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# Scaling Up Chlorhexidine Cord Care for Newborns in Liberia

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## Background

USAID's flagship Maternal and Child Survival Program (MCSP) works with the Ministry of Health (MOH) in Liberia to improve the delivery of quality maternal, newborn, and child health services, and restore confidence in the health system following the Ebola outbreak. MCSP has supported 77 health facilities in three counties—Nimba (30), Lofa (17), and Grand Bassa (30)—and worked at the national level to support coordination and development of policy and strategy documents. One of MCSP's areas of focus is newborn health.

In 2013, the newborn mortality rate in Liberia was 26 per 1,000 live births,<sup>1</sup> and 28% of deaths were caused by severe infections.<sup>2</sup> Sepsis in newborns is caused in part by improper cord care. In Liberia, caregivers at home often put traditional herbs on the umbilical cord, increasing the risk of infection. In facilities, dry cord care is the norm. To address this issue, the MOH adopted a national policy in 2013 stating that chlorhexidine (CHX) should be applied to the newborn's umbilical stump for all deliveries. The MOH, the USAID Maternal and Child Health Integrated Program, and the United Nations Commission on Life-Saving Commodities supported pilot implementation of CHX in health facilities in seven counties in 2013–2014, but the pilot process was halted as a result of the Ebola epidemic. After the epidemic subsided, some health facilities were still implementing the use of CHX, but there were reported incidents of misapplication with harmful consequences; CHX was not readily available in most facilities; and information, education, and communication materials to support the use of CHX were not available in facilities.

Starting in 2015, MCSP supported the MOH and other partners to reinstitute and scale up CHX use throughout the country by developing a national plan for scale-up, conducting trainings for health workers, providing supportive supervision in health facilities, ensuring adequate CHX supply, and monitoring uptake.



A health worker shows this mother how to apply chlorhexidine gel to the cord site to prevent newborn sepsis.

Photo credit: Sarah Hodge/MCSP.

<sup>1</sup> Liberia Institute of Statistics and Geo-Information Services (LISGIS), Ministry of Health and Social Welfare [Liberia], National AIDS Control Program [Liberia], ICF International. 2014. *Liberia Demographic and Health Survey 2013*. Monrovia, Liberia: LISGIS and ICF International.

<sup>2</sup> UNICEF. Anthony D, Mullerbeck E, eds. 2012. *Committing to Child Survival: A Promise Renewed Progress Report 2012*. New York City: UNICEF.

# Developing the Chlorhexidine Cord Care National Scale-Up Plan (2017–2021)

MCSP collaborated with the global CHX Working Group<sup>3</sup> to help the MOH develop an initial draft of the Liberia CHX Cord Care National Scale-Up Plan. MCSP then followed up with the MOH, which worked through the national Reproductive Health Technical Committee (RHTC), UNICEF, the World Health Organization, and other partners and stakeholders to form the national Newborn and Child Health Technical Working Group to finalize the country's CHX scale-up plan. The MOH convened a validation workshop in June 2017, which was co-facilitated by MOH and MCSP staff, including an MCSP Nigeria staff member who had experience in supporting CHX scale-up in her home country.

The MOH made the decision to universally scale up CHX over a 5-year period (2017–2021), with a phased rollout in all counties (to facilities in 2017–2018, adding community distribution in 2019). The plan states the goal of this process:

**"By the end of 2018, 75% of all newborns delivered in health facilities (both public and private) will receive chlorhexidine. Starting in 2019, chlorhexidine will be expanded to those delivering at home so that by the end of 2021, 85% of all newborns (delivered in both health facilities and at home) will receive chlorhexidine cord care."**

To achieve the goal, stakeholders ensured that the strategy follows these important principles:

- **Multichannel:** Promotes the use of CHX through formal health and community settings. Supplies CHX through public and private delivery channels.
- **Integrated:** Integrates the distribution of and counseling for CHX cord care into existing maternal, newborn, and child health programs and product supply chains, and the full continuum of care for the newborn.
- **Government-led:** Ensures that the MOH leads coordination of donors, development partners, and professional associations in driving the strategy.
- **Sustained through well-established demand for CHX:** Builds a sustainable demand for CHX among health workers and community members.
- **Evidence generating:** Is based on the evidence generated locally, regionally, and globally on impact and cost-effectiveness.



