fact that there has been progress on several key fronts: putting an indicator for CHX use in national HMIS as well as the Nigeria DHS, including the product on the national EML, most state EMLs, and to a lesser extent cultivating local sources of funding. Programmatic evidence shows that these aspects of institutionalization often lag even for mature health interventions.

Enablers and Barriers Driving Scale-up

Table 4 summarizes the study findings by CFIR category.

Table 4. Summary of high-level findings from the study, organized by consolidated framework for implementation research categories

Enabler/mixed picture/barrier to effective scale-up	
Intervention characteristics	The product, intervention, and strategy is locally owned (i.e., national scale-up plan and local producers of chlorhexidine [CHX]).
	Low complexity of the clinical intervention.
	Cost is modest and within the means of most people and comparable to methylated spirits, its main competitor product for cord care.
	Perception of strength of evidence is mixed , relative to methylated spirits.
	Design and packaging: Well-designed packaging. It has simple instructions and can be included in delivery kits.
Individuals	Knowledge and beliefs: There is still a low level of awareness about CHX. It helps that most people believe that something should be put on the cord to speed its separation, but the fact that CHX slightly delays cord separation could be a problem for wider uptake.
	Providers feel they “need to be trained” even for this simple intervention, impeding its uptake.
Implementers (inner setting)	Readiness for implementation is high among private sector manufacturers; lower in public sector (especially in terms of stock management).
	Structure of the public sector is complex , with multiple divisions and levels of the hierarchy that need to be involved, making coordination difficult.
Environment (outer setting)	Policy at the national level has spurred state action; with advocacy, states have now mainly put needed policy elements in place (i.e., planning, financing, inclusion of CHX on the EML).
	Coordination within the public-private partnership has been challenging , sometimes because public sector employees suspect the motives of those in the private sector.
	Fragmented, inconsistent, and short-term donor-funded programming across states makes concerted action more difficult.
Processes to Drive scale-up	Plan at national level is good. It has acted as a template for planning at state level .
	Financing has been opportunistic at the state level (e.g., tapping into the Saving One Million Lives Program), but there has been some movement toward firmer local financing.
	Reflection and adaptive management has been impeded by a lack of information. This may be helped by recent inclusion of a CHX indicator in the HMIS. But there is still a need for a stronger review mechanisms in the public sector and inclusion of information on private sector progress.

Intervention Characteristics

The National Strategy for CHX scale-up has called attention to its importance and shown local ownership. Even though development partners have sometimes pushed for procurement from elsewhere, having local manufacturers of the product has increased the sense of local ownership. The low complexity and cost of the intervention are also enablers. However, issues remain around the use of CHX versus traditional methods. Many do not perceive CHX as superior to the widely used methylated spirits. The tangible benefit that many see for any product they place on the umbilical cord is its ability to make the cord separate faster, rather than preventing the rarer occurrence of umbilical or systemic infections. CHX is not clearly superior to spirits in this regard, so behavior change campaigns need to take this into account. Although the packaging is well designed for low-literacy consumers, a previous imported formulation had the consistency and packaging of eye drops and, in a widely publicized case, was once mistakenly put into a newborn’s eyes. This case is still in the public imagination and is likely acting as a brake in terms of accelerating uptake of the product.

Characteristics of Providers, Clients, Managers, and Leaders (Individuals and the Inner Setting)

There is a continued low level of awareness across all segments of the population (policymakers, health providers, national and local authorities, mothers, fathers, and grandmothers) concerning the benefits of CHX, including how easy it is to use. To date, informants feel there had been underutilization of professional associations to inform their members about CHX and drive the shift from methylated spirits. This lack of awareness has resulted in low demand despite its availability. This has significantly contributed to CHX's inability to displace methylated spirits as the predominant substance to use on the umbilical cord. As CHX scale-up continues, beliefs and practices related to cord separation will need to be monitored. If the current situation persists in which there is not a widespread perception that CHX delays cord separation by a few days, which is problematic for the traditional naming ceremony, then messages about CHX can continue to focus on its effectiveness for keeping the newborn healthy. But if growth in the use of CHX does not accelerate, the more difficult task of attempting to shift cultural norms around delaying the naming ceremony may be in order, because CHX does delay cord separation by one or 2 days on average. Nigerian manufacturers have the capacity and infrastructure to quickly produce enough CHX for the entire country and distribute it to states and large facilities. In some areas, access to CHX has been limited because of weak distribution mechanisms due to ineffective coordination between the public and private sectors.

Environment (Outer Setting)

Key informants identified policy-related changes as among the most influential factors promoting scale-up. The GoN provided the necessary leadership to kick-start the implementation of the *National Strategy* and led scale-up efforts related to national activities, but leadership across states has been variable. Including CHX on the EML and designating CHX as an over-the-counter drug were also important GoN activities that supported scale-up. It also helped ensure the availability of locally produced CHX by no longer issuing waivers for importing CHX, creating a manufacturing guide for CHX, and waiving import duties for active pharmaceutical ingredients. On the more problematic side, there is a still need to strengthen networking across public sector agencies, and great efforts have been made by active champions who have sometimes been supported through external programs, but the short-term and fragmented nature of donor-funded programs is also an ongoing issue.

Iterative Processes to Drive Scale

It is difficult to develop effective plans aligned with national strategies in a complex and decentralized organizational environment, but many informants felt that the CHX scale-up planning process had been done well and in a participatory way at the national level. The National Strategy, in turn, has acted as a template to guide planning at the state level. This progression from national to state level did not happen naturally or by chance, however. It took the active advocacy of some dedicated champions for CHX, both within the FMOH and from the TSHIP project among other development partners, to catalyze the development of the National Strategy and then to get states to incorporate CHX within their health and development plans and take the needed steps to ensure implementation readiness. In terms of implementing these plans, however, there have been varying levels of success. In particular, some of the basic elements needed for reflection and adaptive management have been weak. That is, there has not been a reliable stream of routine information to guide decision-making, nor in most states have the established governance platforms had the strength and scope of authority to make management decisions that would be followed by the relevant stakeholders based on data, even if they had existed. Now that an indicator for initial application of CHX is in the HMIS, there is hope of having data for public system decision-making. But this still does not cover the private distribution system or health facilities. Having the information now makes more urgent the need to strengthen the role of the state Child Health Technical Work Groups or some other equivalent body to actively manage the scaling-up process, using this newly available information for decision-making.

Overall Conclusions

CHX application to prevent newborn sepsis has some clear advantages as an intervention to be scaled up, including its simplicity and low cost. Scale-up of this intervention in Nigeria, however, it is not without substantial

difficulties. The complex organizational structure of the public health system and the weakness of the public logistics system makes scale-up challenging through the public channel. The National Strategy and supportive policies have clearly been important levers to help facilitate scale-up, not only through the public channel but also at the community level and through private facilities. But levers do not pull themselves. Some well-placed champions have used these levers as they have expended considerable and ongoing efforts to facilitate key state actions, such as placing CHX in state plans, getting it on state EMLs, procuring it, and placing it within state health and development plans, while encouraging states to take advantage of outside financing for MNCH programs. The results of the 2018 Nigeria DHS show the fruits of these planning, policy, and advocacy strategies in mitigating the organization challenges of the public health system. Aggregate national progress is substantial (10.9% national coverage in the 2018 Nigeria DHS, at year 2 of the five-year scale-up strategy). Even more encouraging is the fact that five states are exceeding targets and another 10 are within 50% of their target, as envisaged in the national scale-up strategy. There are also now several “state experiments” that show that relatively rapid progress is possible in scaling up use of CHX, by focusing appropriate energy on any one of the three distribution channels (community, public facility, and private facility) in the National Strategy. The initial scale-up target was noted as extremely ambitious and was based on the Nepal CHX scale-up curve, which is one of the most successful global health product/service scale-ups ever. Nonetheless, Nigeria is making substantial progress against this high standard. With continued effort by well-placed champions, one feels that Nigeria is poised to make even more substantial progress and possibly reach the ambitious target it set in its national plan of 52% coverage by 2021.

Recommendations

After analysis of the finding of the summative study, the study team made the following recommendations to facilitate the further scale-up of CHX.

Recommendations for National Government

The national government has provided the necessary leadership to kick-start the implementation of the National Strategy and led scale-up efforts related to national activities. In line with providing the enabling environment for scale-up, the national government should now:

- Develop a guideline for the standardization of delivery packs to be used across all levels of the health system (community and facility), including in donations.
- Ensure that all pre- and in-service curricula for all cadres of health workers are updated to include the use of CHX, with instructions on correct recording.
- Continue to provide the necessary coordination and support to states to achieve the 2021 goal of 52% utilization of CHX among all newborns. In this regard, it would be helpful to bring together states to analyze and share what has worked well in the five top-tier states (Bauchi, Ebonyi, Ekiti, Ogun, and Oyo) and discuss how these lessons can be applied to improve the performance of other states that are currently experiencing challenges.

Recommendations for State Governments

The decentralized nature of the health system signifies that the onus of nationwide scale-up resides at the state and local government authority levels. States are at different stages of scale-up and need to take several priority actions:

- Adapt/adopt/revise/update and implement policies, guidelines, and strategies such as translating the National Strategy into state actions integrated in health and development plans and annual operational plans, and including CHX in their EML.
- Ensure reliable resource flows, while also giving credibility to locally manufactured CHX through pooled central procurement, and leverage existing distribution channels used for other commodities to reach the last mile.

