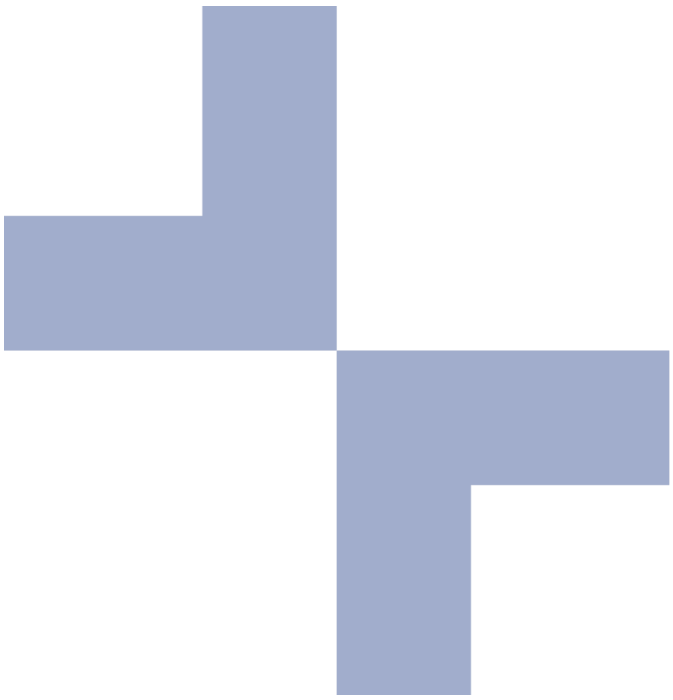
Scaling up Chlorhexidine for Newborn Cord Care in Pakistan

Private health sector landscape and strategy



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About SHOPS Plus: Sustaining Health Outcomes through the Private Sector (SHOPS) Plus is USAID's flagship initiative in private sector health. The project seeks to harness the full potential of the private sector and catalyze public-private engagement to improve health outcomes in family planning, HIV/AIDS, maternal and child health, and other health areas. SHOPS Plus supports the achievement of US government priorities, including preventing child and maternal deaths, an AIDS-free generation, and supporting the goals of FP2020. The project improves the equity and quality of the total health system, accelerating progress toward universal health coverage.

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Acronyms

CHX	Chlorhexidine digluconate
CRP	Community resource person
DPIU	District Program Implementation Unit
DRAP	Drug Regulatory Authority of Pakistan
FATA	Federally Administered Tribal Areas
HSSP	Health Systems Strengthening Project
IEC	Information, education, and communication
IHSS-SD	Integrated Health Systems Strengthening – Service Delivery project
IP	Implementing partners
JSI	John Snow, Inc.
KP	Khyber Pakhtunkhwa
LHV	Lady health visitor
LHW	Lady health worker
MEL	Monitoring, evaluation, and learning
MoNHSR&C	Federal Ministry of National Health Services, Regulation, and Coordination
NCMNH	National Committee for Maternal, Newborn, and Child Health
NGO	Non-governmental organization
PDHS	Pakistan Demographic and Health Survey
PIMS	Pakistan Institute for Medical Sciences
PPA	Pakistan Pediatric Association
PQM	Promoting the Quality of Medicines program
PSA	Public service announcement
RSPN	Rural Support Programmes Network
SBA	Skilled birth attendant
SBCC	Social and behavior change communication
SHOPS Plus	Sustaining Health Outcomes through the Private Sector Plus project
SOGP	Society of Obstetrician-Gynecologists of Pakistan

TWG	Technical working group
USAID	United States Agency for International Development
USP	US Pharmacopeia
WHO	World Health Organization

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1. Introduction

Results from the Pakistan Demographic and Health Survey 2017-18 (PDHS 2017-18) indicate that the neonatal mortality rate is 42 per 1000 live births, suggesting that roughly 260,000 children die in the first 28 days of life each year (ICF 2018). In 2015, neonatal sepsis was the third leading cause of neonatal mortality in Pakistan, accounting for 17 percent of deaths among newborns (UNICEF 2016). Umbilical cord infection (omphalitis) is a risk factor for neonatal sepsis and mortality in low-resource settings where home deliveries are common (Imdad et al. 2013). Across Pakistan, an estimated 34 percent of deliveries take place at home, and a home birth is far more likely in rural communities (41 percent) than urban ones (19 percent). There are also clear regional disparities for both indicators, with mothers in Balochistan most likely to give birth at home without a skilled attendant (PDHS 2017-18).

Evidence from Pakistan and the surrounding region shows that ensuring optimal cord care at birth and in the first week of life is a crucial strategy to prevent life-threatening sepsis and avert preventable neonatal deaths (WHO 2013). Chlorhexidine digluconate (CHX) is a low-cost antiseptic that is effective against major causes of neonatal infection. Recent community-level randomized controlled trials in Nepal, Pakistan, and Bangladesh found that applying 7.1% CHX to the umbilical cord saves lives, especially among newborns delivered in home settings with high neonatal mortality rates. Across the three countries, data from 54,000 newborns showed an aggregate 23 percent reduction in neonatal mortality, excluding deaths in the first few hours of life, and a 68 percent reduction in severe infections for the CHX intervention groups (United Nations Population Fund 2012). A randomized control trial in rural areas of Sindh further showed that applying CHX was effective in reducing the risk of omphalitis and neonatal mortality in rural Pakistan and suggested that the provision of CHX in birth kits might be a useful strategy for preventing neonatal mortality in high-mortality settings (Soofi et al. 2012).

Given the promising results linking CHX uptake with improved neonatal health outcomes, the World Health Organization (WHO) added CHX to its Model List of Essential Medicines for Children in 2014 and issued new guidelines on proper umbilical cord care (Healthy Newborn Network). The new guidelines called for daily application of CHX to the umbilical cord stump during the first week of life for babies born at home in settings with a neonatal mortality rate higher than 30 per 1000 live births (WHO 2013). In response to these findings, Mercy Corps initiated advocacy efforts to launch CHX in Pakistan, PATH analyzed the feasibility of producing the product locally, and a National CHX Technical Working Group (TWG) was established in late 2014.

In the last three years, stakeholders have made considerable progress in introducing CHX in the public sector and providing CHX through the public health system. In 2015, Pakistan's Federal Ministry of National Health Services, Regulation, and Coordination (MoNHSR&C) formally endorsed a policy calling for the use of CHX for newborn cord care at both facility- and community-based births as part of a package of essential newborn care services to reduce neonatal mortality. That same year, the Health Systems Strengthening Project (HSSP), implemented by John Snow, Inc. (JSI) and funded by the United States Agency for International Development (USAID), proposed a series of strategies to help the MoNHSR&C and implementing partners (IP) strengthen their coordination mechanisms and accelerate the rapid scaling of CHX use nationwide. JSI assumed responsibility for overall coordination of the strategy and facilitated a national consultative process to develop standard treatment guidelines, uniform training materials and monitoring and evaluation indicators, and a social and behavior change communication (SBCC) strategy for CHX promotion through community- and

facility-based health care providers. Participants, including UNICEF, WHO, MCHIP, Mercy Corps, JSI, and provincial health leadership, developed national- and provincial-level scale up plans. Each member focused on specific jump start districts within assigned provinces in which to support roll-out efforts in the public sector.

At the same time, the Pakistan Institute for Medical Sciences (PIMS) established a Center of Excellence for CHX training. PIMS initially supported the training of 13 provincial master trainers and 35 PIMS master trainers to roll out CHX training to public sector providers. Centers of Excellence with master trainers are now available in each province. USAID donated 2.1 million CHX tubes, manufactured by Nepal-based Lomus Pharmaceuticals, to support implementation until local production could begin. MCHIP imported a further 550,000 tubes for sixteen priority districts in Sindh. By 2017, nearly all of the donated CHX was distributed to district health offices which passed the product on to public sector health providers based on average patient loads.

The private sector plays a critical role in ensuring access to key health services, including deliveries and neonatal care. Private facilities are often closer to their clients and more reliable than public facilities, with perceived higher quality of care.[1] Nationwide, 66 percent of births take place in a health facility: 22 percent in a public facility, and 44 percent in a private facility (PDHS 2017-18). In Sindh, for example, the greatest proportion of deliveries (52 percent) occurred in private sector facilities. Despite their critical role, private sector providers were excluded from the first phase of CHX roll-out. Implementers opted to wait until local manufacturing began and could ensure a continuous and sufficient supply of CHX before generating demand within the private sector. With support from US Pharmacopeia (USP), four local manufacturers successfully registered and gained approval to produce CHX for newborn cord care. Local manufacturing began in October 2017, with four CHX gels currently in the market: Sepidyl, Umbilica, Loxidin, and Cordiclean produced by Aspin Pharma, Atco Laboratories, Akhai Pharmaceuticals, and Zafa Pharmaceuticals, respectively.