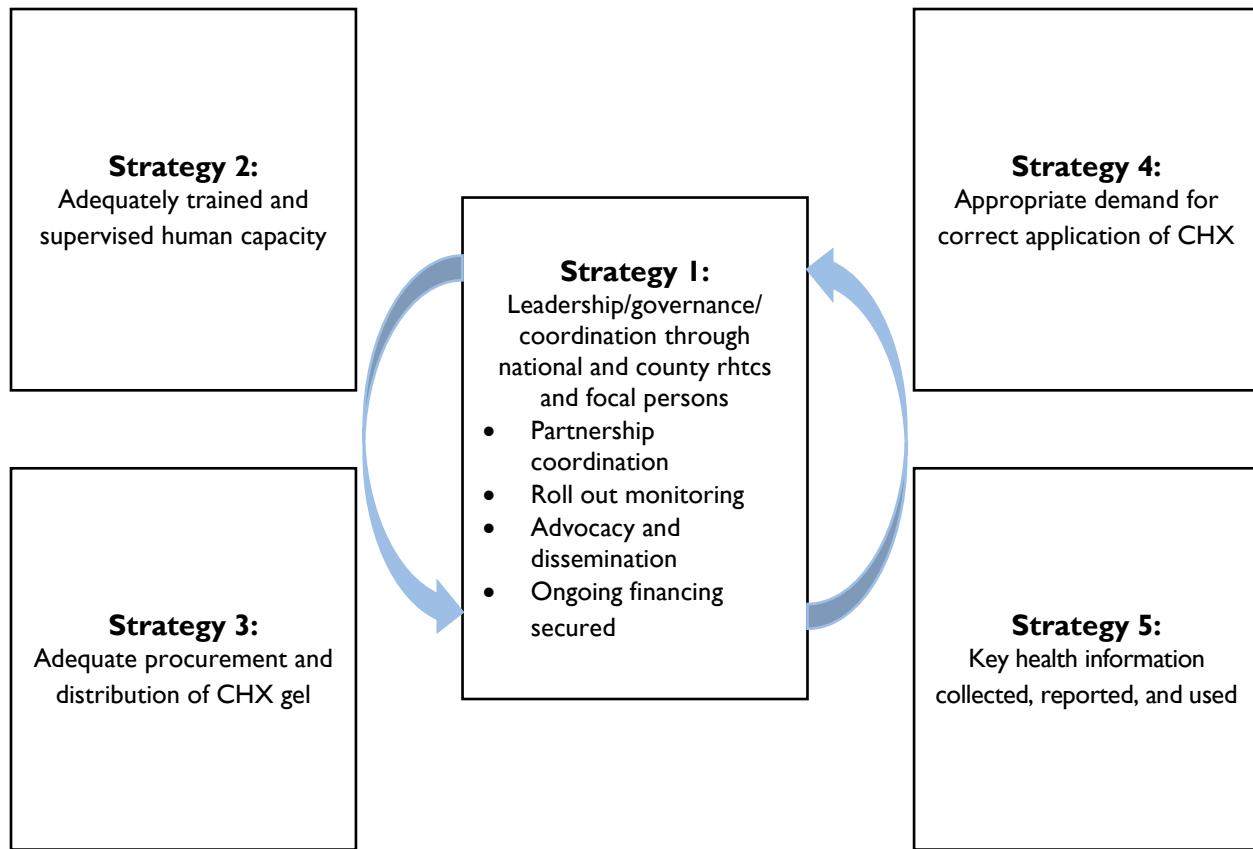
Sarah Hodge demonstrates application of chlorhexidine at the June 2017 national validation workshop, co-facilitated by Dr. Olayinka Umar-Farouk of MCSP Nigeria. Photo credit: Jim Ricca/MCSP.