- Strengthen multi-sectoral/multi-departmental engagement and coordination (private/public/community) with the goal of using data for decision decision-making, taking advantage of the fact that there is now more data available through the HMIS.
- Increase demand for CHX with tailored messages with audience segmentation that emphasizes information on the benefits, potential side effects, and availability of CHX while addressing cultural beliefs about cord separation.

Recommendations for Development Partners

The role that development partners and donors have played to support the scale-up efforts has demonstrated effective partnership that can be strengthened further, especially at the state level, by taking several key actions:

- Support states as they implement or adapt policies and help them develop action plans to scale up CHX. Such plans must include not only supply side but also demand side interventions.
- Build capacity of focal persons to understand their role in line with the National Strategy to ensure documentation and reporting of scale-up efforts: health providers to properly record information, HMIS officers to analyze and present data, and the reproductive health coordinator to share reports with the FMoH.
- Support the in-service training of health workers from all units/wards that are involved with maternal and newborn care. This includes those who work in antenatal care clinics, labor wards, postnatal care wards, special care baby units, and emergency pediatrics units.

Annex I: Detailed Analysis of Consolidated Framework for Implementation Research (CFIR) Constructs from Key Informant Interviews

Table A.1. Characteristics of the chlorhexidine (CHX) intervention that influence scaling up

	Characteristics that made scaling easier (Enablers)	Characteristics that made scaling harder (Barriers)
Source of intervention	- Evidence from the Targeted States High Impact program pilot (helped spark policy development) - National policy - Local manufacturers	
Complexity	Intervention simplicity (once daily application) makes it easier than methylated spirits	
Evidence strength and quality	Key informants across geography and respondent types were convinced of the evidence	Polymakers cannot observe the benefits of CHX because it is preventive, not curative
Relative advantage	Key informants across geography and respondent types were convinced of its relative advantage over methylated spirits	- May delay cord separation compared to methylated spirits - Health workers want to see proof of effectiveness, and since sepsis is rare, proof is difficult to show - Continued concern about the story of its use in a newborn's eyes
Design quality and packaging	- Delivery packs and delivery lists exist in all public and private facilities (CHX can be added) - Easy to bundle with essential commodities (e.g., misoprostol)	- There is no standardization to the content of the delivery list or delivery pack - Product name is difficult to pronounce and remember compared to "spirit"
Cost	Although there was not complete consensus, a number of stakeholders consider CHX affordable and think caregivers* will buy it if they understand the benefits	CHX is more expensive through some outlets

*Caregivers were defined as anyone who is responsible for caring for a newborn from birth through at least when the umbilical stump separates. In Nigeria, this might be the new mother or the newborn's grandmother (usually the new father's mother, per cultural norms).

Table A.2. Characteristics of individuals that influenced scaling up chlorhexidine (CHX)

	Characteristics that made scaling easier (Enablers)	Characteristics that made scaling harder (Barriers)
Knowledge and beliefs about the intervention	Cultural practice of putting something on the umbilical cord	- Potential distributors unaware that CHX has over-the-counter status - Health workers uninformed about CHX - Caregivers' desire to use traditional methods (particularly grandmothers in first week of life) - Cultural belief among caregivers that fast stump separation is better - Some providers reluctant to use CHX because some patients put it in a newborn's eyes in 2015
Self-efficacy		Health workers think they need training in CHX

Table A.3. Inner setting: Characteristics of implementers that influence scaling up chlorhexidine (CHX)

	Characteristics that made scaling easier (Enablers)	Characteristics that made scaling harder (Barriers)
Structural characteristics		- High attrition rates of state government officials - High attrition rates of public health care workers - In some states, the public health centers are managed by the Ministry of Local Government whereas secondary facilities are managed by the State Ministry of Health, causing fragmentation, inconsistent implementation, and increased need for coordination
Networks and communications		- Communication barriers between facility wards - Uneven training of health workers contributing to communication barriers within facilities, for example, - Ob-gyn cadre not trained on CHX, but pediatricians and neonatologists trained - Senior staff at health facilities (e.g., doctors who do not attend many deliveries) more likely to receive in-service training
Organizational culture	In some places, there is an organizational culture of supervision and adherence to standards of care	Fragmentation and lack of formal reporting and coordination structures within the Federal Ministry of Health
Implementation climate		Some public worker salary payment delays, affecting motivation
Readiness for implementation	- Manufacturers' readiness to distribute to states and large facilities (via sales reps) - Manufacturers' ability to quickly produce enough CHX for the entire country - Readiness of a national partner to distribute commodities to private sector facilities and pharmacies	- Poor readiness of central medical stores to deliver commodities (in some states) - Uneven distribution of the health care workforce

Table A.4. Outer setting: Environmental characteristics that influence scaling up chlorhexidine (CHX)

	Characteristics that made scaling easier (Enablers)	Characteristics that made scaling harder (Barriers)
Patient needs and resources	Mandates/priorities of several national partners and donors align with CHX scale-up initiative	- CHX competes for prioritization with other high-priority health areas, such as malaria - Not all states have partner support for reproductive, maternal, newborn, child, and adolescent health and nutrition - Partner support is temporary - State logistics management coordination units are often bypassed by programs that procure and distribute essential commodities
Networking (“cosmopolitanism”)	Professional associations have wide outreach potential	- Norms require coordination meetings be face-to-face, and provide food, beverages, and stipends - Coordination bodies at national, state, and local levels do not have clear terms of references and tend to operate in an ad hoc manner - National Council on Health does not include state-level program managers, hampering implementation at state level
External policies and incentives	- National Strategy to scale up CHX - CHX on national and most state essential medicines lists - Policies or partner support to encourage domestic CHX manufacturing, including: - Government of Nigeria (GoN) body ceased issuing waivers for importing CHX - GoN created an expedited process for registering essential commodities - GoN waived import duties for active pharmaceutical ingredients - GoN created a manufacturing guide for CHX - GoN designated CHX as an over-the-counter drug - Partner provided domestic manufacturers formulation of CHX (it was not initially available in the public domain)	- Procurement barrier for a large donor/partner - Dynamic political environment often disrupts health sector programs - States independently determine whether to adopt national strategies - History of government purchasers not paying manufacturers in a timely manner

Table A.5. Processes to drive the scale-up effort

	Characteristics that made scaling easier (Enablers)	Characteristics that made scaling harder (Barriers)
Engaging/ coordinating	• Senior officials demonstrate ownership over chlorhexidine (CHX) scale-up • Multi-stakeholder engagement of national partners, donors, professional associations, and manufacturers • Engagement between major purchasers and manufacturers	• Ad hoc CHX coordination at the national level • Unsuccessful coordination between national government and state officials • Lack of coordination within some states • Some professional associations not engaged • Disagreement among key stakeholders as to who should coordinate CHX scale-up activities
Planning	• The <i>National Strategy</i>, in place since 2016, provides guidance on implementation strategies • Many states included CHX scale-up in their state strategic health development plans	
Financing	• Saving One Million Lives projects in some states decided to use funds to procure CHX or to improve health management information system reporting • Pooled CHX procurements in some states • Drug procurements by partners in some states	• Lack of sufficient government funding for health care overall, and particularly reproductive, maternal, newborn, child, and adolescent health and nutrition • Temporary partner support • Lack of existing mechanisms for pooled drug procurements in many states • Lack of general funding for central medical stores to distribute maternal, newborn, and child health commodities
Implementing	• CHX incorporated into Essential Newborn Care (ENC) training package • The Federal Ministry of Health promoted local manufacturing • Manufacturers conducted some demand-generation activities through sales representatives	• Lack of widespread pre-service training or in-service step-down trainings • Some types of providers do not receive ENC training package (trained birth attendants, ob-gyns, general medical practitioners, private sector providers) • Professional associations did little to disseminate information about CHX to members • Lack of public sector distribution caused widespread stock-outs of CHX in many facilities • Private community-based distributors did not stock CHX • Lack of demand-generation by government and private actors
Reflecting and evaluating	• The 2018 Nigeria Demographic and Health Surveys included a question on CHX application	• CHX indicators are not tracked through the health management information system • Lack of implementation research and use of information for active management

Annex 2: Detailed Timeline of Scale-up

In this annex we present a detailed timeline of key events surrounding introduction and scale-up of CHX in Nigeria. This timeline was prepared in a collaborative effort between Save the Children Nigeria (involved in TSHIP and partnered on MCSP), MCSP staff and the FMOH Child Health Division.

2012

- **March**
 - Nigerian president Goodluck Jonathan was made a co-chair to the United Nations Commission on Life Saving Commodities (UNCoLSC) leading to Nigeria making a commitment to the global UNCoLSC.
 - TSHIP introduced Chlorhexidine for cord care in Sokoto and Bauchi.¹
<https://www.jsi.com/JSIInternet/IntlHealth/project/display.cfm?tid=40&ctid=na&id=4041&c&id=na>
- **October**
 - TSHIP conducted a chlorhexidine preference formative study at Gagi PHC in Sokoto State to support government decision on formulation
 - Nigeria hosted a meeting of the global United Nations Commission on Lifesaving Commodities (UNCoLSC) group <https://www.vanguardngr.com/2012/10/nigeria-6-others-to-provide-life-saving-commodities-for-women-children/>
<https://www.impatientoptimists.org/Posts/2012/10/Nigeria-Takes-Huge-Step-to-Save-Womens-and-Childrens-Lives#.W8eV2WhKjIU>
- **November**
 - Sokoto State Government procured 56,823 tubes of CHX 4% from Nepal through Gongoni Nigeria.
- **December**
 - The Nigerian government conveyed a national stakeholders meeting, with support from PATH and the Saving Newborn Lives project of Save the Children International (SCI), in Abuja to introduce Chlorhexidine for cord care using lessons from the TSHIP project, a study from University of Benin as well as some studies from Bangladesh and Nepal. At the end of the meeting, stakeholders reached a consensus to change the policy on cord care.