With locally manufactured CHX now widely available, the USAID-funded Sustaining Health Outcomes through the Private Sector (SHOPS) Plus project was charged with supporting a second phase of product introduction targeting the private health sector. To inform the strategy, SHOPS Plus conducted a landscape assessment of the CHX market in two phases. First, the project completed a preliminary, rapid assessment of the CHX market in Sindh as part of a larger assessment on the provision and use of oral rehydration solution and zinc for pediatric diarrhea. Following the rapid assessment, SHOPS Plus completed a more detailed analysis through desk review, including an analysis of PDHS data, and key informant interviews with stakeholders in Islamabad and Karachi. Key informants included local CHX manufacturers, public and private sector health providers, private pharmacists, leaders of relevant provider associations, CHX TWG members, social franchises and social marketing organizations, non-governmental organizations (NGO), MoNHSR&C, and the Drug Regulatory Authority of Pakistan (DRAP). Annex A provides the list of stakeholders interviewed and Annex B provides the list of pharmacies visited.

This report summarizes key findings from both the rapid and detailed landscape assessment. Section 2 provides a situational analysis of the current CHX landscape, including an overview of current and potential initiatives by the public, commercial, and civil society sectors. Section 3 outlines a detailed strategy with specific activities to support scaling CHX in Pakistan through a total market lens. The section culminates in a proposed monitoring, evaluation, and learning

[1] Basu et al. (2012) and Irfan and Ijaz (2011) found that in low- and middle-income countries, including Pakistan, clients are more likely to score private sector providers higher than public sector providers on parameters of access and responsiveness (i.e. perceived quality parameters), and lower on objective quality parameters such as comprehensiveness of services and accuracy of diagnosis.

(MEL) strategy with illustrative indicators. The private sector strategy described here is not intended to be a stand-alone strategy. Rather, it is intended for integration with existing provincial strategies to ensure approaches are comprehensive and multi-sectoral. The report reflects comments and responses generated from participants during a presentation to validate findings at a CHX TWG meeting held December 27, 2018. See Annex C for a summary of the TWG meeting and Annex D for the presentation of findings.

2. Situational Analysis

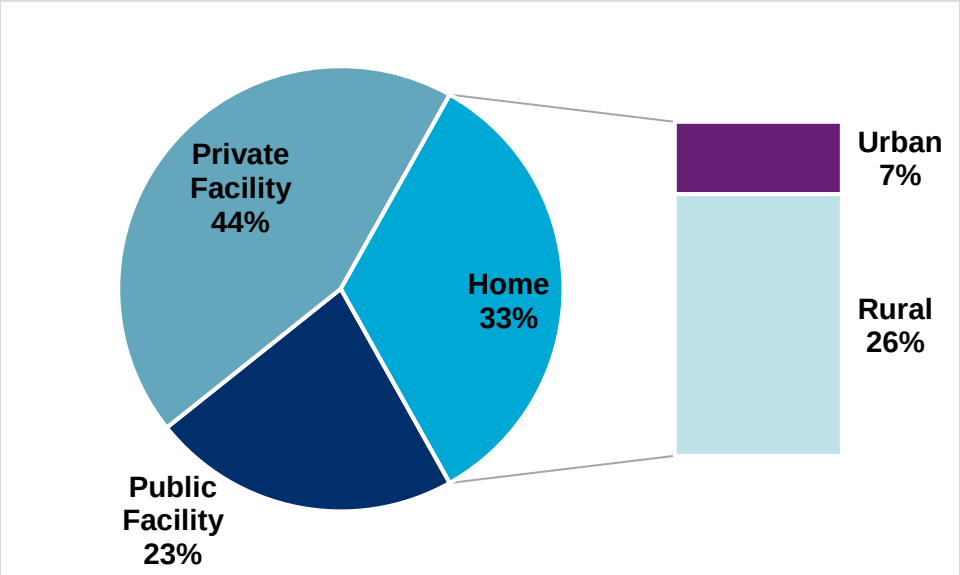
SHOPS Plus analyzed recent PDHS data and met with stakeholders from the public, commercial, and not-for-profit sectors to better understand the CHX policy environment, current and potential supply chain of CHX from manufacturer to end-user, and current and planned activities to increase the knowledge and practices of mothers and providers with regard to using CHX for newborn cord care. Interviews were limited to stakeholders in Islamabad and Karachi. SHOPS Plus focused analysis on these geographic areas for a variety of reasons, including security concerns and the fact that most IPs and pharmaceutical manufactures leading efforts to produce and scale CHX are based in these cities. The goal of these analyses is to better understand the opportunities and challenges to scaling up CHX in the private sector to inform a private sector CHX strategy that closely aligns with existing public sector strategies and takes the whole market into consideration.

2.1 Delivery landscape

Based on a combination of crude birth rates and the distribution of births by type of facility reported in PDHS 2017-18, as well as the 2017 population census, SHOPS Plus estimated that 6.02 million babies are born in Pakistan each year (PDHS 2017-18, Pakistan Bureau of Statistics 2017). The estimates also show that roughly 2,030,000 (34 percent) of those births take place at home. Of those, approximately 1.6 million take place in rural communities and 440,000 occur in urban communities. An additional 2.6 million babies (44 percent) are born in a private health facility with the remaining 1.4 million (22 percent) delivered in a public health facility (Figure 1). The distribution of deliveries varies widely by province. More than half of all births occur in Punjab. Another 23 percent of births take place in Sindh, with roughly 16 percent in Khyber Pakhtunkhwa (KP) province. Annex E provides the annual number and proportion of births estimated by location and province.

These data underscore the importance of engaging the private sector to scale up CHX; ensure it reduces neonatal deaths; and ensure that CHX commodity requirements are large enough to maintain the manufacturers' interest in continuing domestic production. The combined efforts of both public and private providers are needed to reach households where births occur at home. Such households are predominantly rural and account for more than two million births annually. Private facilities are the most common delivery location and account for more than two and a half million births annually. Use of CHX in these facilities can play a critical role in reducing neonatal deaths.

Figure 1. Distribution of births by facility type per annum



Sources: PDHS 2017-18, Pakistan Bureau of Statistics 2017

Private healthcare facilities are primarily located in urban areas. As in many other low- and middle-income countries, private facilities vary in terms of size and the qualifications of their staff. Extrapolating from a census of private facilities, the Population Council estimates that there are nearly 14,500 private facilities in the three provinces where the most births take place each year: Punjab, Sindh, and KP (Population Council 2016). Table 1 summarizes the estimated number of private facilities by type in those provinces. Importantly, the report categorizes these facilities into hospitals, which are large and more likely to be visited by medical representatives of commercial pharmaceutical companies, medium-sized clinics with female doctors, and smaller clinics managed by female doctors, lady health visitors (LHV), nurses, and midwives. This suggests a need for a multi-pronged strategy with tailored interventions that specifically target each facility type.

Table 1. Estimated number of private facilities where births occur

Facility type	Estimated number of facilities
Hospital	4,500
Female doctor clinics	5,500
Lady health visitor, nurse, midwife clinics	4,500
Total	14,500

Source: Population Council 2016

2.2 Public sector landscape

The MoNHSR&C is aware of global recommendations on CHX for newborn cord care and has adopted evidence-based best practices similar to those used in other countries for reducing neonatal mortality. They have specifically adopted practices and materials developed by the Government of Nepal. In April 2015, HSSP submitted a concept paper entitled "Support to the Federal and Provincial Governments of Pakistan for Improving Coordination and Scale Up Strategy for CHX." The paper outlined a series of activities to assist the MoNHSR&C and IPs to strengthen their coordination mechanisms and accelerate steps for rapidly scaling CHX use nationwide. In July 2015, the MoNHSR&C issued a formal notification outlining recommendations on the use of CHX to prevent umbilical cord and neonatal sepsis. Specifically, the notification provided the following guidance:

- All newborn babies should have CHX applied on the umbilical cord within 24 hours of birth, regardless of place of birth or mode of delivery;
- CHX should be applied once daily for seven days after birth or until cord separation;
- The person applying CHX must follow standard hand washing recommendations;
- Mothers must be properly educated not to apply anything else to the cord other than CHX;
- Mothers should immediately contact a lady health worker (LHW) or provider if any signs of infection appear; and
- Provincial Departments of Health will ensure the distribution of CHX to all pregnant women, preferably in the third trimester (Government of Pakistan 2015).