Part of the plan was to agree on which partners would take the lead in supporting rollout in each county, beginning in the latter half of 2017. MCSP supported rollout in 77 health facilities in Lofa, Nimba, and Grand Bassa (48% of all facilities in these counties).

The Fixed Amount Reimbursement Agreement supports the remainder of the facilities in these same three counties. UNICEF supports six southeastern counties through local implementing partners. The other six counties are supported by other partners. The plan includes five strategies as shown in **Figure 1**.

<sup>3</sup> The CHX Working Group (CWG) is an international collaboration of organizations committed to advancing the use of 7.1% CHX digluconate (delivering 4% CHX) for umbilical cord care through advocacy and technical assistance. PATH serves as the secretariat of the CWG.

**Figure 1. Five primary strategies in Liberia's National Scale-Up Plan for Chlorhexidine Cord Care**



Source: Liberia Chlorhexidine Cord Care National Scale-Up Plan (2017–2021)

## Implementing the National Scale-Up Plan

### National Plan Strategy 1: Strengthen Leadership, Governance, and Coordination for Chlorhexidine Scale-Up

The MOH's Family Health Division leads CHX scale-up at the national level, coordinating partners through the RHTC. Existing county health teams (CHTs) manage scale-up at the county level with a designated focal person in each. At the district and facility level, specific officers and supervisors are tasked with scale-up management. Thus, pre-existing structures and managers are empowered to facilitate and provide technical support for CHX scale-up with logistical and technical assistance from the RHTC.

### National Plan Strategy 2: Ensure Adequately Trained and Supervised Human Capacity

UNICEF, in collaboration with the Family Health Division and partners, conducted a 1-day training of trainers for county-level supervisors from the 15 counties on CHX cord care in May 2017, using training standard operating procedures developed in Nepal. MCSP made adaptations to UNICEF's training materials that were later endorsed by the MOH for use at the county and health facility levels. As part of partner-led trainings in the counties, in August–September 2017, MCSP conducted a full-day training on CHX cord care in each of the project's three supported counties for supervisors from the district health teams, CHTs, and comprehensive emergency obstetric and newborn care health facilities. The trainings covered refreshers on essential newborn care, evidence for CHX cord care effectiveness, and methods for counseling mothers or caretakers on its use and how to avoid misapplication.

Trainers also demonstrated CHX application and recordkeeping for effective monitoring and evaluation of CHX cord care practices. Following the supervisor training, MCSP supported facility-level orientation of staff in the 77 health facilities. The orientations were delivered to clinicians and nonclinicians so that everyone working in the facility could provide accurate information on CHX use in the facilities and their own communities. Training sessions were done through presentations, questions and answers, and demonstration and practice (with the latter exclusively for clinicians). MCSP also distributed counseling job aids for health workers and caregivers through the collaboration with UNICEF.

### National Plan Strategy 3: Ensure Adequate Procurement and Distribution

UNICEF procured the first batch of 200,000 tubes of 7.1% CHX gel in late 2016, sufficient for the first 2 years of the national rollout. MCSP worked with health facility staff, CHTs, and the MOH to ensure that CHX was available in the MCSP-supported facilities, including by providing technical assistance to health facilities to forecast and submit quarterly requisitions for the product based on their number of deliveries and targets. These requisitions were sent to the counties for compilation and then forwarded to the supply chain unit of the MOH for distribution through the Central Medical Stores. Although initial distribution was done through parallel mechanisms, UNICEF and MCSP worked with the MOH to ensure integration of the distribution through routine mechanisms in the future.

