

Nepal Scale up Chlorhexidine as Part of Essential Newborn Care: Country Experience

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ABSTRACT

Chlorhexidine is a broad-spectrum antiseptic, effective on gram positive and gram negative bacteria as well as some viruses, having strong skin binding effect. Randomized controlled trials conducted in South Asian countries have proven that the use of chlorhexidine (4% weight/weight) for cord care can reduce neonatal mortality and prevent severe cord infections. Between 2011 and 2017, Nepal completed nationwide scale-up of the use of chlorhexidine by integrating with ongoing maternal and neonatal health programs, under the leadership of the Child Health Division. The chlorhexidine coverage and compliance study (2017) has revealed that the country has achieved 59% coverage of the intervention to date, with lowest use among home births. The strategy should be further strengthened to ensure that every newborn in need is reached with chlorhexidine.

Keywords: Chlorhexidine; cord care; Nepal experience, Newborn.

INTRODUCTION

Over 2.1 million Nepalese babies have received chlorhexidine for cord care saving 9,600 lives.^{1,2} Chlorhexidine is a low-cost compound with broad-spectrum antiseptic effectiveness on gram positive and gram negative bacteria, as well as some viruses. It has a strong skin binding effect that results in long residual effect. The government of Nepal has made chlorhexidine service available for all births, irrespective of place. The intervention has been successful in averting thousands of newborn deaths in Nepal as of November 2017.² This achievement is possible because of the Government of Nepal (GoN) leadership for the program and a scale-up approach that relied heavily on integration with ongoing public health programs.

TRANSITION FROM IDEA TO NATIONWIDE SCALE-UP THROUGH INTEGRATION

Randomized controlled trials on the use of chlorhexidine (4% weight/weight) for cord care were conducted in Nepal, Bangladesh, and Pakistan in between 2002-2011. The pooled analysis of those three randomized controlled trials showed that chlorhexidine can reduce neonatal mortality by 23% and prevent severe infection by 68%.³ Considering the randomized controlled trial findings in Nepal, the GoN and partners decided to explore the opportunities to implement this intervention, in the context of stagnant neonatal mortality rate in two

consecutive demographic and health survey periods.^{4,5}

To translate the *idea* into *action*, the chlorhexidine technical working group (TWG) was formed in 2008 under the leadership of the Family Health Division of Department of Health Services and supported by other government divisions and centers, external development partners, a local pharmaceutical company, professional societies, and academia. The TWG was responsible for overseeing the program in all phases of implementation from pilot to scale-up. This group contributed to advocacy in various platforms, supported research for chlorhexidine acceptability and scale-up, chlorhexidine program implementation guidelines and training manuals development, integrating messages in the capacity building documents and curricula, policies, and programs. It also monitored the implementation regularly and provided feedback to the implementers periodically.

Nepal conducted a hospital-based gel versus aqueous non-inferiority trial and a community-based acceptability study on “gel versus aqueous” form of chlorhexidine. The findings of the two studies recommended the use of chlorhexidine gel formulation.⁶ Nepal adopted a onetime application policy of chlorhexidine (3grams). A pilot study was done in four districts (Bajhang, Banke, Jumla, and Parsa), with the objective of determining the coverage and compliance of chlorhexidine use by integrating it with the ongoing national maternal and

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neonatal health programs. The pilot study in 2009-10 proved that high coverage of chlorhexidine use is possible through intervention integration with the national ongoing national public health programs⁷.

In 2011, the GoN endorsed the national scale-up of chlorhexidine use for neonates cord care through integration with the ongoing maternal and newborn health programs. In the same year, chlorhexidine was included in the national essential drug list.

Considering the long-term program sustainability, chlorhexidine intervention was always implemented with ongoing programs such as the community based newborn care program and community based maternal and newborn health programs⁷. The GoN has identified

five essential newborn care messages and chlorhexidine for cord care was integrated into these messages. Previously the message related to cord care was “apply nothing on the cord, keep it dry” and after integration, the message was revised to “apply chlorhexidine and keep it clean and dry”⁸. The use of chlorhexidine for cord care has been fully institutionalized in the government system. Use of chlorhexidine for cord care is in the government policy, in-service and pre-service training curricula of health cadres, routine information systems, essential drug list, national procurement system and nationally representative household and health facility surveys. The figure below attached depicts the timeline of chlorhexidine for cord care integration areas and period.