Following the directive, key stakeholders convened a national workshop to discuss standardizing: CHX training manuals; job aids; information, education, and communication (IEC) and SBCC materials; indicators and monitoring and evaluation tools; and a reporting mechanism. The workshop also focused on developing a national action plan to scale CHX for newborn cord care. The consultation resulted in the formation of four technical groups focused on standardizing training materials; developing standardized monitoring indicators; developing SBCC materials; and addressing local production (John Snow Inc. 2015). DRAP and USP served as critical partners in the latter working group. Each held sub-meetings to move the agenda forward.

In May 2016, the MoNHSR&C formally endorsed a training manual designed to build the capacity of skilled birth attendants (SBA) and LHW to apply CHX immediately after cord cutting. The standardized training covers causes of neonatal mortality in Pakistan, the importance and proper application of CHX, and the national environment, such as policy recommendations, distribution mechanisms, and reporting systems for CHX. The training is based on adult learning principles and participatory training methodology, using discussions, hands-on practice, and role playing. Members of the CHX TWG focused on specific jump start districts within assigned provinces to support cascade training, using standardized materials and product distribution as outlined in provincial action plans. Specifically, UNICEF led efforts in Punjab, KP, Balochistan, and Federally Administered Tribal Areas (FATA). MCHIP initially led efforts in Sindh, while JSI focused on the Federating Areas and Islamabad. JSI also took responsibility for overarching coordination, first under HSSP and subsequently as part of the Integrated Health Systems Strengthening – Service Delivery (IHSS-SD) project. As of the CHX TWG update meeting in December 2017, JSI had supported the training of 73 master trainers in their assigned areas, resulting in the training of roughly 2,500 providers and distribution of more than 225,000 tubes

of CHX. UNICEF had trained roughly 3,000 providers in Punjab, KP, and FATA. Cascade trainings have gone down to the level of Basic Health Unit and the cadres trained include LHV, LHW, and women medical officers. CHX Centers of Excellence are established across all provinces: PIMS covers Gilgit-Baltistan, FATA, Azad Jammu & Kashmir, and Islamabad Capital Territory; Services Hospital covers Punjab; Lady Reading Hospital covers KP; and DHQ Hospital (Quetta) covers Balochistan. To date, the Centers of Excellence have established more than 170 master trainers.

In the public sector, CHX is distributed through a tiered distribution mechanism based on quarterly reporting. At the facility level, District Health Officers submit a quarterly consumption and demand report covering the use and need for CHX in their districts. They then receive CHX from the provincial level for distribution to selected health facilities on a monthly basis. Health facilities store CHX in labor and delivery rooms to apply on the umbilical cord of each newborn immediately after birth. At the community level, District Coordinators submit CHX requests to their District Health Officer on a quarterly basis. Once received, District Coordinators enter the CHX into the District Program Implementation Unit (DPIU) stock register. The DPIU distributes CHX to LHWs who have submitted a requisition and LHWs subsequently distribute CHX to pregnant women in their third trimester.

USAID donated 2.1 million CHX tubes, manufactured by Nepal-based Lomus Pharmaceuticals, to support implementation until local production could begin. MCHIP imported a further 550,000 tubes for sixteen priority districts in Sindh province. By 2017, nearly all of the donated CHX was distributed to District Health Offices which passed the product on to public sector health facilities, LHWs, and community midwives based on average patient loads.

Table 2. Distribution of USAID-donated CHX by province

Province/Region	Number jump start districts/total districts	Total CHX distribution
Punjab	12/36	1,022,000
Sindh	16/29	100,000
Khyber Pakhtunkhwa	3/34	365,000
Balochistan	3/34	241,600
Islamabad Capital Territory	Islamabad	51,000
Federally Administered Tribal Areas	3/7 agencies	137,400
Azad Kashmir	2/10	133,000
Gilgit-Baltistan	4/10	41,000
Total	**44/161**	**2,091,000**

The general demand among community midwives and LHWs is roughly two or three tubes per month while health facilities can generate a monthly demand ranging from 45 tubes in smaller health facilities to 1,000 tubes in larger teaching hospitals. The growing demand implies a steady utilization in the public health sector which points to the success of early efforts to introduce and scale the product. Though initial stocks were largely donated by USAID, some provinces have recently begun placing orders for CHX with local manufacturers. This is a significant positive sign that manufacturers are likely to see demand coming from the public sector and shows that provincial governments are starting to allocate funds for CHX. These early successes are an important motivator for sustaining local production in the near term.

2.3 Commercial sector landscape

Based on revised WHO guidelines recommending the use of CHX for umbilical cord care, PATH conducted an assessment of feasibility for local production. The report found that CHX is appropriate for local production based on a variety of factors, including:

- CHX does not require proprietary active ingredients, equipment, or processes;
- Pharmaceutical companies in many countries have already exhibited a capacity for secondary production for topical medicines; and
- The cost of materials to produce CHX locally is likely lower than the cost of importing the product and, therefore, would result in a lower retail price (PATH 2014).

With technical assistance in product registration from the USAID-funded Promoting the Quality of Medicines (PQM) program, implemented by USP, there are currently four domestic manufacturers producing and marketing a CHX product specifically designed for newborn cord care: Aspin Pharma, Atco Laboratories, Akhai Pharmaceuticals, and Zafa Pharmaceuticals. Specific details on the product, price, promotion, and placement of CHX with respect to local manufacturing are presented below.

Product

Each manufacturer produces CHX in ten gram tubes specifically labeled for cord care.[2] Ten grams is a sufficient amount to apply the gel for a full course of treatment. As such, quality assured products in appropriately designed packaging are readily available for marketing and distribution so long as manufacturers remain interested in sustaining production. SHOPS Plus's discussions with the manufacturers revealed that the current combined manufacturing capacity of all local manufacturers exceeds the universe of need in Pakistan by a factor of at least five. Recognizing this excess production capacity, PQM is supporting manufacturers in strengthening their quality assurance processes, enabling them to become pre-qualified suppliers for international tenders. Table 3 summarizes CHX products for newborn cord care currently available in the local market.

[2] UNICEF recommends that "cleansing" not be used in the packaging or pack insert to avoid inappropriate use.

Table 3. CHX product overview

Product	Manufacturer	Outer packaging indication
Loxidin	Akhai	N/A
Sepidyl	Aspin	Gel for umbilical cord care
Umbilica Gel	Atco	For umbilical cord care and cleansing in newborns
Cordiclean	Zafa	For umbilical cord care and skin cleanser

Price

Informal interviews suggest that households incur out-of-pocket cost of approximately PKR 1,000[3] for assisted home births and approximately PKR 20,000[4] for vaginal deliveries in a private facility. The maximum retail price of CHX as set by DRAP's Pricing Committee is PKR 49. This is a very small fraction of the costs that clients and households currently incur for an assisted delivery. Thus, it is likely that clients will be willing and able to pay the additional cost of CHX out-of-pocket without risk of undue hardship and without the need for subsidies.

Promotion

Each local manufacturer has developed and is implementing a detailed plan to market and distribute CHX for newborn cord care. Plans are currently focused on two main elements of marketing: generating brand awareness and targeting private health care providers most likely to support deliveries and/or care for newborns—specifically, obstetrician-gynecologists, pediatricians, and LHVs. Some also target general practitioners. The manufacturers invest their marketing and provider sensitization and training efforts among private providers, while their interface with the public sector focuses on institutional sales like tracking and responding to provincial-level commodity procurement tenders. In terms of marketing, most have produced standard promotional materials including posters, awareness charts, branded notepads, and folders. Promotional activities to date have largely centered on:

- Training sales forces using internal training departments;
- Trainings and social awareness programs targeting LHWs;
- Round table discussions and awareness trainings at larger hospitals and maternity homes

[3] Deployment Guidelines for Community Midwives suggests that SBAs charge a user fee of at least PKR 500.
[4] Rehman (2017) found that nearly half of the women from rural Punjab giving birth in a private facility paid more than PKR 16,000.

in major cities; and

- Dispensing samples tubes with some including sterile, disposable cord clamps.