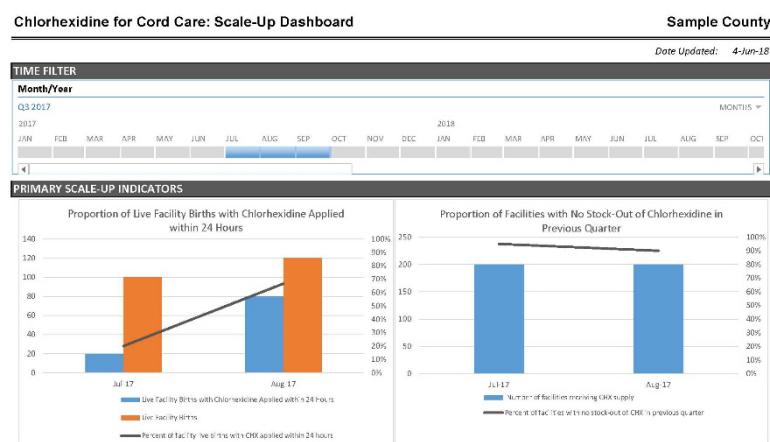
### National Plan Strategy 4: Ensure Correct Application of Chlorhexidine, Starting at Health Facilities

MCSP and other partners worked with the MOH to provide monthly supportive supervision, mentoring, and coaching to staff in health facilities to ensure that CHX cord care is provided appropriately. This support was also provided to ensure that health facility staff counsel mothers and caregivers by demonstrating application and providing information on when to apply the drug, how to record application, and other key aspects of CHX use to reduce misapplication of the drug. Standards for CHX cord care will be included in the national Joint Integrated Supportive Supervision tool during its next revision. In addition, messages on proper application and avoiding misapplication of CHX will be delivered to mothers, caregivers, and the community through community health workers (CHWs) and media outlets.

### National Plan Strategy 5: Develop Systems to Monitor Chlorhexidine Cord Care Use at All Levels

MCSP worked with the MOH to develop a plan outlining monitoring strategies and approaches for the national CHX scale-up plan. MCSP successfully advocated for the inclusion and update of the CHX indicator in the national health management information system to disaggregate first application within versus after 24 hours from birth. The indicator was rolled out nationwide in October 2017, providing monthly national data for the first time ever for this lifesaving intervention. MCSP also developed and rolled out facility-level wall charts to monitor the coverage of CHX using the indicator. In addition, MCSP developed a dashboard for use by county- and national-level scale-up teams to monitor the progress and outcomes of CHX scale-up. Use of routine data and targeted special data collection will inform MOH efforts to expand and strengthen the use of CHX nationwide to save newborn lives.

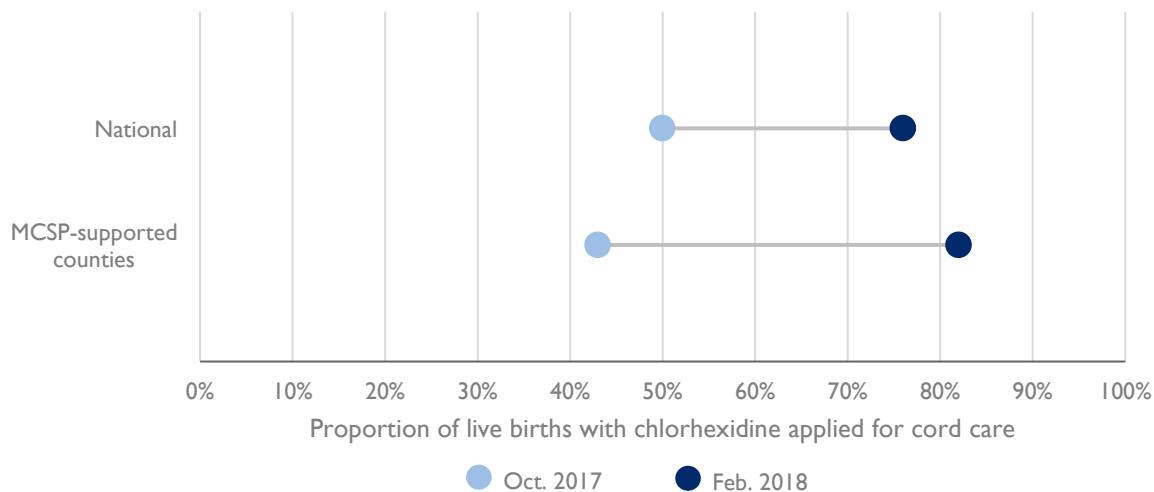
**Figure 2. Dashboard template developed by MCSP for chlorhexidine monitoring at the county and national levels**