¹ Between 2009 and 2015, the Targeted States High Impact Project (TSHIP), USAID/Nigeria's flagship project, worked to improve the quality and delivery of an integrated high impact Maternal, Newborn and Child Health (MNCH), Family Planning (FP), and Reproductive Health (RH) interventions in two States, Bauchi and Sokoto in Nigeria. TSHIP, along with other USG projects, was part of USAID/Nigeria's "Focus State Strategy" designed to achieve impact at the State level. The TSHIP design was to achieve the following four strategic sub objectives;

1. Strengthen State and local capacity to deliver and promote high-impact interventions;
2. Strengthen service delivery at Primary Health Centers (PHC) and referral levels;
3. Strengthen the roles of households and communities; and
4. Improve policies, programming and resource allocation.

TSHIP spear-headed the piloting of CHX gel use co packaged with Misoprostol to reduce both neonatal and maternal mortality, by fostering distribution for use in households and communities in the 2 northern states where home deliveries were as high as 98%. TSHIP's experience in piloting CHX, along with the University of Benin study and evidence from Nepal and Bangladesh led to Nigeria's adoption of the antiseptic for cord care. The pilot used chlorhexidine 5gm gel (imported from Nepal) for one application. TSHIP was implemented by the JSI Institute as the prime organization along with a number of partners.

2013

- **March**
 - Formal launch and flag off of chlorhexidine gel and misoprostol for community distribution in Sokoto state by Honourable Minister of Health Prof. Onyebuchi Chukwu
 - <https://healthinteractive.wordpress.com/2013/03/26/strategic-call-to-action-for-the-use-of-misoprostol-and-chlorhexidine-published-in-daily-trust-newspaper-26032013/>
- **May**
 - Invitation to Local Pharmaceutical Manufacturers to submit Expression of Interest (EOI) for the Manufacture of Chlorhexidine issued in local dailies (USAID funded United States Pharmacopeia (USP) Promoting Quality Medicines Program and PATH)
- **August**
 - Inaugural meeting of the Informal Network of Chlorhexidine 4% Gel Manufacturers in Nigeria (a Public-Private-Partnership led by FMOH but supported by USAID TSHIP to support local production, market and policy direction for CHX)
 - 56th National Council on Health in Lagos approved 15 lifesaving commodities including Chlorhexidine gel for inclusion in the National Essential Medicines List.
 - Country Implementation Plan for United Nations Commission on Life-Saving Commodities for Women and Children finalized
- **December**
 - Second informal network meeting with stakeholders
 - National stakeholders (FMOH, NPHCDA, UNFPA, Save the Children) went to Sokoto on a CHX learning visit with support from Saving Newborn Lives project of Save the Children International (funded by Bill and Melinda Gates Foundation)

2014

- **January**
 - Market Research for 7.1% Chlorhexidine Digluconate in Nigeria conducted by PATH (an implementing partner)
- **February**
 - National stakeholders went on a learning visit to Nepal with support from Saving Newborn Lives Project of Save the Children International with funding from Bill and Melinda Gates Foundation. <https://www.healthynewbornnetwork.org/blog/from-nepal-to-nigeria-lessons-in-taking-newborn-health-interventions-to-scale/>
- **March**
 - ChlorxyG-Gel (manufactured by Drugfield Pharmaceuticals) registered by National Agency for Food Administration and Control (NAFDAC)
- **April**
 - Third informal network meeting with stakeholders
- **July**
 - The United Nations provided catalytic fund to support roll-out of RMNCH life-saving commodities including chlorhexidine gel
 - Specification for Chlorhexidine articulated as 4% Chlorhexidine gel (= 7.1% -digluconate) in 25g tubes for daily use

- Provisional approval given to include 4% Chlorhexidine gel on Essential Medicines List as an over the counter medicine
- **October**
 - National Newborn Health Conference in Abuja brought together over 400 international, national and state stakeholders. This was a platform to further promote chlorhexidine gel use for cord care. There were 2 presentations on scale up of chlorhexidine in Sokoto and Bauchi by TSHIP project
 - Market research on user preference for 7.1% Chlorhexidine Digluconate was conducted by PATH.
 - Learning visits by other states and some African countries to Sokoto state took place during the course of the year.
 - **292,000** tubes seed stock of CHX was procured using fund from the SURE-P initiative of the Federal Government Nigeria, & distributed to 1000 SURE-P facilities
 - Kano, Katsina and Kaduna state governments procured chlorhexidine in a tripartite agreement.
 - USAID also procured chlorhexidine for Sokoto and Bauchi.
- **November;**
 - Newborn Health committee was inaugurated by the Minister of State for Health

2015

- Chlorhexidine Knowledge, Attitude and Practice Study was conducted in Sokoto by USAID/TSHIP
- Chlorhexidine Manufacturing Guide was developed by NAFDAC.
- Advocacy visit to all states under the Nigeria Chlorhexidine Market Support Project funded by Bill and Melinda Gates Foundation, BMGF through the Saving Newborn Lives project of Save the Children U.S.
- Chlorhexidine pilot in 7 states (supported by USAID/TSHIP, NORAD/CHAI, UNFPA/JSI)
- USAID Center for Innovation and Impact contracts Dahlberg to support the FMOH develop a *National CHX Scale-Up Strategy*; National stakeholder's consultative meetings held
- Market Assessment of Chlorhexidine gel in Nigeria by CHAI (Clinton Heath Access Initiative)
- Two additional local manufacturers commenced production of chlorhexidine gel, bring the total to 3.
- An adverse event caused a serious setback on the scale-up effort.²

2016

- **March**
 - Child Health Technical Working Group (TWG) inaugurated, with a sub-committee on newborn health
- **May**
 - Chlorhexidine gel was incorporated into revised pre-service curriculum for community health practitioners; a comprehensively revised pre-service curriculum for community health practitioners led by SCI with funding from B&MGF in collaboration with other partners & FMOH included training on the use of CHX gel in the training package as part of Essential newborn care, for the training of Community Health Extension Workers (CHEWs), CHOs etc. in the schools of Health Technology. The soft copies of the new training curriculum with lesson plans & log books were disseminated to the training schools for use.

² A UN Partner distributed Mama Kits containing imported CHX solution, packaged like eye drops. This led to mis-application to the eyes of babies by mothers in Adamawa state causing serious adverse effects. It became a national issue. The FMOH & NPHCDA made concerted efforts to retrieve all the mama kits containing the CHX solution in circulation; however, states, especially in the northern part of the country, stopped procurement and distribution of CHX gel. This was a huge blow to the gradual scale up of the use of the commodity at that time.

- It was also included into in-service training packages such as ENCC, LSS, IMCI, ICCM; and policy documents, for the training of doctors, nurses, midwives and CHEWs by trainers on ENC course.
- FMOH led advocacy visit to key influencers in all states on neonatal commodities
- **November**
 - National launch of Newborn strategy documents i.e. National Strategy for the Scale Up of Chlorhexidine in Nigeria, Nigeria Every Newborn Action Plan (NiENAP)³ and Essential Newborn Care Course Package (ENCC) during the World Prematurity Day celebrations by the Minister of Health, with attendance by development partners, professional Association members, most of who are based & work outside of Abuja and members of the Press
 - Save the Children advocated for the introduction of 3 newborn health questions including one on chlorhexidine into the MICS 5 questionnaire which resulted in data collection on chlorhexidine coverage in MCS5 2016/17 study report.
 - MCSP and FMOH Child Health Unit advocated that CHX indicator be added to the HMIS (HMIS update has not yet occurred as at the time of the conduct of this case study)

2017

- **January, June/July**
 - Disseminated the national chlorhexidine Scale up strategy documents to members at the Paediatric Association of Nigeria (PAN) Scientific Conference (PANConf) also at the Association of General and Private Medical Practitioners of Nigeria (AGPMPN) annual conference and the Nigerian Society of Neonatal Medicine (NISOMN) annual scientific conference(in June)
 - Two state officials from each state (representing the SPHCDA and SMOH) attended a workshop to become oriented on the CHX national scale up plan, lay the groundwork for collection of non-routine data for CHX, and develop a state-level action plan.⁴
 - The number of Local manufacturers approved for production of chlorhexidine increased to four.
 - Chlorhexidine related non-routine data collection tool was pre-tested by asking state RH Coordinators⁵ to complete it
 - 29 states reported including CHX in their five-year State Strategic Health Development Plan.
 - MCSP and FMOH Child Health Unit advocated that CHX indicator be added to the HMIS (HMIS update has not yet occurred as of this case study)
 - 30,000 tubes of CHX were procured & distributed to facilities by the Kogi state government.