Manufacturers have expressed interest in pursuing more robust marketing strategies to build product awareness and generate continued demand for CHX, though their actual investment in caregiver-directed SBCC is limited. Examples of current activities and plans include social media campaigns and toll-free numbers for consumer awareness. Interviews with manufacturers suggest that they are likely to focus more on creating demand through health care providers, particularly large hospitals. Since CHX is a low-value and low-margin product, manufacturers are unlikely to make the level of investment required for mass media promotion of CHX for newborn cord care. They are also less likely to make the financial investment required to systematically sensitize and educate health care providers in smaller maternity clinics.

It should be noted that discussions with manufacturers also revealed a lack of clarity on the status of CHX as over-the-counter or prescription-only. This classification impacts whether the manufacturer can target detailing efforts to cadres of providers without advanced medical degrees, stock and dispense in outlets not staffed by a trained pharmacist, or advertise the product's uses directly to consumers. Despite the lack of clarity, SHOPS Plus does not see this a significant barrier to scaling up CHX for newborn cord care.

Place

In the first six months of production, the four domestic manufacturers reported a combined distribution of approximately 550,000 tubes of CHX into the private sector pharmaceutical supply chain across Pakistan. For products like CHX, the pharmaceutical supply chain takes two main routes. The first is institutional sales involving direct supply by the manufacturer to large hospitals and for public sector procurement requests. The second is retail sales involving supply through distributors and wholesalers to cater to demand from smaller health facilities. Smaller health facilities and individual customers, such as LHVs, procure required health commodities from distributors, wholesalers, and pharmacies.

Private sector introduction and distribution of CHX is in its early stages. As such, SHOPS Plus expects availability of the product in the retail channel, including through distributors, wholesalers, and pharmacies, to be limited. However, all manufacturers expressed strong confidence in expanding availability through the retail channel as demand increases. SHOPS Plus's experience in other countries further suggests that manufacturers are able to ensure availability in the retail channel as demand increases. The product supply follows demand, particularly when supply linkages are initially made in locations where demand has been created. Thus, SHOPS Plus advises development partners against allocating resources for CHX in retail distribution since the commercial sector will respond sufficiently to fulfill this demand.

2.4 Civil society landscape

Social marketing and social franchising organizations

SHOPS Plus met with several social marketing and social franchising organizations to understand their current efforts and interests around scaling up CHX through the private sector. These organizations have extensive capabilities in pharmaceutical distribution and have a wide network of private health care providers with whom they regularly interact. Each organization also expressed interest in supporting CHX interventions. However, CHX is a low-margin and

low-value product. Engaging these organizations in CHX distribution would require substantial investments from development partners since the product is not financially viable for them at current levels of demand and at the current price. Moreover, health care providers and facilities in these networks are more oriented to family planning and not deliveries. This notwithstanding, these organizations have in-depth experience in training and providing supportive supervision to private health care providers on public health priorities and would be willing to support training on CHX if appropriate funding mechanisms were available.

Health care provider associations

Once trained, key professional medical societies are eager to conduct cascade trainings. Several associations, including the Society of Obstetricians-Gynecologists of Pakistan (SOGP); Pakistan Pediatric Association (PPA) and National Committee for Maternal, Newborn, and Child Health (NCMNH) have expressed a strong willingness to contribute to provider training efforts. Each can be engaged to conduct training-of-trainers, cascade trainings, or both.

Rural community engagement organizations

SHOPS Plus explored the potential of leveraging the community engagement network of the Rural Support Programmes Network (RSPN) to target LHVs and SBA assisting births in rural areas. RSPN has a wide network of community resource persons (CRPs) in Punjab, Sindh, and Balochistan. Each CRP covers approximately 200 households, and the CRPs are supervised by social organizers. Discussions with RSPN suggest that they are interested in developing and testing this model with CHX. To implement this model, the organization will require initial funding and support towards training CRPs on CHX, developing and producing IEC materials, and forging supply partnership with a manufacturer. RSPN noted that establishing an effective district-level supply chain is critical to the success of this initiative. Once the supply chain is established, social organizers can facilitate on-going supplies to CRPs.

2.5 Knowledge and demand among caregivers and providers

Caregivers

Studies have shown a variety of cord applications practiced in Pakistan. Traditional practices include application of *matti* (crushed apricot seed), ghee/oil, and ash/surma. Research suggests these traditional practices are more prevalent in lower-income households, in rural areas, and during home births (Khan et al. 2013). Among mothers from urban areas and those giving birth in health facilities, application of antibiotic creams or spirits was also noted in some studies (Ashraf at al. 2017). These practices highlight the importance of caregiver SBCC that changes current norms and practices and increases acceptance of CHX as the only appropriate application for newborn cord care.

Private providers

SHOPS Plus did not uncover opposition to the use of CHX by any individual provider or representative of a provider association. As noted elsewhere, the provider groups consulted include the SOGP, PPA, and Midwifery Association of Pakistan. SHOPS Plus did not identify a

professional society representing either LHVs or community midwives.[5] Many private providers reported recommending antiseptic or antibiotic creams for cord care. Given that chlorhexidine is a well-known antiseptic, providers did not express any hesitation in integrating a CHX formulation specifically labeled and packaged for cord care into their regular practice.

To date there has not been a coordinated campaign to disseminate information to the private sector regarding WHO guidelines on the use of CHX, inclusion of CHX on either the national or provincial Essential Medicines Lists, or the availability of locally produced CHX. As such, awareness amongst providers remains limited to those already targeted by manufacturers as part of their marketing strategies.

All provider groups mentioned above should be trained on CHX and are critical to changing provider behavior around its use. However, initial trainings should prioritize those cadres supporting deliveries. This includes obstetrician-gynecologists, female MBBS doctors, LHVs, nurse midwives, and community midwives. Training for pediatricians should be secondary given that their assessments of neonates are often delayed beyond twelve hours after birth and may be forgone altogether if the women chooses to leave the facility shortly after delivery. The low likelihood of an assessment by a pediatrician for home deliveries, which is a considerably high proportion of overall births in Pakistan, further suggests that pediatricians be included in the later phases of trainings. Though trainings should first target other providers, pediatricians are important stakeholders. With training, they can promote the product through their interaction with families, and particularly mothers.

3. Private Sector Strategy

This section outlines a proposed strategy to scale up CHX through the private sector based on findings from the situational analysis. The overall goal of the strategy is to design a series of interventions that decrease neonatal mortality due to umbilical cord infections in Pakistan. Within that goal, the specific objective is to achieve at least 60 percent coverage of CHX for newborn cord care throughout Pakistan by 2022. SHOPS Plus developed the strategy through the lens of a total market approach in which the comparative strengths of each sector, including public, commercial, and not-for-profit, are harnessed to ensure equitable access to all segments of the population.

3.1 Strategic priorities

Outlined below, SHOPS Plus had identified five strategies required to achieve the overall goals and objectives of rapidly scaling CHX in the private sector. The first strategy aims to increase awareness and acceptance of CHX among consumers. The other four strategies aim to increase awareness and acceptance of CHX among providers by filling existing gaps, reinforcing existing marketing and training efforts among public sector actors and manufacturers, and strengthening the supply chain for smaller private providers.

The project envisions that the CHX TWG would coordinate the strategy to ensure that it aligns with and supports the existing national- and provincial-level plans which currently target public sector providers. Stakeholders reviewed and agreed with these strategies during a presentation of findings in December 2018 (see Annex C). However, as of the publication of this report,

[5] Training of LHVs and community midwives falls under the purview of the Pakistan Nursing Council, which is responsible for curriculum development and accreditation.

stakeholders need to continue dialogue and coordination to determine how best to implement the prioritized strategies.

Strategy 1: Design and implement a phased social and behavior change campaign to increase awareness and generate demand

As noted in the situational analysis, one critical barrier is a lack of awareness around appropriate cord care methods among mothers and caregivers (e.g. use of traditional applications on the cord and low awareness of the CHX and its benefits), resulting in low acceptance that CHX is the only appropriate application for neonatal cord care. Addressing these barriers are a critical first step in increasing demand for and use of CHX and in shaping the total market. Commercial manufacturers, while recognizing the need to increase acceptance of CHX among caregivers, expressed their inability to invest in addressing this given the low margins and value of CHX. Each requested support from development partners in this area. Accordingly, SHOPS Plus proposes that a critical first step is to design and implement a multi-phased SBCC strategy that increases awareness of, and generates demand for, CHX.

Phase one of the campaign should comprise a set of "call-to-action" public service announcements (PSA) featuring leading national and/or provincial health officials. The PSAs, disseminated through multiple mass-media channels, should mobilize health care providers and administrative staff in public and private health facilities as well as leadership of health care provider associations. The larger community should be a secondary target audience of the PSAs. Based on the objectives and primary target audience, this campaign should focus on urban areas.