## Results

The effectiveness of the national CHX scale-up plan was borne out by the rapid rollout and large increase in facility-based coverage. Implementation of the national plan began in mid-2017, and most health facilities received CHX gel in October 2017 and completed their orientations by late 2017. From October 2017 (when the indicator for initial application was introduced) to February 2018, the reported facility-based coverage almost doubled across all facilities in the three MCSP-supported counties. More importantly, coverage has increased nationally from 50% to 76% during that time (see graph below). Although there are ongoing data quality issues that MCSP works on with the MOH, it appears that Liberia has already achieved its target of 75% nationwide facility coverage by the end of 2018. As Liberia prepares to extend this lifesaving intervention to the community setting in 2019 according to its national plan, it is on track through CHX scale-up to contribute to a 9% decrease in newborn mortality and save over 700 newborn lives.<sup>4</sup>

**Figure 3. Application of chlorhexidine for facility births since introduction of the indicator in October 2017<sup>5</sup>**



## Lessons Learned and Recommendations

- Coordination and management of the scale-up plan at all levels (health facility, county, and national) are critical for the successful implementation of the plan. To make gains sustainable, the MOH needs to ensure that coordinating bodies meet regularly and discuss achievements, challenges, and needed adjustments to plans and seek ongoing financing.
- The second phase of the national plan, to begin in early 2019, calls for expansion to newborns whose mothers give birth at home. Given the large fraction of women delivering at home, this community component will be crucial for Liberia to achieve substantial health impact from use of CHX. As planned, this community component must include social and behavior change communication for caregivers and the community on CHX use delivered through existing mechanisms, like CHWs and media outlets.

<sup>4</sup> LiST calculation performed by MCSP using LiST v5.67. Using the results of the recent meta-analysis of CHX effectiveness (Sankar MJ, Chandrasekaran A, Ravindranath A, Agarwal R, Paul VK. 2016, Umbilical cord cleansing with chlorhexidine in neonates: a systematic review, *J Perinatol.* 36 Suppl 1:S12–20. doi: 10.1038/jp.2016.28.), the effectiveness of CHX in preventing deaths from neonatal sepsis was updated in LiST to 95% for home births and negligible for facility births. It was assumed that in post-Ebola Liberia, about 50% of births were home births, giving a weighted overall effectiveness of CHX of against neonatal sepsis of 48%.

<sup>5</sup> The figures presented may overestimate the percentage of facility births where CHX was applied, as CHX applications are calculated as a proportion of all live facility births, but CHX is also given to babies born at home who visit the facility for immediate postnatal care.

- To ensure effective scale-up, continuing efforts should ensure coordination between the community and facility levels to support caregivers in their use of CHX. This coordination should include more deliberate engagement with trained traditional midwives and CHWs.
- The indicator for CHX application is now in all postnatal care ledgers and reported through the health management information system, which gives a clearer picture of progress. The MOH and partners must continue to provide trainings and supportive supervision on measurement and data use to manage data quality issues and ensure that those managing CHX scale-up regularly examine and act on data. In addition, the indicator for CHX application should be included in the labor and delivery ledger and in registers used by CHWs.
- To sustain progress made in CHX cord care, the MOH needs to forecast its ongoing needs and procure CHX gel for 2019 and beyond, a process that is not yet complete. Planning is underway for another round of procurement, which needs to happen rapidly to ensure uninterrupted supply.

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