2018

- **January**
 - The updated National Essential Medicines List containing 4% chlorhexidine gel was published and disseminated by the FMOH to the state MOHs, through direct shipment of the documents. 19 states reported that they had updated their state level EMLs with CHX

³ NiENAP is also an overarching strategy for newborn health programming. You can say the CHX strategy is an offshoot. In terms of adherence to NiENAP, i don't think anything has happened. Few states with support of Unicef are currently developing their state level ENAP. [Jenna has added the NiENAP document to the shared Dropbox folder]

⁴ These plans were outputs of a national convention of the political heads of all SMOHs and executive heads of all SPHCDA. They were flown to Abuja or to Lagos (regional meetings) to learn more about the National Strategy and they were asked to brainstorm 3 actions for their state. They all wrote down these actions, and this is what is referred to in the timeline. A huge limitation of this is that these figure-heads may not have actually told any of their staff about the actions they made for their states. Or maybe they did. Unfortunately, no one is tracking states' status with these plans (also, remember that the MCH TWG has not been functional at all). [Jenna has added a document in the background subfolder in Dropbox that consolidated all the state-level operational plans created during these conventions. You can see that they are quite high-level. I think the FMOH's objective was to get the state political and executive heads to start thinking about state uptake of this strategy.]

⁵ RH coordinators are personnel of the SMOHs. They are considered important stakeholders because they are the focal person for newborn health activities implemented or coordinated by the SMOH

- FMOH convened a meeting of RH Coordinators (or proxies) from all 36 states + FCT in Abuja to discuss status of CHX implementation
- Pilot testing of Community HMIS tools conducted in two states; CHX distribution by community health workers is included as an indicator
- WhatsApp group of all state RH Coordinators established to establish communications between the FMOH and these workers and for sending data on CHX use in the states
- **May – August**
 - Data collection for this case study conducted
- **July**
 - FMOH led Stakeholders meeting (with support from MCSP, to further assess state progress and challenges in implementing CHX)
 - CHX Learning visit by 7 West African countries (Burkina Faso, Niger, Senegal, Togo, Mali, Cote d'Ivoire, Guinea) to Nigeria
 - MCSP and FMOH Child Health Unit continue to advocate that CHX indicator be added to the HMIS (HMIS update has not yet occurred as of this case study)
- **September – December**
 - Meeting between manufacturers, FMOH Family Health and FMOH Food and Drug Services, and Unicef to discuss barriers to Unicef procurement from Nigerian manufacturers and next steps and to design a common leaflet about CHX use (clarifying information and using more pictures) that all manufacturers could adopt (as of this case study, we can't confirm or deny whether the updated leaflet has been adopted by all Nigerian manufacturers producing CHX)
 - MCSP Nigeria close-out (field activities at national level and in Kogi and Ebonyi ceased Sept 30)
 - Drugfield Pharmaceuticals (one of the CHX manufacturers in Nigeria) invited to visit Unicef HQ in Denmark related to barriers surrounding Unicef procurement of CHX
 - Letter sent from the Minister of Health Nigeria to Unicef HQ in Denmark requesting another audit

Annex 3. Detailed Methodology of Study

Table A.3 Sampling for key informants for interviews

Stakeholder type	Primary roles related to CHX scale-up	Sampled (non-responses/canceled interviews in red)
FMOH agencies and units	Coordinate national implementation or CHX activities; update/develop national-level policies; enable or directly conduct procurement and distribution; enable or directly conduct training of health workers and other providers/distributors	Health Promotion Division/Family Health Department/FMOH Child Health Division/Family Health Department/FMOH Department of Food and Drugs Services/FMOH National Agency for Food and Drug Administration and Control/FMOH Department of Health Planning Research and Statistics/FMOH Hospital Services/FMOH (interview declined)
Sub-national government agencies and state politicians	Coordinate implementation of CHX activities at the state level; update/develop state-level policies related to CHX; develop operational plans related to CHX; enable or directly conduct procurement and distribution related to CHX; enable or directly conduct training of health workers and other providers/distributors related to CHX	<u>Kogi State Government</u> Fair Health Plus/Kogi SMOH Saving One Million Lives Program for Results/Kogi SMOH Logistics Management and Coordinating Unit/Kogi SMOH Health Management Information Systems Unit/Kogi SMOH Commissioner of Health/Kogi State (interview canceled) Executive Secretary Kogi SPHCDA (interview canceled) Reproductive health/Kogi SMOH (interview canceled) Pharmaceutical services/Kogi SMOH (interview canceled) <u>Ogun State Government</u> Reproductive health/Ogun State Primary Health Care Development Insurance unit/Ogun SMOH Executive Secretary/Ogun State Primary Health Care Development Pharmaceutical Services/Ogun SMOH (interview canceled) Ogun State Ward Development Committees representation (interview canceled) <u>Sokoto State Government</u> Logistics Management and Coordinating Unit/Sokoto SMOH Department of Planning Research and Statistics/Sokoto SMOH Community Health Services/Sokoto SPHCDA Chairman/Sokoto SPHCDA Pharmaceutical Services/Sokoto SMOH (field test) Reproductive health/Sokoto SMOH (interview canceled) Sokoto Ministry of Local Government (interview canceled) Saving One Million Lives/Sokoto SMOH (interview canceled)
Donors	Provide financing to implementing partners related to CHX; contribute financing for FMOH and/or sub-national	USAID/Nigeria World Health Organization Unicef (also an implementing partner) DFID (no response) Il and Melinda Gates Foundation (no response)

	government initiatives related to CHX	
Implementing partners	Provide technical assistance to FMOH and/or sub-national governments related to CHX; contribute financing for FMOH and/or sub-national government initiatives related to CHX; provide implementation support to other stakeholders (e.g. health facilities, social marketing campaigns) related to CHX	<u>National or multi-state partners</u> Society for Family Health Pathfinder International / Nigeria Plan International / Nigeria Maternal Newborn Child Health 2 (MNCH 2) Programme United Nations Children's Fund (Unicef) / Nigeria Breakthrough Action Population Council of Nigeria (no response) Marie Stopes International (interview canceled, replaced with Marie Stopes International/Ogun State office) <u>Kogi state partner</u> Maternal Child Survival Program (interview canceled to allow the civil society organization in Kogi state to be selected instead) <u>Ogun state partner</u> Marie Stopes International <u>Sokoto state partner</u> Plan International
Professional associations	Build knowledge and demand for CHX among health care workers	<u>Associations operating at national level</u> Paediatric Association of Nigeria Pharmaceutical Society of Nigeria Nigerian Society of Neonatal Medicine Association of General and Private Medical Practitioners of Nigeria (field test) National Association of Nigeria Nurses and Midwives (no response) <u>Associations operating at Kogi state level</u> Nigeria Association of Patent and Proprietary Medicine Dealers/ Kogi State Chapter Nigerian Society of Neonatal Medicine (NISONM)/Kogi State Representative Nigerian Medical Association/Kogi Chapter (interview canceled) <u>Associations operating at Ogun state level</u> Association of General and Private Medical Practitioners of Nigeria/Ogun State Society of Gynaecology and Obstetrics of Nigeria/Ogun State <u>Associations operating at Sokoto state level</u> Association of Community Pharmacists of Nigeria/Sokoto State National Association of Nigeria Nurses and Midwives/Sokoto State
Civil society	Build knowledge and demand for CHX among caregivers	Association of Civil Society Organisations Working in Malaria, Immunization and Nutrition/Kogi Chapter Sarkin Yakin Gagi/Traditional Leader/Global Health Advocate/Sokoto State

Manufacturers Manufacture, distribute, and generate demand for CHX

Drugfield Pharmaceuticals
Emzor Pharmaceuticals
Jawa Industries
Tuyil Pharmaceuticals (interview declined)

Key informant interviews

The majority of interviews took place in a private setting within the respondents' place of work or a location preferred by respondent. Two interviews (both with key informants from professional associations) took place in a public setting with the agreement of the respondent because it was not possible to conduct the interview at the respondent's place of work. No interviews occurred over the phone; 40 took place in person.

Interviews were conducted by two or three members of the research team ('interviewers'). Before the date of the interview, a member from the research team sent the consent form to respondents to review ahead of time. At the time of the interview, the interviewers explained the purpose, methods, and the potential risks and benefits of participation. The interviewers then asked the respondent to consent to the interview and sign a printed version of the consent form. All 40 respondents consented to the interview and signed the consent form. The interviewer then requested verbal consent of the respondent to audio record the interview for data analysis purposes. All respondents agreed to be audio recorded. No photographs were taken of the respondents.

One interviewer from the research team led the semi-structured interview while the other interviewer(s) provided support with notetaking and audio recording. Any interviewer could ask follow-up and probing questions. Interviews were conducted in English.

Audio files of the interviews were transcribed into a Microsoft Word document by hired transcribers. Transcriptions were reviewed for quality by at least one of the interviewers. Additionally, interviewers wrote field notes to summarize key content discussed during the interview and capture their impressions

Analysis of key informant interviews

Data from key informant interviews were analyzed in a step-wise process.

The first step involved coding the transcripts. This was done using the qualitative data management software Dedoose. Transcripts were uploaded in Dedoose and assigned the following descriptive variables:

- Location (Abuja, Lagos, Sokoto State, Kogi State, or Ogun State)
- Respondent type (National Government, State Government, Donor, Implementing Partner, Professional Association, Civil Society Organization, or Manufacturer)

Transcripts were then coded by members of the research team using a common codebook. Nine transcripts were coded in a group session to familiarize the coding team with the codebook and adjust the codes' definitions as necessary to clarify them for all team members. The remaining 31 transcripts were coded individually by members of the research team who had participated in group coding sessions. The final codebook lightly adapts the domains and constructs of the Consolidated Framework for Implementation Research (CFIR).⁶

The second step involved interpreting the coded data. The research team reviewed the coded excerpts and used findings from the data to either confirm or refute the hypotheses.