Phase two of the campaign should focus on improving community knowledge on appropriate cord care methods and increasing acceptance of CHX as the only appropriate method. Since there are greater gaps in knowledge and practice of appropriate cord care in rural areas, and because a larger proportion of home births occur in these same areas, this phase of the campaign should be oriented to rural populations. Materials should all be in local languages. Actors implementing the second phase should ensure alignment with existing SBCC strategies and interventions and design subsequent phases based on lessons learned from the initial wave of campaigns.

Strategy 2: Generate provider association endorsements and build awareness among association members

In general, private health care providers are familiar with the antiseptic properties of CHX and reported recommending the use of other antiseptics for cord care. Health care providers also found the price, packaging, and labeling appropriate for neonatal cord care. However, private providers, whether or not they are engaged in dual practice, continue to face barriers to awareness and acceptance. Stakeholders at the validation meeting (Annex C) noted that, even though dual practicing providers may have some exposure to trainings conducted by the public sector, they have not fully accepted new guidelines for CHX and may not always recommend CHX to their patients. Meanwhile, private health care practitioners not engaged in dual practice consistently noted that they were neither aware of the national policy recommending CHX nor the availability of locally manufactured products specifically designed for said purpose. In this context, SHOPS Plus recommends that provider associations, who expressed strong willingness to support efforts among their members, lead the effort to sensitize all private providers to CHX. While IPs and social marketing organizations could provide support, SHOPS Plus identified provider associations as the most ideal set of actors to carry out this work.

Specifically, provider associations are local and already have existing communication and training processes. Moreover, health care practitioners are strongly influenced by peer opinion, especially by key opinion leaders with credibility. SHOPS Plus recommends engaging provider associations for this task, rather than IPs and social marketing organizations, since this strategy has the additional advantage of strengthening the private sector health system. Private provider associations, as local sustainable organizations, are natural owners of efforts that assure and improve the quality of care provided by members. Strengthening the capacity of associations to play this role could have cross-cutting benefits that go beyond scaling CHX.

SHOPS Plus recommends that provider associations implement two interventions to improve awareness and acceptance of CHX among private providers. First, the national policy on CHX use, including recommendations from the WHO and an overview of locally manufactured products currently available on the market, should be presented at all national and provincial meetings of relevant provider associations. These include general meetings and national conferences gathering members from the associations of obstetrician- gynecologists, midwives, pediatricians, and general practitioners. SHOPS Plus recommends that this approach continue for a minimum of one year to ensure wide dissemination of key messaging. Secondly, formal letters of endorsement should be obtained from key leaders of each relevant association at both the federal and provincial levels, as appropriate. The letters should clearly endorse the use of CHX for all newborns and be disseminated to all association members.

Strategy 3: Train and support private health care providers to integrate CHX into postpartum services

SHOPS Plus segmented the total market for CHX into groups that can be served by four distinct types of service providers: providers at public health facilities, providers at private hospitals, small and medium private sector maternity homes, and public and private sector providers assisting home births. The CHX TWG has made substantial progress training public sector health care providers and LHWs. Strategies to integrate CHX into postpartum services for the remaining facility-based segments are outlined below.

Private sector hospitals. Technical and administrative procurement staff in large hospitals are a core audience for ongoing activities promoting the basket of pharmaceuticals marketed by CHX manufacturers. Local CHX manufacturers have established relationships and regular interactions with staff in large hospitals. This makes the manufacturers ideally positioned to orient these staff to CHX and ensure it is on the list of medical supplies the hospitals regularly procure. In their marketing plans, each manufacturer has outlined a strategy to address this segment through three principal means: seminars and round table discussions; one-on-one interactions during regular visits; and social media. SHOPS Plus recommends making commercial manufacturers aware of other demand generation and advocacy activities implemented with support from development partners. The aim of this strategy is to motivate manufacturers to focus and intensify brand-specific marketing efforts among private sector hospitals. In addition, SHOPS Plus recommends obtaining monitoring data from the CHX manufacturers to track their achievements in reaching this provider segment. One possible approach is to establish Memoranda of Understanding with individual pharmaceutical manufacturers in which they agree to target private sector hospitals and share sales data in return for supportive activities noted above. The CHX TWG should also continue to actively engage them in meetings and steering committees.

Medium and small private sector facilities. There are more than 10,000 small and medium private maternity homes throughout Pakistan largely staffed and managed by LHVs, midwives, nurses, and female doctors. This segment of health facilities is widely dispersed and are not a

focus of commercial pharmaceutical companies because of lower sales potential. As noted earlier, many of these health care practitioners may be engaged in dual practice. However, SHOPS Plus recommends engaging these providers through private sector channels to remind and reinforce the importance of incorporating CHX into their current practices. Orienting providers in these facilities on CHX for newborn cord care requires significant donor support. Social marketing and social franchising organizations (e.g. Marie Stopes Society, Greenstar, and DKT), health care provider associations (e.g. SOGP), and training institutes (e.g. PIMS) have the capacity and interest to target this segment if sufficient funding is available. SHOPS Plus recommends providing funding support to such organizations for targeted training, using existing standardized training materials, as the most effective approach to reaching this segment.

Strategy 4: Pilot models providing CHX to LHVs and SBAs supporting home births in rural communities

Babies born at home are more vulnerable to improper cord care and infections than those delivered in facilities. Given that a large percentage of births (34 percent) take place at home, this is a critical segment of the population to reach with both CHX messaging and products. At the same time, many rural areas do not have pharmacies. Further, it is challenging to access LHVs and SBAs assisting births in rural areas since they are solo practitioners that generally lack the opportunity to meet and coordinate. While SHOPS Plus does not know the extent to which private sector functionaries support home births, anecdotal evidence suggests that their role is significant. Failing to target these frontline private sector providers would result in sub-optimal support to populations most in need. Within this context, SHOPS Plus recommends developing and testing a series of pilot programs that target private sector LHVs and SBAs serving rural populations and establishing a supply chain that assures regular supply of CHX to these providers. One possible approach is to work through NGOs already deeply involved with rural community engagement programs, particularly those which include LHVs and SBAs. An example of such an organization is RSPN, which implements three community engagement programs. A potential model of engagement could involve using these NGOs as aggregators of demand and supply for LHVs and SBAs serving rural areas. In such a model, the organization would be contracted to:

- Integrate initial training of LHVs and SBAs on CHX. Trained providers could include those who are already a part of the organization's rural network and those specifically recruited into the network to expand the organization's coverage into new areas.
- Purchase CHX from a manufacturer or distributor in bulk at the product's wholesale price and then make the product available at retail prices in central sub-district locations.
- Motivate and monitor the LHVs and SBAs to integrate CHX into the home births they assist. Since they charge a fee for assisting births, they would pass on the additional cost of CHX to the households receiving their services.

In addition, SHOPS Plus recommends developing and testing the feasibility and acceptance of incorporating CHX into existing safe delivery kits or developing a new enhanced safe delivery kit[6] for use by LHVs and SBAs.

Strategy 5: Facilitate supply linkages to small- and medium-size maternity homes

The supply chain for CHX follows the traditional pharmaceutical system: direct supplies through an institutional sales channel for large hospitals and the public sector and supplies to small and medium facilities through distributors and wholesalers. As noted in the landscape, there is a clear supply chain for CHX to the public sector and large private hospitals can use existing institutional sales channels as required. Current supply to these segments is likely sufficient to meet demand. However, supplies to small- and medium-sized facilities largely depend on the availability of CHX at the wholesaler or distributor from which the facility procures its other supplies. In the long run, supply will follow demand. In the short-run, a lack of immediate availability may have a detrimental effect. More specifically, if maternity homes are informed about CHX, resulting in motivation to procure the product, there may be lasting impacts if they are met with an initial lack of supply at their primary distributor or wholesaler. As such, firms tasked with training providers at small- and medium-sized maternity homes (see Strategy 3) should closely monitor the availability of CHX at wholesalers and distributors catering to these facilities and, as appropriate, facilitate linkages between these suppliers and local manufacturers.

3.2 Monitoring, evaluation, and learning

A comprehensive MEL system that measures anticipated outputs and outcomes from the private sector is a critical component of the strategy. Table 4 outlines a proposed set of indicators based on the strategies outlined above. SHOPS Plus recommends that the indicators, data sources, and data collection systems be finalized concurrently with the strategy and implementation plan and incorporated into the existing national monitoring plan.