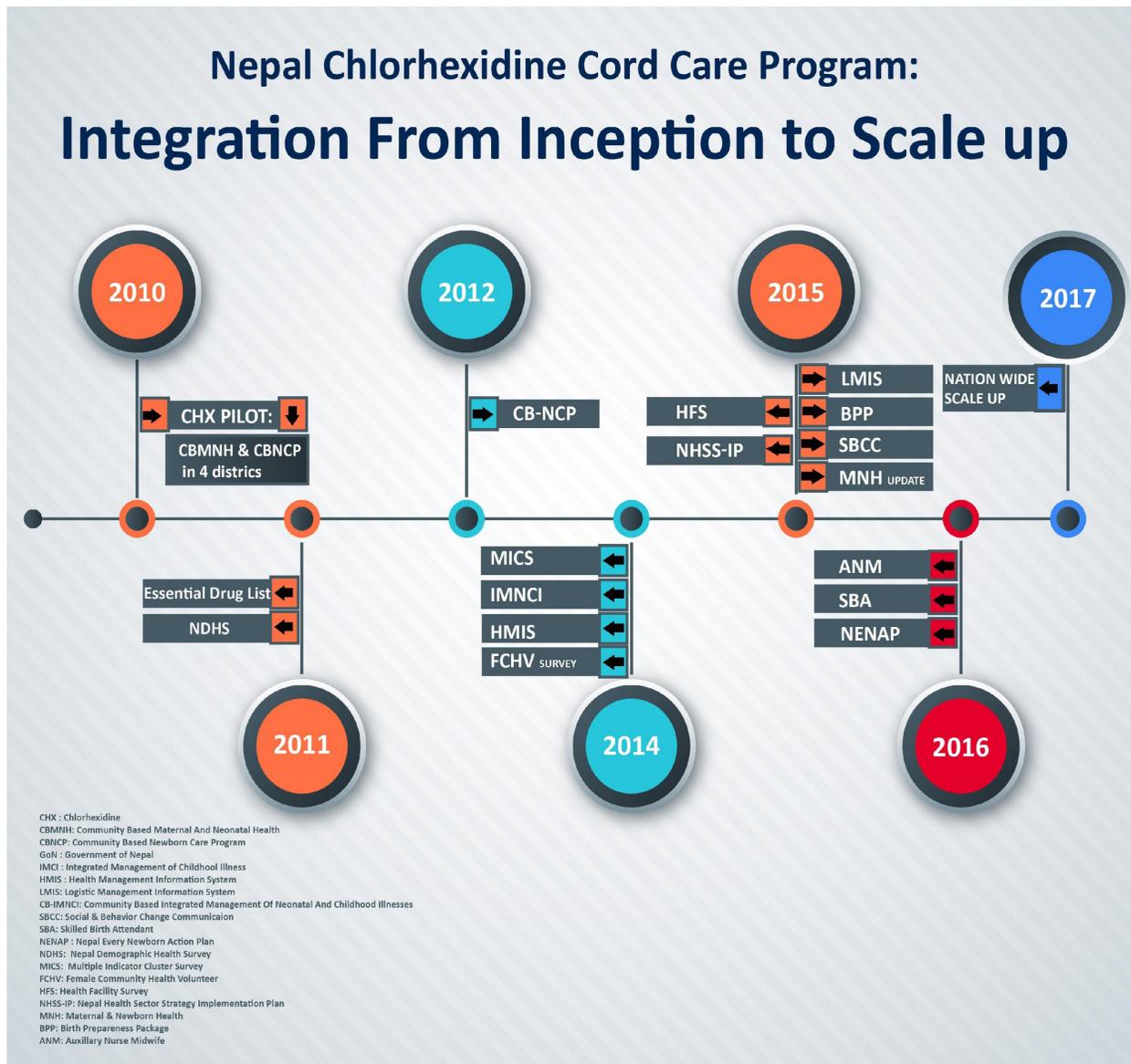


Figure 1. Chlorhexidine integration into existing government systems.

Female Community Health Volunteers (FCHVs) distribute chlorhexidine to pregnant women during the eighth month of pregnancy. Those women who cannot be reached by FCHVs receive chlorhexidine gel from a health facility during antenatal care. If the baby is born at a government birthing center or private hospital implementing this intervention (now about 100 private hospitals, including medical colleges), health workers attending the delivery apply chlorhexidine to the newborn's umbilical cord. For home births, the mother or family member or FCHVs/ health worker (if present at the time of delivery) applies chlorhexidine to the newborn's umbilical cord⁸. By the end of 2017, the program has been scaled up throughout the country. According to the chlorhexidine coverage and compliance survey 2017, the national chlorhexidine use coverage was 59% while only 20% women had received Chlorhexidine gel during pregnancy. Similarly, the use of chlorhexidine is lower in home birth babies (33%) compared to facility births babies (69%). A significant proportion(23%) of women delivered at health institutions were not aware about chlorhexidine application in their babies umbilical cord.⁹

CONCLUSIONS

Nepal's experience shows that chlorhexidine can be integrated successfully into the health system at scale, and serves as a testament to other countries with high neonatal mortality seeking to introduce and scale up this life-saving innovation. The government now has the responsibility to sustain the coverage, even in the absence of supporting external development partners, by maintaining the required stock, the functional distribution mechanism not only to the health facilities, but to all pregnant women, and improving the communication between the service providers (health workers and FCHVs) and the mothers and their families.

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