⁶ <https://cfirguide.org/>

Annex 4. Institutionalization Matrix

Table A.4

This scoring was first done by the Nigeria-based research team in May 2018 before they started data collection. The findings generated through this scoring helped inform the design of key informant interview guides. The team then revised the matrix in August 2018 after completion of the key informant interviews to give the final scores shown here.

Health System Component		← ← Less institutionalized		More institutionalized → →		Selection ↓
		1	2	3	4	
Governance	Policy	Policies and guidelines that include the intervention are under discussion	Policies and guidelines have been developed, and are being tested or being implemented mainly with support of outside agencies.	Policy changes have been adopted; guidelines are being finalized; training is rolling out on new guidelines.	A majority or all of the relevant managers and providers are trained on national policy and guidelines that include the intervention.	3.0
	Planning	Discussions have occurred about piloting the intervention	Pilot activity is included in subnational health plan	Intervention included in subnational health plan were being implemented OR it is in national health plan, but only for part of the country.	Intervention is included in national health planning processes.	4.0
	Coordination	Intervention has been discussed at least once in coordination meeting(s) between Ministry of Health and donors/technical agencies	Pilot activity is occurring in collaboration with national stakeholders and discussed in coordination meetings.	Intervention is included on agenda of key coordination bodies.	Intervention is fully integrated in national and subnational coordination bodies.	2.0
	Leadership	There is at least one champion/focal person for the intervention in the Ministry of Health. Discussions are preliminary.	Advocacy for skills building, quality improvement, and continued program expansion; advocating for integration into existing health programs; Interventions in partners' agenda.	Advocacy for additional funds to support national intervention.	The Ministry of Health has assigned personnel to support the management/governance within the appropriate section of the Ministry of Health, which takes responsibility for its implementation.	4.0

Finance	Finance	External partner(s) fund costs associated with pilot activities covering a small geographical area	Donors fund expansion of intervention; government is considering costs and preparing cost analysis/projections to include intervention in existing budget.	Ministry of Health funds much of the costs of the intervention, but has ongoing outside support.	Government includes intervention as a line item in budget	2.0
Human Resources	Training	Only in-service training being done; by outside agencies; and in pilot areas and/or on an ad hoc basis.	In-service training conducted only with external Training Assistant (TA)	In-service training conducted by Ministry of Health (may be with external TA). Intervention still not included in pre-service curricula.	Ministry of Health leads in-service trainings and has integrated intervention in pre-service trainings	3.0
	Personnel	Discussions are underway about what cadres of health care workers (HCW) can implement the intervention	Authorized cadres of HCW are implementing the pilot with supervision of implementing partners.	Job descriptions have been expanded to include duties (if necessary). MOH staff able to cover some but not all the human resource needs to implement the intervention.	HCW cadres are authorized to implement intervention and are actively implementing the intervention as part of routine scope of practice. There are sufficient HCW to cover the need.	3.0
Service Delivery	Quality Improvement	Quality Improvement system is being modified to include the intervention into in existing relevant materials	External TA providers train health managers in pilot areas in quality improvement (QI)/quality management (QM) approaches, including use of documentation, measurement, monitoring, reporting and assessment.	Standardization of QI approaches into facility and subnational bodies (e.g. District health management team (DHMT)). External TA providers collaborate with government to mentor facility teams to carry out routine participatory assessment of quality of care; ensure staff buy-in and team building; QI standard operating procedures (SOPs) developed.	QI/QM system institutionalized at local, subnational and national levels and lead by subnational teams.	2.0

	Supervision	Revisions to supervisory system (e.g. checklists) elements for the interventions are underway to incorporate intervention into existing relevant materials	External TA providers train managers in learning sites on supervision techniques; develop or revise supervision guidelines	External TA providers conduct joint supervision visits with government counterparts; follow up findings of joint supervision visits; training managers on decision-making strategies and evaluating effectiveness of programs.	Supervision guidelines and processes institutionalized within government systems; supervision visits funded and implemented independently by government in all intervention sites	2.0
Demand/ Clients	Demand Creation / Community Engagement	Strategy and materials for demand creation for beneficiaries and providers under development	External stakeholders doing all support for uptake of the intervention among potential beneficiaries	Some demand creation being taken up by MOH (Ministry of Health)	Demand creation done by government, integrated with other programs. Community advocacy to increase demand for service.	2.0
Commodities	Commodities and Logistics	Discussions with MOH and partners about needed supplies/Commodities for intervention	External TA providers train health teams in commodity management. External funded commodities for pilot sites only.	Appropriate commodities available in multiple geographic areas, but procurement and/or logistics managed by external partners	Procurement and logistics for appropriate commodities included in the MOH systems (forecasting, supply, distribution and oversight)	2.0
HIS	Health Information Systems	Discussions about need for new indicators and/or data collection and reporting forms.	A pilot experience and/or readiness assessment conducted to test appropriate indicators and/or reporting forms.	New indicators used in some but not all geographic areas and/or indicators collected but not sent through regular reporting chain.	Appropriate indicators for intervention are in National Health Information System (HIS) and are reported on a regular basis.	2.0

Annex 5. Scalability checklist

Table A.5

This tool is an adaptation of the Scalability Assessment Tool originally published in [Scaling Up - From Vision to Large-Scale Change](#) (MSI, 2012).

Instructions: For each row, add a checkmark in ONLY one of the three white columns. Then, count the total checkmarks for each column.

This scoring was first done by the Nigeria-based research team in May 2018 before they started data collection. The findings generated through this scoring helped inform the design of key informant interview guides. The team then revised the matrix in August 2018 after completion of the key informant interviews to give the final scores shown here.

A. How <u>credible</u> is the intervention package?	Credible	Key factor (credible)	Somewhat credible	Key factor (not credible)	Not credible	Notes
	X	Based on sound evidence		Little or no solid evidence		
	X	Independent external evaluation		No independent external evaluation		
		Substantial evidence that the model works in diverse contexts	X	There is no evidence that the model works in diverse contexts		
		Supported by eminent individuals and institutions	X	Supported by few or no eminent individuals and institutions		
		Impact very visible to decision-makers and users and easily associated with the intervention	X	Impact relatively invisible to decision-makers and users and/or not easily attributable to the intervention		
B. Does intervention package have <u>relative advantage</u> over existing practices?	Strong relative advantage	Key factor (strong relative advantage)	Somewhat of a relative advantage	Key factor (no relevant advantage)	No relative advantage	Notes
		Current solutions considered inadequate		Current solutions considered adequate	X	
		Superior effectiveness to current solutions and other alternatives clearly established	X	Little or no objective evidence of superiority to current solutions and other alternatives		
C. How strong is <u>support</u> for the intervention package?	Strong	Key factor (strong)	Medium	Key factor (weak)	Weak	Notes
		Strong sense of urgency regarding the problem or need		Relative complacency	X	
	X	Strong leadership coalition committed to change		Weak, divided or deeply conservative leadership		
	X	Addresses an objectively significant, persistent problem		Addresses a problem that affects few people or has limited impact		

	X	Addresses an issue that is currently high on the policy agenda		Addresses an issue that is low on the policy agenda		
		Faces limited opposition	X	Faces strong opposition		
	X	Addresses a need that is sharply felt by potential beneficiaries		Addresses a need that is not sharply felt by potential beneficiaries		
D. How easy is the intervention package to <u>transfer and adopt</u> ?	Easy	Key factor (easy)	Medium ease / difficulty	Key factor (difficult)	Difficult	Notes
	X	Fully consistent with government policy		Requires substantial change in government policies		
	X	Implementable with existing systems, infrastructure, and human resources		Requires significant new or additional systems, infrastructure, or human resources	X	
	X	Few decision makers involved in agreeing to adoption of the model		Many decision makers involved in agreeing to adoption		
		Highly technological with clear deliverables		Process and/or values are critical		
	X	Low complexity; few components; easily added onto existing systems		High complexity with many components; integrated package		
		Intervention is self-regulating		Intervention requires substantial supervision and monitoring to maintain quality	X	
	X	Able to be tested by implementers on a limited scale		Unable to be tested without adoption at a large scale		
		Small departure from current practices of target population		Large departure from current practices of target population	X	
E. How good is the <u>fit with the implementing organization</u> ?	Good fit	Key factor (good fit)	Medium fit	Key factor (not a good fit)	Not a good fit	Notes
		Existing organization has the operational capacity and financial resources to implement at scale	X	No existing organization with the systems, delivery agents, and resources to implement at scale		
		Implementing organization has physical presence or strong network and credibility in relevant contexts	X	Implementing organization lacks footprint and credibility in relevant contexts		

		Implementing organization has leadership team, norms and incentives consistent with the intervention	X	Major changes needed in leadership, organizational norms and incentives		
	X	Demonstrable support for the change among staff		Active resistance by staff		
		Organizational history and culture of iterative learning and evidence-based decision-making		No history of iterative learning and evidence-based decision-making	X	
F. How strong is the <u>scale up strategy</u> ?	Strong	Key factor (strong)	Medium	Key factor (weak)	Weak	Notes
		Homogeneous problem, target group and setting - geography, language, economy, politics		Multiple, diverse contexts	X	
		Implementing organization has experience with use of a systematic process for scaling up		Proposed implementing organization lacks experience with a systematic process of scaling similar interventions	X	
	X	Presence of a clear and compelling strategy for reaching scale (costed and with strong M&E plan)		No articulated scaling strategy		
G. Is there a sustainable source of <u>funding</u> ?	Sustainable	Example (sustainable)	Somewhat sustainable	Example (not sustainable)	Not sustainable	Notes
		Substantially lower unit cost than existing or alternative solutions	X	Substantially higher unit cost than existing or alternative solutions		
		Requires small commitment of funds to begin		Requires large commitment of funds to begin	X	
		Financed by internal funding (e.g., user fees) or endowment		No internal funding	X	
Total checks	12	---	10	---	10	---
	<i>Very scalable</i>		<i>Somewhat scalable</i>		<i>Not scalable</i>	

Annex 6. Assessment of scale-up environment

Table A.6

Instructions: Use this tool to identify any relevant environmental factors that are external to the implementing organizations and the scale-up management team, but that fundamentally affect the prospects for successful scale-up of the intervention. Include a brief explanation of how each factor affects scale-up of the health intervention (positively or negatively). Those factors that the team considers the most important should be noted by putting in **bold type**.