In addition to standard process, outcome, and impact indicators, SHOPS Plus strongly recommends developing and maintaining a central repository of all trained providers. A large proportion of providers engage in dual practice, so it is important to maintain a registry to avoid duplication of efforts. Moreover, it is likely that multiple stakeholders, including the CHX TWG and manufacturers, are targeting the same providers with the same messaging. As such, it is critical that the repository be maintained in as close to real-time as possible. This will be of increasing significance as implementers start targeting private sector providers. The repository should be developed with one partner assuming primary responsibility for its maintenance. Assigned trainers should have access to the database and receive training on how to input and extract relevant data. There are also clear opportunities for building this database into a management information system for private sector distribution and application of CHX, particularly as efforts to identify and register private sector providers throughout Pakistan expand.

[6] In addition to incorporating CHX, an enhanced safe delivery kit could include additional products that are valued by clients (such as baby oil and infant clothes) and products of public health significance (such as infant hypothermia indicator and non-electric warmers).

Table 4. Illustrative indicators

Indicator	Disaggregation
Process Indicators	
Proportion of adults who report having seen or heard messages encouraging use of CHX for newborn cord care	Sex, province, residence
Number of national and provincial health care provider association meetings where evidence, policy, and available products for newborn cord care was presented	Provider cadre, province
Number of health care providers who were provided a copy of the statement endorsing use of CHX for newborn cord care from their association	N/A
Number of private sector health facilities with at least one doctor/LHV/nurse/midwife trained on CHX	Manufacturers/IPs who conducted the training
Number of LHVs/SBAs trained on CHX	Provider cadre
Number of villages covered by the rural engagement model for promotion and distribution of CHX	N/A
Output Indicators	
Number CHX tubes distributed by LHVs/SBAs through the rural engagement model	Provider cadre
Number of CHX tubes sold through the private sector	Province, product supply chain route (direct/institutional or indirect/through distributors)
Outcome Indicators	
Number of caregivers who report applying CHX and no other substance to the cord (periodic survey)	N/A
Impact Indicators	
Neonatal mortality rate (PDHS)	N/A

Annex A. List of Key Informants

Table 5. Key informants

Organization	Title
Akhai Pharmaceuticals	Head of Marketing & Sales
Akhai Pharmaceuticals	Head of Supply Chain
Akhai Pharmaceuticals	Product Manager
Akhai Pharmaceuticals	Head of Manufacturing Plant
Aspin Pharmaceuticals	Director, Sales & Marketing
Atco Laboratories	Business Unit Head
Atco Laboratories	Product Manager
Atco Laboratories	Managing Director / Marketing Head
Atco Laboratories	Director Marketing & Sales
Atco Laboratories	Product / Brand Manager
Atco Laboratories	G.M Quality Operations
Atco Laboratories	G.M Plant Operation
Bilal Hospital Rawalpindi (private)	Hospital Pharmacist
Children's Hospital North (private)	Private provider
DKT	Chief Executive Officer
DKT	Product Manager
Drug Regulatory Authority of Pakistan	Chief Executive Officer

Organization	Title
Greenstar Social Marketing	Chief Executive Officer
Greenstar Social Marketing	Chief Medical Officer
Jhpiego	Sr. Technical Advisor
JSI	Chief of Party, IHSS-SD
JSI	National Coordinator Federal Component, IHSS-SD
Liaqat National Hospital (private)	Private provider
Marie Stopes Society	Head of Business
Marie Stopes Society	Director Health Services
Midwifery Association of Pakistan	Member
Midwifery Association of Pakistan	General Secretary
Midwifery Association of Pakistan	Joint Secretary
Ministry of National Health Services, Regulation and Coordination	Deputy Director
National Committee for Maternal, Newborn, and Child Health (NCMNH)	Director
NCMNH	President
NCMNH	Gynecologist, Consultant

Organization	Title
NCMNH	Secretary General
Pakistan Institute of Medical Science	
Pakistan Pediatric Association – Federal Chapter	Secretary General
Pakistan Pediatric Association – Federal Chapter	President/Dean of Pediatrics, Rawalpindi University
Pakistan Pediatrics Association, Sindh Province	General Secretary
Pakistan Pediatrics Association, Sindh Province	President
Pakistan Pediatrics Association, Sindh Province	Treasurer & Director, Child Survival Program, Sindh Province
Park Lane Hospital (private)	Private provider
Quaid Azam International Hospital Islamabad (private)	Chief Pharmacist
Quaid Azam International Hospital Islamabad (private)	Pharmacy Manager
Rural Support Program Network	National Coordinator

Organization	Title
Shifa International Hospital Islamabad (private)	Manager Hospital Pharmacy
Society of Obstetricians and Gynecologists of Pakistan, Sindh Province	SOGP Vice President
UNICEF	Health Specialist, Maternal and Child Health
UNICEF	Health and Nutrition Officer
UNICEF	Health and Nutritional Coordinator
US Pharmacopeia	PQM
World Health Organization	Medical Officer
Zafa Pharmaceuticals	Managing Director
Zafa Pharmaceuticals	General Manager, Corporate Affairs
Zafa Pharmaceuticals	Head of Supply Chain /Distribution
Zafa Pharmaceuticals	Head of Marketing and Sales

Annex B. List of Pharmacies Visited

Islamabad

- D. Watson
- Waheed Chemist
- Shaheen Pharmacy
- Jackson Pharmacy
- Khattak Drug Store
- Ali Medicose
- Swabi Medicose
- Hameed Pharmacy

Karachi

- Koaser Pharmacy
- Times Pharmacy
- Ahmed Medical Store
- Al Abbas Chemist
- Al Madina Medical Store
- Al Chemist
- Faisal Medical Store
- Hamdard Medical Store

Annex C. Summary of Validation Meeting with the CHX TWG

On December 27, 2018, SHOPS Plus presented findings from the CHX landscape analysis as well as recommended strategies for scaling up CHX through the private sector to the CHX TWG at the Marriot Hotel Islamabad. This annex lists the stakeholders represented at the meeting and summarizes their responses to the findings and recommendations in this report.

Meeting participants

The following private sector organizations had representatives in attendance:

- CHX manufacturer(s): Atco and Zafa
- Social marketing and social franchising organization(s): DKT, Greenstar and Marie Stopes Society
- Rural community engagement organization(s): RSPN
- Provider association(s): SOGP and Nursing Council
- Donors and implementing partners: UNICEF, Chemonics, JSI, USAID, and USP

In addition, several public sector agencies had representatives in attendance, including the MoNHSR&C and the MNCH/Health Departments of Punjab, Sindh, Balochistan, KP, Azad Jammu and Kashmir, Gilgit-Baltistan, and Islamabad Capital Territory.

Presentation responses

Participants largely validated the landscape findings and agreed with recommendations outlined in the strategy. Feedback highlighted a few new facts that SHOPS Plus incorporated into the final report. Specifically, local manufacturers represented at the meeting clarified that they do some outreach to small-and medium-sized facilities. However, they confirmed that this outreach is not comprehensive. For example, Zafa only reaches out to LHVs and SBAs in Sindh. They also reached 500 pharmacies, but all of these are located in in Mirpurkhas. Zafa and Atco also provided updated numbers of CHX tubes they have sold to public agencies. Specifically, Zafa has sold more than 200,000 units to the Provincial Health Departments in Sindh and KP as well as to the People's Primary Healthcare Initiative. Atco has supplied another 169,000 tubes to the Provincial Health Department of Sindh. The new numbers indicate that local manufacturers are gaining traction in the public sector market for CHX since receiving permission to manufacture a year ago. Meeting participants all agreed that the price of CHX is not a barrier to scaling CHX. They pointed out that the price amounts to less than two percent of the average total cost of a delivery charged by LHVs or in small clinics. Several participants still proposed that social marketing has an important role to play in scaling CHX through providers and consumers.[7]

[7] As noted in the landscape findings, engaging social marketing organizations in CHX distribution would require substantial investments from development partners since the product is not financially viable for these organizations at current levels of demand and at the current price. However, these organizations have in-depth experience in training and providing supportive supervision to private health care providers on public health priorities and would be a strong training resource if appropriate funding mechanisms were available. SHOPS Plus continues to recommend that donor funding is more productively invested in marketing and building awareness and acceptance among

In addition to findings, the presentation included a facilitated discussion around the level of dual practice among LHVs and SBAs. SHOPS Plus facilitated this discussion to better understand the extent to which public sector CHX training reaches private providers engaged in dual practice. Meeting participants agreed that the majority of LHVs and SBAs are engaged in dual practice but could not give a specific percentage. A large proportion of dual practicing LHVs and SBAs may indicate that additional training is redundant. However, manufactures noted that, in interactions with LHVs and SBAs, providers and consumers still have reservations about the use of CHX. The landscape and meeting discussion left uncertainty about the extent to which public sector CHX trainings effectively penetrate dual practitioners at small- and medium-size facilities. The discussion clearly highlighted the ongoing need to improve awareness and acceptance among LHVs and SBAs engaged in dual practice to reinforce any training they have already received from the public sector. Participants ultimately concluded that there is still an important role for private sector training.

In terms of prioritized strategies, participants emphasized the importance of a multi-pronged effort to improve awareness, acceptance, and uptake of CHX among LHVs, SBAs and consumers. They concurred with the need to implement a mass media awareness campaign and stressed the importance of delivering advertisements or awareness programs in local languages. Participants also prioritized obtaining formal endorsement letters from associations like the SOGP. One participant particularly stressed the importance of endorsement letters from provider associations. They further informed meeting participants that 15,000 deliveries took place at PIMS Islamabad and every patient received CHX. The participant predicted that if a provider prescribes CHX and insists on its use then patients will not resist. This understanding puts emphasis on the importance of targeting providers with information and subsequently reaching patients through these providers.

Participants concluded the presentation with a preliminary discussion about next steps, including which actors could support priority recommendations. Given time constraints, participants did not reach any final decisions. Organizations represented in the CHX TWG must continue internal and coordinated discussions to operationalize the strategies outlined in this report.

providers and consumers. If SMOs are engaged, implementers should adopt a pharmaceutical partnerships approach to strengthen private sector sustainability and ensure that scarce donor funds are prioritized for addressing awareness and acceptance barriers rather than activities that focus on distributing products or subsidizing prices.

Annex D. Presentation of Findings and Proposed Strategy

This presentation was prepared and presented before the release of the PDHS 2017-18. Some of the data on the total number, location, and province of birth come from the PDHS 2013 and differ from the data presented in the main report, which was revised upon the release of PDHS 2017-18.

Scaling-up chlorhexidine for newborn cord care in Pakistan

Private health sector landscape and strategy

Dr. Tariq Majid
Abt Associates

December 27, 2018

Background

- Neonatal mortality rate: 42 per 1000 live births
- 17% neonatal mortality due to sepsis with lead risk factor cord infection in home deliveries
- CHX is low-cost, effective antiseptic preventing cord infection

Objectives of this work

- Ask **series of questions** to **identify opportunities and challenges** to scaling-up CHX through a **total market approach**
- **Recommend strategic actions** for implementing and monitoring CHX scale-up with the private sector

What we did

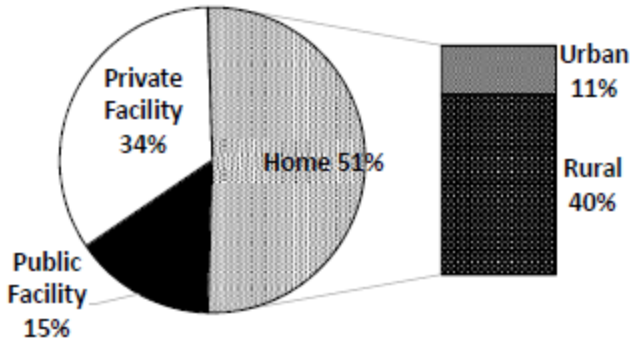
- Rapid assessment, including analysis of PDHS data to characterize national market for CHX (August 2017)
- Landscape assessment with key informant interviews in Islamabad and Karachi (January-July 2018), covering:
  - Policy environment, supply chain, current and planned activities
  - Capabilities/interests of commercial and civil society actors
  - Caregiver knowledge and attitudes
  - Review of private facility census
- Synthesis of findings with best practice to generate recommended strategic actions
- Finalized report summarizing findings and strategy

Q1: Where are women giving birth?

1.1: Can local CHX production satisfy the universe of need?

1.2: Are current CHX scale-up efforts reaching all sectors?

Delivery location for 6.2 million babies born per year



Sources: 2013 PDHS, 2017 census

Local capacity for CHX production exceeds universe of need

- Four domestic manufacturers produce CHX designed for newborn cord care
  - Distributed 550,000 tubes in first four months
  - Combined production capacity = 5X universe of need in Pakistan

Public sector achieving scale-up, but not reaching all relevant sectors

Home birth distribution	• Community midwives and LHW distributing 2-3 tubes/ month
Public facility distribution	• Public health facilities distributing 45-1,000 tubes/month • USAID donated 2.1 million tubes; all distributed through District Health Offices by 2017
Training support	• Conducted cascade training for public providers, community midwives, LHW • Distributed product • Established Centers of Excellence across all provinces
Policy environment	• Formally adopted practices/materials for CHX use (2015) • Began formally coordinating activities across partners and drafted national action plan (2015) • Formally endorsed CHX training manual (2016)
Private providers	• Minimal training or targeted distribution

RECOMMENDATION: Target interventions at private providers to complement existing effective work scaling up CHX

- Need additional actions that target private providers, their patients, and suppliers
- Set ambitious targets; targeted private sector strategies can help stakeholders

> Achieve at least 60% coverage of CHX for newborn cord care throughout Pakistan by 2022

- Assign responsibility to own/implement prioritized strategic actions

RECOMMENDATION: Carefully monitor implementation

- Consider process, outcome, and impact indicators as part of comprehensive M&E plan
- Finalize indicators, data sources, and data collection systems concurrently with the strategy and implementation plan
- Incorporate them into the existing national monitoring plan
- Maintain central repository of trained providers

Q2: How can we increase use of CHX after births at private facilities?

2.1 **Which private providers** support deliveries? How many of them are there?
2.2. **Who builds their awareness** and clinical capacity for CHX?
2.3 Who ensures they receive a **sufficient supply** of CHX?
2.4 Will **patients be willing to pay** for the CHX?
2.5 Will providers be receptive to recommending CHX?

Small, medium, and large private providers support deliveries in facilities/at home

~14,500 private providers in Punjab, Sindh, KP where the most births take place

- LHV, nurses, and midwives serve in clinics, small and medium-sized private maternity homes, and at home births
- Female doctor clinics are the most common type -- usually medium sized clinics

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Manufacturers support hospitals and medium-sized maternity homes in urban areas

- Currently implementing plans for generating brand awareness
  - Target private providers most likely to support deliveries and/or care for newborns
  - Conduct trainings and social awareness programs
  - Interacting regularly with staff at large hospitals, coverage of small/medium birthing facilities unclear
- Capacity exists to expand CHX distribution as demand increases
  - Indirectly to private facilities through distributors and wholesalers
  - Directly to large hospitals through institutional delivery

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Potential gap in support for small/medium-sized private providers in rural areas

- For low-value/low-margin product like CHX, manufacturers coverage/frequency of interactions with smaller facilities understandably lower
- Smaller facilities may need initial facilitation in being linked to nearest distributor/wholesaler stocking CHX
- Some dual practice providers trained by public sector but not comprehensive

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Validating results and refining recommendations through new questions

- *CHX manufacturers:*
  - *What types of facilities are you targeting? In what numbers? Is the above summary accurate?*
- *All participants:*
  - *What percent of providers engage in dual practice in the public and private sectors?*
  - *how many/what percent of health care providers assisting births are neither trained as part of the public sector or visited by commercial sector?*

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KG4

If there is a gap, provider associations ideally positioned to fill it

Actor able to support	**Ability to provide sustainable, institutionalized support for small- and medium-sized private providers**
Global implementers	• Systems would be parallel to local ones, and short-term
Social marketing organizations	• Low-cost/low-margin product requires higher demand or donor/manufacturer subsidies for sustainability • Focus on FP more than MCH
Health care provider associations	• Local • Already have existing communication/training processes • Health care practitioners strongly influenced by peer opinion, especially "opinion leaders" with credibility • Many expressed strong willingness to support training

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CHX affordable for patients and acceptable to private providers

- Patients regardless of socio-economic status likely willing to pay for CHX out-of-pocket
  - Max price (PKR49) is 5% out-of-pocket cost of assisted home birth
  - Likely affordable without subsidies
- Private providers receptive to recommending CHX
  - Many reported recommending antiseptic or antibiotic creams for cord care
  - Did not express any hesitation about integrating CHX into their regular practice

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RECOMMENDATION: Generate provider association endorsements and build awareness among association members

- Present the national policy on CHX use at all national/ provincial meetings of relevant associations
- Obtain formal letters of endorsement from key leaders of each relevant associations and disseminate to members

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RECOMMENDATION: Train and support private health care providers to integrate CHX into postpartum services

- Private hospitals:
  - Motivate manufacturers to continue/intensify their marketing/branding activities by sharing information about similar donor-funded activities
  - Consider MOUs exchanging manufacturers' targeting of private hospitals and sharing of sales data with marketing support
- Medium and small private facilities:
  - Provide funding support for targeted training, using existing standardized training materials

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RECOMMENDATION: Facilitate supply linkages to small- and medium-sized maternity homes

Short-term gaps in CHX in supply chain impede scale-up:

- Firms training these providers should closely monitor the availability of CHX at wholesalers and distributors catering to these facilities
- Need to facilitate supply linkages between these suppliers and local manufacturers, as appropriate

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Q3: How can the private sector support public sector in uptake of CHX in home deliveries?