This scoring was first done by the Nigeria-based research team in May 2018 before they started data collection. The findings generated through this scoring helped inform the design of key informant interview guides. The team then revised the matrix in August 2018 after completion of the key informant interviews to give the final scores shown here.

Environmental Elements	Examples	Key Factors Affecting Scale-Up (enablers)	Key Factors Affecting Scale-Up (barriers)
Political Environment	Political situation, security, governance culture, bureaucratic culture, formal and informal political relationships	- Nigeria is strategic to Africa and Global development being the largest economy and having the largest population and the political hub. - Nigeria runs a three-tier government hence decisions on health can be taken independently at each tier of government National: - The former president as co-chair of UNCoLSC acted as an enabler for the adoption and funding of seed stock of CHX to 1000 facilities through the SURE-P program. (global which translated into National policy) - Strategic policy document was launched by the Minister of Health in Nov 2016. \$500m loan from World Bank served as catalyst for Implementation of Saving One Million Lives Program for Results - Operationalization of the National Health Act (1% consolidated revenue of the National budget) State - Health is a priority tool for gaining political power during campaigns for most states - Some states have prioritized CHX using SOML funds - Support by donors and development agencies vis a vis provision of technical support and resources for implementation in target states Strategic policy document was adopted by the Kogi state Governor in March 2017	- Health is on the concurrent list meaning that decisions at the national level is not binding on the state or local government authority level - Frequent changes in political players affected continuity of program implementation - Previous years of economic downturn affected - Delays in appropriation, approval, and release of national fiscal budgets. Budgetary allocation for health has below the recommended 15% of the Abuja Declaration (2003) - Corruption and lack of accountability State - Health is not considered as a revenue generation sector; it receives less focus than other revenue generating sector like agriculture. <i>Whereas, health should be an enabler for all sectors</i> - Security challenges and internal displacement in some areas (Ethnoreligious disturbances spreading) - Delays in approval and release of state budgets - Lack of continuity in leadership structure - Limited political will, especially at the state level for the adoption, procurement and distribution of CHX

Health System Environment	Level of external support for the intervention; collaboration between health sector partners; presence of other policies/programs that conflict with, help or hurt scale-up; systems barriers that could affect scale up (e.g. high drug stock-out rate).	• National Council on Health approval for 15 commodities including CHX in 2013 • Support by donors and development agencies vis a vis provision of technical support and resources for policy development and guidelines • Nigeria enjoyed a high level global support through donors and development agencies for piloting, adoption and implementation of scale up of CHX gel • Leadership and Governance; Inclusion in National Essential Medicines List, integration into pre and in-service training packages • HMIS – CHX prioritized in ongoing review for tracking • CHX is included as a benefit package by the NHIS • Availability of functional drug revolving fund in some states • Operational task shifting and task sharing policy will increase coverage with the involvement of additional cadre of health workers • CHX use was covered in MICS 2016/17 and will be covered in DHS 2018	• Lack of coordination of implementing partners with different agendas • Procurement, distribution and misuse of unapproved CHX solution, leading to blindness which caused setback and distrust for CHX. • Damage control effort was limited to affected states, (ripple effect not well mitigated). • Lack of awareness/acceptance among a large number of health professionals which led to initial resistance and subsequently slowed down take-off. • Apparent delay in cord separation by CHX in relation to the current materials used for cord care • The use of Methylated spirit is still preferred by many prescribers due to their wide acceptance of the product • Weak coordination among National/state MDAs. • Lack of special budgetary line within the MNCH budgets in most states and nationally. • Excess markup (price) affecting the relative cost of CHX compared to other alternatives. • Poor private sector participation i.e proprietary and patent medicine vendors. • The current standardized list for the mama kit is not being followed. • CHX procurement, stock-out not yet tracked. • Last mile distribution challenges. • CHX utilization in routine data not yet tracked
Other	Geography, weather patterns, any contextual factors not included above	• Technical assistance to local manufacturers in the production CHX gel • National support for local consumption through “ban” on importation	• Limited distribution in hard to reach areas with poor accessibilities undermines utilization • Poor care seeking behavior • Low facility delivery • Socio-cultural believes that early cord separation is beneficial

Annex 7: Specific actions mandated in the *National CHX Scale-up Strategy* and the extent of implementation to date

The national strategy was finalized in August 2016. Its development was led by Dahlberg Global Health Advisors with funding from USAID/CII. Many stakeholders were consulted and invited to contribute. Below is the list of contributors (from page 7 of the *National Strategy* document).

- Federal Ministry of Health and Parastatals
 - Child Health Division, Department of Family Health
 - Department of Food and Drug Services
 - National Primary Health Care Development Agency
 - National Agency for Food and Drug Administration and Control
 - Pharmacists Council of Nigeria
 - Community Health Practitioner Registration Board
- State Ministries of Health and State Primary Health Care Development Agency Boards
 - Bauchi
 - Cross River
 - Ebonyi
 - Gombe
 - Kaduna
 - Katsina
 - Ogun
 - Rivers
- Paediatrics Association of Nigeria
- Pharmaceutical Society of Nigeria
- Society of Gynaecologists and Obstetrics of Nigeria
- National Association of Nigeria Nurses and Midwives
- National Association of Proprietary Patent Medicines Vendors
- Nigerian Urban Reproductive Health Initiative
- Nigerian Society of Neonatal Medicine
- Drugfield Pharmaceuticals
- Emzor Pharmaceuticals
- World Health Organization
- Clinton Health Access Initiative
- USAID/Nigeria
- USAID/Maternal and Child Survival Program
- Targeted States High Impact Project
- Jhpiego
- John Snow Inc.
- Marie Stopes International
- Save the Children International
- Bill and Melinda Gates Foundation
- USAID/Center for Accelerating Innovation and Impact
- Society for Family Health
- UNFPA
- UNICEF
- PATH for Global Chlorhexidine Working Group
- PACT
- Strengthening Health Outcomes through the Private Sector
- Insight Health Consulting
- Private Sector Health Alliance of Nigeria
- Dalberg Global Development Advisors

The strategy proposes concrete interventions across five core components of scale-up: market & user; manufacturing & distribution; clinical & regulatory; policy, advocacy, & financing; and coordination. Achievements and gaps are organized this way in the matrix.

Table A.7

Need		Recommended interventions	Responsible	What has actually happened to date (to team's knowledge)
Low awareness amongst target users	Facility provider	• Update pre-service curricula for doctors, nurses, and midwives • Disseminate and orientate health workers on updated pre-service curricula • Build capacity of in-service health workers on updated ENCC packages • Promote key messages with local content across multiple channels, tailored by state and target user – focus on health talks, job aids, posters, and information in facilities • Conduct user-centered research to understand how to generate demand for CHX and strengthen communication accordingly	• FMOH, SMOHs, professional associations to disseminate updated training packages and messages to their networks • SMOHs, development partners to decide on media and disseminate messages (see implementation plan and Annexes B and C for guidance on state-level decisions) • FMOH, professional associations to lead research efforts and disseminate updates and new innovations, with support from donors	• It is unknown which institutions ultimately integrated CHX in their pre-service curricula. We are unaware of any conversations FMOH may have had with institutions. No FMOH key informant mentioned having done so. Need to track on institution-by-institution basis • FMOH did ToT of an in-service training package (ENCC) after CHX was included. Some states have financed step-down trainings but the number of providers actually trained in step-down trainings by various states is unknown to MCSP. • After many discussions with professional associations, team concluded that they may not have capacity to spread information about CHX or other practices through their associations. She had put a lot of effort into this intervention with quite limited results • FMOH made a few posters related to CHX for facilities, and reported to MCSP that they sent electronic files of the materials to states. However, when following up with States Olayinka did not get the impression that states were aware of these materials and had done anything with them • Tema not aware of new market research that had been financed by donors and done by FMOH or professional associations, however it is expected that a new USAID project (Breakthrough Action) will do this soon, and also hopefully

				finance more demand-generation activities
	Community health worker	- Disseminate and orientate tutors on pre-service curricula - Build capacity of in-service health workers on updated mENCC packages - Promote key messages with local content across multiple channels, tailored by state and target user – focus on materials in PHCs, job aids, radio/TV	- FMOH, states, professional associations to disseminate updated training packages and messages to their networks - SMoHs, development partners to decide on media and disseminate messages (see implementation plan and Annexes B and C for guidance on state-level decisions)	- CHAI reportedly trained CHWs to do community-based counseling and distribution of CHX in the few states they supported until 2017. - Pathfinder reportedly trained CHWs to do this in the states they supported as well - Need to track on state-by-state and program-by-program basis
	Mother/family (men included)	Promote key messages with local content across multiple channels, tailored by state and target user – focus on print and electronic media (radio, TV, social media, and materials in PPMVs) – messages should also reach men, who act as key gatekeepers for mother/family target users	- FMOH and professional associations to lead research efforts and disseminate updates and new innovations, with support from donors - FMOH, SMoHs, professional associations, development partners to share messages; states/development partners to decide on media and disseminate messages	FMOH did a time-limited national-level jingle and TV spot about CHX in 2017 and reportedly shared those materials with state officials. However, whenever Olayinka would follow up with states no one seemed to be aware of those national marketing materials or had done much with them at the state level (ideally states would revise them to be more relevant to the local population) Need to track on state-by-state basis
Low awareness at points of access for target users	Facilities	Utilize ENCC and other training packages that incorporate CHX at public and private facilities to build capacity	SMoHs, manufacturers, development partners, in-charges of facilities, professional associations	Need to track on state-by-state basis
	Pharmacies/PPMVs	Conduct sensitization training activities at private PPMVs/pharmacies and public pharmacies at PHCs to build capacity and orientate on newborn care (including cord care), leveraging professional associations for many of the private sector visits and SMoHs at select public and private pharmacies to demonstrate commitment and secure buy-in; consider clinical mentoring at PHCs	Manufacturers, development partners, SMoHs, PHC directors, professional associations	As far as team knows, no one has tracked if events like these have occurred
	Outreach ⁷	Conduct training activities to build capacity of donors	Development partners, SMoHs	MCSP, FMOH or RH Coordinators at SMOHs have

⁷ Outreach is defined as target users who receive Chlorhexidine without any proactive efforts to procure – for example, it comes into a delivery kit given

		and private companies currently distributing mama/delivery kits, delivery packs, and delivery lists, or considering this work in the future		spent a lot of time meeting with donors, partners, private associations, etc to advocate for them to incorporate CHX into their programs. In general we think this advocacy has generated results but it is difficult to know for sure. The Breakthrough Action project is an example where CHX demand generation is now in the project workplan. Saving One Million Lives (present in all states) is another example where we believe some advocacy visits have helped generate funds for CHX. The Bello Health Initiative in Kogi state is another good example. Need to track on state-by-state basis
Lack of aggregated demand forecasts		• Support remaining states with their forecasts • Check national CHX projections against scale-up plan targets, as well as realistic limitations (e.g., available funding) • Update forecast bi-annually	• FMOH, SMOHs for national and state forecasts, respectively • Uptake coordinator to support	• At the regional dissemination events MCSP helped the state representatives making their action plans to understand projected number of births by delivery setting in their states using published statistics. • Aside from this effort, MCSP believes that forecasting is done on an ad hoc basis when a funder decides to procure CHX for the state/program/facility

Activity		Recommended interventions	Responsible	What has actually happened so far (to MCSP's knowledge)
<u>Increase awareness amongst target users</u>	Public	• Encourage and support states to procure and distribute CHX by advocating to SMOHs (see policy, advocacy, & financing interventions) and working with the director of pharmaceutical services or similar person in each state to execute the procurement • Leverage existing public systems in each state for procurement and distribution of CHX, with	• <u>FMOH</u> to lead advocacy efforts, with support from <u>uptake coordinator</u> • <u>SMOHs</u> to procure CHX, potentially with catalytic matching funds from <u>development partners</u> • <u>SMOHs</u> to determine optimal existing delivery channel(s) for CHX (see implementation plan and Annexes B and C for state-level guidance on decisions)	• Many advocacy meetings have occurred for Olayinka and FMOH to try and encourage states to procure or encourage states to ask their partners to ask them to procure. We think some of these advocacy meetings have led to more procurement but it is difficult to prove a direct link between meetings that may have occurred years ago with procurements happening now.

		emphasis on MNCH and FP channels capable of reaching the last mile • Bundle CHX with other MNCH and FP interventions: mama/delivery kits, delivery packs, delivery lists, misoprostol, etc.		• In terms of leveraging existing public systems, we believe that states that want to distribute CHX have done just that, if there are opportunities to be found. It seems that states are very adept at seeking opportunities like this because the reality is that they don't have enough funding for distribution of essential commodities. Need to track on state-by-state basis. • We believe that as word about CHX spreads, and as large procurements continue to occur, CHX will make it into more and more mama packs and delivery lists. As we mentioned elsewhere, these packs and lists are not standardized so the organization/person in charge of each type of pack in each different geographic location has to take a deliberate step to include CHX in a pack or on a list. It would be very difficult to track this comprehensively, even if only at the level of one state.
	Private	• Leverage existing private systems in each state for procurement and distribution of CHX, with emphasis on reaching PPMVs and pharmacies at the last mile (desired location of CHX purchase for ~50% of users)⁸ through manufacturer sales reps or independent distributors • Provide technical support to manufacturers to set sales targets; strengthen	• Local manufacturers, distributors to push CHX to PPMVs and pharmacies • PMG-MAN to connect manufacturers to PPMVs and other points of access • Development partners to explore providing technical support to indigenous manufacturers as desired • SMOHs and development partners to organize wholesale activation, with support from state-level coordinators	• Manufacturers have reported doing this. We sense that it has been a slow ramp-up due to factors we've described elsewhere in the dossier, but over time this practice has clearly increased. Their sales and distribution data support this claim. • A lot of effort has been put into the GMP approval and supporting manufacturers. Please see that section of the report for more details.

⁸ "Market Research for 7.1% Chlorhexidine Digluconate: Nigeria," conducted by PATH with funding from US Agency for International Development. Market research was conducted in Kano, Nasarawa, Osun, and Cross Rivers.

		marketing and distribution efforts around CHX; and secure GMP approval • Conduct wholesale activation in target states by sending a representative to promote CHX to PPMVs and other potential purchasers • Brand PPMVs that regularly stock CHX (>90%) with “seal of approval” for neonatal health and publicize these PPMVs through demand generation and advocacy efforts <i>Note: many market & user and advocacy interventions will stimulate CHX private sector delivery channels by generating demand and convincing private sector that CHX is valuable</i>	• NAPPMED to brand PPMVs, with support from uptake coordinator	• Some SMOH officials have told MCSP that they have “linked facilities with manufacturers.” Having CHX on the state EML is expected by key informants to enable more wholesale and bulk procurement by SMOHs and partners. Need to track on state-by-state basis • Branding of PPMVs has not occurred or been pursued
Improve messaging and branding	• Incorporate user-centered research recommendations to strengthen communication to draw consumer attention and prevent misuse via collaboration between donors, development partners, manufacturers, and NAFDAC	• <u>Donor</u> to fund user-centered research • <u>FMoH, NAFDAC, manufacturers, development partners</u> to consider improving communication to generate demand for CHX • <u>Newborn Sub-Committee</u> to approve	• Uptake Coordinator and FMOH have met with manufacturers to work on streamlining the product materials to avoid potential for another blindness adverse event and ensure accuracy of information (I believe most recent meeting was fall 2018). The recommendations discussed during those meetings were implemented by manufacturers, to team’s knowledge. • The newborn sub-committee has not met since the passage of the <i>National Strategy</i> and therefore did not approve, as proposed in the cell to the left	
Ensure quality and appropriate use of CHX	• Ensure quality and appropriate use of CHX through pharmacovigilance • Report adverse reactions	• NAFDAC, NPHCDA, manufacturers to monitor quality and usage of CHX • FMoH, NAFDAC to collect data on adverse reactions	• Key informants from these agencies paid lip service to pharmacovigilance. They did not provide many details as to how they are doing this.	

Activity	Recommended interventions	Responsible	What has actually happened so far (to MCSP's knowledge)
Monitor new evidence	Monitor new evidence released from recent studies in India, Tanzania, and Zambia, and other future studies	FMoH	Uptake Coordinator was doing this for the FMOH while National Coordinator. She will likely continue to monitor and send information to her FMOH contacts over time, despite no longer being in this position. It is unclear whether the FMOH has a system for tracking new evidence or not

Need		Recommended interventions	Responsible	What has actually happened so far (to MCSP's knowledge)
Placement on EML or other relevant lists not complete	National	- Finalize EML and STG to ensure easy procurement of CHX and promote widespread use (via treatment guidelines); also serves as guiding policy for states - Disseminate EML and STG to states via existing federal-to-state government communication channels (e.g., FDS representatives in each state)	- FDS - Uptake coordinator to support	- National EML updated - Experience from this scale-up initiative suggests that an STG is not used in Nigeria. This intervention may have seemed rational to the drafters of this strategy, but perhaps they did not understand the context.
	State	Advocate for adoption and enforcement of revised EML and STG	FDS	- Need to track EML updates on state-by-state basis - Most states reported that they updated as of July 2018
	Local	Advocate to states, hospitals, and community leaders to include CHX in all kits/lists and replace alternate cord care products	SMoHs	- Need to track on state-by-state basis - See information already presented in tables above
Limited commitment from key opinion leaders & state leaders	National	- Disseminate scale-up strategy across Nigeria - Make advocacy visits to SMoHs and tertiary hospitals with samples of CHX to solicit buy-in via a coalition of FMOH staff and members from the Newborn Sub-Committee of the Child Health Technical Working Group of MNCH-CTC - Send a FMOH/CHX representative to every	- FMOH, uptake coordinator to disseminate scale-up strategy - FMOH to make advocacy visits and determine appropriate reps to accompany	Several meetings and conventions have been held to this effect (see timeline in the dossier). In addition, Olayinka started a WhatsApp group for state reproductive health coordinators and this has appeared to be successful in elevating RHCs' knowledge of CHX and motivating many of them to talk about it with other state programs or during trainings when they see opportunities arise.