3.1 Are there private actors positioned to complement work in public sector?

Rural community engagement organizations well-positioned to support public sector

- Home births most prevalent; private actors can accelerate scale-up to complement public sector
- Rural Support Programmes Network (RSPN) is good example
  - Operates wide network of community resource persons in Punjab, Sindh, and Baluchistan (>80% of annual deliveries)
  - Each community resource person covers ~200 households and receives supervision
  - Interested in supporting CHX scale-up

RECOMMENDATION: Pilot models providing CHX to LHV and SBA supporting home births in rural communities

Given that role of LHVs/SBAs is likely significant:

- Contract community engagement organization to train/motivate/monitor/purchase CHX for private LHVs/ SBAs in rural areas
- Establish a supply chain that assures regular supply of CHX to these providers with community engagement organizations playing the role of aggregators
- Develop/test distribution of CHX through existing or new safe delivery kits

Q4: Will consumers accept provider recommendations to use CHX?

Increasing awareness and clinical capacity of providers is not enough

- Also need to build awareness and receptivity of caregivers
  - Traditional practices more prevalent in lower income households, in rural areas, and during home births
  - SBCC important for caregivers to changes current norms and practices

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RECOMMENDATION: Design and implement a phased SBCC campaign to increase awareness and generate demand

- Multi-phased campaign with donor funding
- Phase one: disseminate 'call-to-action' public service announcements through mass media with greater emphasis in urban areas
- Phase two: improve community knowledge and acceptance of CHX as the only appropriate method in urban and rural areas

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Questions for discussion

- *Which of these strategies fit into any development or implementing partners' plans?*
- *Which are the top two strategies/activities you would like development and implementing partners to focus on?*
  - *CHX manufacturers: which two strategies will help you grow the market for CHX the most?*

Summary of recommended strategic actions

- Design and implement a phased social and behavior change campaign to increase awareness and generate demand
- Facilitate supply linkages to small- and medium-size maternity homes
- Generate provider association endorsements and build awareness among association members
- Train and support private health care providers to integrate CHX into postpartum services
- Pilot models providing CHX to LHV and SBA supporting home births in rural communities

Next Steps

- Incorporate feedback from this meeting into the report
- Finalize strategy and disseminate to all stakeholders
- IHSS-SD to take ownership over the strategy and lead efforts to assign responsibility among stakeholders

Thank you

Annex E. Universe of Need

Table 6. Estimated annual births in 2017

Province	Public health facility	Private health facility	Home/Other (urban)	Home/Other (rural)	Total
Punjab	710,000	1,470,000	200,000	780,000	3,160,000
Sindh	280,000	720,000	70,000	320,000	1,390,000
KP	260,000	330,000	50,000	320,000	960,000
Balochistan	40,000	70,000	40,000	170,000	320,000
ICT Islamabad	20,000	20,000	10,000	-	50,000
FATA	40,000	30,000	70,000	-	140,000
Total	1,350,000	2,640,000	440,000	1,590,000	6,020,000

Sources: Pakistan Bureau of Statistics 2017, PDHS 2017-18

References

Ashraf S., M. Din Ahmed, MH. Mushtaq, G. Singh and A. Khan. 2017. “KAP Survey in Mothers Towards Infant Care and Feeding in Pakistan.” *American J Epidemiol Public Health*, 1(1): 001-007.

Basu, S., J. Andrews, S. Kishore, R. Panjabi, and D. Stuckler. 2012. "Comparative Performance of Private and Public Healthcare Systems in Low- and Middle-Income Countries: A Systematic Review." *PLoS Medicine* 9, no. 6. doi:10.1371/journal.pmed.1001244.

“Feasibility assessment for production of 7.1% chlorhexidine digluconate for umbilical cord care in Pakistan.” PATH. March 2014.

Government of Pakistan Ministry of National Health Services Regulations and Coordination. 2015. “Notification July 1, 2015.”

Healthy Newborn Network. 2018. "Chlorhexidine for Umbilical Cord Care." Accessed October 16, 2018. https://www.healthynewbornnetwork.org/issue/chlorhexidine-for-umbilical-cord-care/.

Imdad, A., LC. Mullany, AH. Baqui, S El Arifeen, JM. Tielsch, SK. Khatry, R Shah, et al. 2013. "The Effect of Umbilical Cord Cleansing with Chlorhexidine on Omphalitis and Neonatal Mortality in Community Settings in Developing Countries: A Meta-analysis." *BMC Public Health*, S15, 13, no. Suppl 3. doi:10.1186/1471-2458-13-s3-s15.

Irfan, SM and A. Ijaz. 2011. “Comparison of Service Quality between Private and Public Hospitals: Empirical Evidences.” *Pakistan Journal of Quality and Technology Management* 7 (1): 1 - 22.

John Snow Inc. 2017. “Use of Chlorhexidine for Cord Care Social Behavior Change Communication: Experience from Nepal.”

John Snow Inc. 2015. “Report of the National Workshop on Developing Plan of Action for Chlorhexidine Scale Up.”

Khan, GN, ZA Memon, and ZA Bhutta. 2013. “A cross sectional study of newborn care practices in Gilgit, Pakistan.” *Journal of Neonatal Perinatal Medicine*, 6(1). doi: 10.3233/NPM-1364712.

“Pakistan Demographic and Health Survey 2012-13.” National Institute of Population Studies (NIPS) [Pakistan] and ICF International. 2013. Islamabad, Pakistan, and Calverton, Maryland, USA: NIPS and ICF International. https://dhsprogram.com/pubs/pdf/fr290/fr290.pdf

"Pakistan Demographic and Health Survey 2017-18: Key Indicators Report." NIPS and ICF International. 2018. Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF International. https://dhsprogram.com/pubs/pdf/PR109/PR109.pdf

“Pakistan Demographic and Health Survey 2017-18.” National Institute of Population Studies (NIPS) [Pakistan] and ICF International. 2019. Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF International. https://dhsprogram.com/pubs/pdf/FR354/FR354.pdf

Pakistan Bureau of Statistics. 2017. “Provisional Summary Results of 6th Population and Housing Census.” http://www.pbs.gov.pk/sites/default/files//DISTRICT_WISE_CENSUS_RESULTS_CENSUS_2017.pdf.

Rehman, AU., M Adnan, H. Mahmood, M. Hassan, and A. Humayun. 2017. "Maternal Health Care Expenditure among Women in Rural Areas of Pakistan." *Annals of King Edward Medical University* 23, no. 2. doi:10.21649/akemu.v23i2.1587.

Soofi, S., S. Cousens, A. Imdad, N. Bhutto, N. Ali, and ZA. Bhutta. 2012. "Topical Application of Chlorhexidine to Neonatal Umbilical Cords for Prevention of Omphalitis and Neonatal Mortality in a Rural District of Pakistan: A Community-based, Cluster-randomized Trial." *The Lancet*. doi:10.1016/S0140-6736(11)61877-1.

UNICEF. 2016. “Maternal and Newborn Health Disparities Country Profiles: Pakistan.” https://data.unicef.org/resources/maternal-newborn-health-disparities-country-profiles/.

United Nations Population Fund. 2012. “UN Commissions on Life-Saving Commodities for Women and Children.” https://www.unfpa.org/sites/default/files/pub-pdf/Final UN Commission Report_14sept2012.pdf.

World Health Organization. 2013. “WHO recommendations on Postnatal care of the mother and newborn.” https://www.who.int/maternal_child_adolescent/documents/postnatal-care-recommendations/en/