		professional association conference in the next two years with samples of CHX; reps will come from a coalition of FMOH staff and the Newborn Sub-Committee of the National Health Technical Working Group of MNCH-CTC		Uptake Coordinator has attended most of if not all relevant professional association conferences in 2017 and 2018, but felt these efforts have not had much success in changing provider behavior or attitudes around CHX. Conferences have not seemed to be an effective way to build knowledge and capacity of the providers who attend them.
	State	Make advocacy visits to secondary and private hospitals with samples of CHX to advocate for CHX via a coalition of SMOH staff and public/private point people in each state Make advocacy visits to local governments with samples of CHX to solicit buy-in	- SMoHs - State coordinators	- Need to track on state-by-state basis - The knowledge that team has of this comes from what has been shared in the WhatsApp group. Based on that, I believe that advocacy is happening in some and likely not most/all states. The group started in Jan 2018 and reports of such advocacy visits by some RHCs started trickling in summer 2018. - Based on impressions from following the WhatsApp group, some state RHCs were early adopters (summer 2018) and perhaps it is now spreading among middle-adopter RHCs (late 2018 through present)
	Local	Make advocacy visits to community leaders to solicit buy-in via a coalition of people from WDCs; where WDCs are not active, SMOH, state coordinators, and development partners can play a more involved role	LGAs, WDCs, development partners, SMOHs, state coordinators	- Need to track on state-by-state basis - Some motivated RHCs reported to the WhatsApp group that they have spearheaded these types of efforts.
Limited financial support for scale-up	Government	Catalyze state demand and procurement for CHX by sourcing matching catalytic funding from development partners, donors States to access National Health Act funding and use to support scale-up of CHX - Ensure/enforce that CHX is provided for under	- FMOH, SMOHs, donors to explore opportunities to fund commodity cost for states and finalize EML - Uptake coordinator and state coordinators to help states access NHA financing - States to mobilize non-donor funding through existing programs	- Need to track on state-by-state basis - We have heard of several examples where states and partners have decided to procure CHX. - I do not believe the National Health Act funding was ever released. Same with implementation of a National Health Insurance Scheme. These were big, splashy and political

		National Health Insurance Scheme • Mobilize non-donor source of funding at the state-level through state matching and free MNCH programs		pieces of legislation but are not actually being financed and implemented. Generally, MCSP kept track of big health sector programs like this and would have jumped at opportunities to advocate for CHX inclusion, but the reality was that these opportunities did not materialize.
	Private sector	• Identify private sector players to match funds for seed stock of CHX	• <u>FMoH</u>	• This intervention is a little vague because it's not clear what type of private sector actor they are referring to. There are a handful of private foundations with limited geographic reach, so perhaps this is what they meant? • Aside from private funders, we are aware that manufacturers donate small stock to potential future buyers like large hospitals or state governments. This is part of a marketing strategy.
	Donor	• Support similar catalytic and enabling activities in states without high levels of CHX activity, with a specific focus on supporting programs for awareness building, demand generation, and strengthening existing delivery channels; coordinating mechanism in each state will also require partner support • States to access World Bank loans and use to support scale-up of CHX	• <u>FMoH</u> to reach out to donors for support related to dissemination of messaging and adding CHX to EML • <u>SMoH</u> to advocate for integrating CHX into other activities led by development partners • <u>Uptake coordinator and state coordinators</u> to help states access World Bank financing	• Although MCSP may not have much visibility into conversations FMOH may have had with other donors, MCSP has not seen results that suggests these types of conversations have happened. Even between projects of the same donor, CHX is not part of every project. This suggests that more conversations may need to happen. • In terms of the World Bank loans, this refers to the Saving One Million Lives program mentioned elsewhere in the dossier. We are aware of some state SOML programs that have procured CHX. Need to track on state-by-state basis

Need		Recommended interventions	Responsible	What has actually happened so far (to MCSP's knowledge)
Need for strengthening the Newborn Sub-Committee	Leadership	• Newborn Sub-Committee within the National Child Health Technical Working Group of the MNCH-CTC receives mandate for CHX scale up coordination.	• <u>FMoH</u> • <u>Chair of Newborn Sub-Committee</u>	• This intervention did not work due to external and internal barriers. The Newborn Sub Committee has not fulfilled its role as the leader/coordinator of the scale-up initiative (see more details in the dossier)
	National support	• Appoint 1 FTE from a partner organization to support the coordination efforts of the Newborn Sub-Committee in its first year, primarily through technical assistance, as the FMoH Newborn Branch will take on most administrative responsibilities	• <u>FMoH</u>	• This intervention happened (Olayinka). She worked full time on CHX scale-up for over two years and in Jenna's opinion this was incredibly valuable to the scale-up effort.
	State support	• RH Coordinator to work with one development partner focal point for CHX in each state to oversee the coordination and implementation through the state MNCH-CTC	• <u>Uptake coordinator</u>	• Thanks to Uptake Coordinator's efforts and assistance to the FMOH Child Health Unit, RHCs were engaged in the CHX scale-up effort. This engagement took the form of two different conventions in Abuja and the WhatsApp group • In terms of whether each RHC worked with one development partner, would need to track on state-by-state basis. In general, I don't think this was a realistic strategy given not all states have an MNCH partner
Limited clarity on roles and responsibilities in scale-up		• Convene bi-monthly meetings (for the first year, quarterly thereafter) to track progress of national and state actors according to assigned roles and responsibilities, including ensuring continuous matching of supply and demand forecasts and troubleshooting as problems arise • Create joint workplan to coordinate all stakeholder activities	• FMoH • Uptake coordinator	• Two conventions of RHCs (as mentioned above) were used for tracking progress of state actors. Not bi-monthly • Tracking progress of national actors happened on a more ad hoc basis, mostly from Olayinka or the FMOH Child Health Unit following up directly with the national actor. Some national actors never really stepped up with what they were asked to do. For example, the Communications unit in FMOH made very little progress on the demand generation agenda, despite their mandate to do so. This was likely because no partner emerged to fund it.
Need for phasing plans for roll-out		• Oversee a phased approach to scale-up of CHX across states that begins	• FMoH, Newborn Sub-Committee	• A phasing approach did not happen. Any time dissemination

	with states with existing partner- or state-led programming related to CHX and then uses two criteria (need, feasibility) to select states from each region for subsequent phases • Vet placement of states into three phases; Phase 1 currently includes 16 states from all six regions (Adamawa, Bauchi, Cross River, Ebonyi, Gombe, Kaduna, Kano, Katsina, Kebbi, Kogi, Kwara, Lagos, Ogun, Plateau, Rivers, Sokoto); the states have high feasibility of scale-up given strong state and/or partner support and account for over 50% of neonatal mortality • Review phasing strategy each quarter to determine if modifications are necessary based on recent events/changes in state activities			events or RHCs conventions occurred, all states were invited.
Supply not matched with demand and forecast	• Support remaining states with forecasts • Compile state projections for demand into a national forecast each year • Communicate forecasts to manufacturers on a continual basis and ask manufacturers to report on planned production to ensure matching of demand and supply • Time supply and demand-related interventions to align with forecasts and gradually raise the supply-demand equilibrium; supply and demand activities must be sequenced together to avoid one piece outpacing the other (e.g., do not launch demand generation campaign in a state where CHX is not available without also addressing supply-side issues) <i>Note: forecasting is also covered in market & user</i>		• FMoH for national forecasts and aggregating state projections into a national forecast • States/development partners for state forecasts, with support from uptake coordinator • State-level coordinators to time activities, with support from uptake coordinator	• As discussed above, forecasting was just done for purposes of doing a procurement. In our experience, procurements were probably not based on forecasts (e.g. 5,000 tubes of CHX procured won't get very far in a state with 300,000 births/year) • If the objective is to ensure that supply met demand, the manufacturing side was not the limiting factor. The limiting factor was that demand was too low for private suppliers to buy CHX wholesale and place in their outlets. On the public and program side, the limiting factor was just lack of funding for procurements. • Need to track on outlet-by-outlet basis
No unified M&E system to track progress against key milestones & optimize as needed	Leadership	• Finalize M&E responsibilities in ToR for uptake coordinator & coordinating mechanism with input from partners to	• Newborn Sub-Committee	• Dashboard was never developed, and the Newborn Sub-Committee never met and did not take responsibility for managing the scale-up effort

		ensure that the dashboard accurately reflects the most important indicators		
	M&E plan	• Launch dashboard using M&E plan from strategy and update every six months for metrics requiring collection with this frequency • Conduct a comprehensive learning review each quarter to revisit data and course-correct strategy based on findings; this ensures continuous iteration and improvement based on progress to date • Advocate for inclusion of CHX-related indicators in national HMIS, community-based HMIS, DHIS, and surveys such as NDHS etc... (CHX has been added to MICS) • Support implementation research to create additional evidence for policy-making	• Uptake coordinator	• See above regarding the dashboard and learning review • For HMIS, see dossier. MCSP and Olayinka put a lot of effort into advocating for CHX indicator in the next HMIS update
	Targets	• Build consensus and approve targets from implementation plan • Track progress against targets and update targets, as needed, during each quarterly review, especially if phasing or resourcing shifts	• Uptake coordinator	• Kogi and Ebonyi both created state level plans and they developed targets as part of their plans • Tracking implementation of the plan occurred in Kogi where the state had agreed to establish a scale-up management team. Need to track on state-by-state basis