INTEGRATING OXYTOCIN INTO THE EPI COLD CHAIN

RHSC Innovation Fund

FINAL REPORT

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Management Sciences for Health

Submitted by: Jane Briggs

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INTRODUCTION

Postpartum hemorrhage (PPH) remains one of the major causes of maternal mortality. All women who carry a pregnancy beyond 20 weeks of gestation are at risk for PPH and its sequelae. The World Health Organization (WHO) recommends oxytocin as the most effective medicine to prevent and treat PPH, particularly for facility-based births.[1] Most countries have included oxytocin in their standard treatment guidelines and essential medicines lists; however, to keep its potency and effectiveness, oxytocin must be maintained at a temperature between 2°C and 8°C throughout the supply chain, with only brief exposure to higher temperatures.

In many low- and middle-income countries (LMICs), where cold chain systems for essential medicines are weak, the average annual temperature is above 25°C. Thus, the quality of oxytocin used at lower-level health facilities and by community midwives, who provide most services in peri-urban and rural areas, is questionable.

In most countries, the Expanded Program for Immunization (EPI) has dedicated resources and capacity building to maintain the cold chain for vaccines from the countries' ports of entry to the point of services. A cost-effective solution to the oxytocin cold storage problem would be integrating it into the already functioning EPI cold chain. WHO and UNICEF released a joint statement declaring that countries may choose to integrate other products, including oxytocin, into the EPI cold chain to ensure their quality.[2] Such integration would benefit the most at-risk women in LMICs by ensuring that they receive the quality product needed to keep them from dying from PPH.

Management Sciences for Health (MSH) is a regular member of the Maternal Health Supplies Caucus (MHSC) subgroup of the Reproductive Health Supplies Coalition (RHSC) and was awarded this grant from the RHSC Innovation Fund to contribute to an objective of the MHSC work plan: to increase awareness and develop strategies to ensure availability of quality-assured maternal health supplies, specifically in developing advocacy material to promote integration of oxytocin in cold chain for improved storage. Under the grant, MSH conducted scoping studies in three countries. Based on the studies' findings on acceptability and feasibility, Uganda was selected to receive further support to integrate oxytocin into the vaccine cold chain.

Goal and Objectives

Our proposed project goal was to facilitate the integration of oxytocin into the EPI cold chain by conducting an options analysis, securing political commitment, and implementing a phased pilot in one country.

Objective 1: Interest among the ministries of health (MoHs) in three countries regarding the integration of oxytocin into the EPI cold chain gauged through advocacy meetings; based on the advocacy engagement, one country is selected to conduct feasibility and options analyses

[1] WHO recommendations: uterotonics for the prevention of postpartum haemorrhage. Geneva: World Health Organization; 2018. Available at: https://apps.who.int/iris/bitstream/handle/10665/277276/9789241550420-eng.pdf?ua=1&ua=1

[2] WHO and UNICEF. Temperature-sensitive health products in the expanded programme on immunization cold chain. May 2015. Available at: https://www.rhsupplies.org/uploads/tx_rhscpublications/EPI-cold-chain-WHO-UNICEF-joint-statement_A4_rev2_5-14-15-3.pdf

Objective 2: Options analysis and recommendations developed through stakeholder engagement in one country

Objective 3: Options analysis and resulting recommendations regarding integration in one country are documented and shared

Objective 4: Phased implementation of integration of oxytocin into cold chain in one country

SUMMARY OF PROGRESS ON ACTIVITIES

MSH conducted a scoping exercise in three countries—Kenya, Malawi, and Uganda—to assess the acceptability and feasibility of integrating oxytocin into the vaccine cold chain. The consultants recruited for this exercise interviewed a variety of stakeholders, including the reproductive health and maternal and child health, health services, and pharmacy departments; nursing division; central medicines warehouse; immunization program; implementing partners at the central level; and district and health center staff.

A strengths, weakness, opportunities, and threats (SWOT) analysis was conducted in each country (annex B) to facilitate the selection of the country in which to support an options analysis and small-scale implementation. In Kenya, given reduced donor funding and the resource demands for the still nascent devolved health system, use of the vaccine refrigerators could be an option rather than setting up a parallel infrastructure for oxytocin. However, there seemed to be strong resistance from the vaccination program due to the potential risk of health workers confusing vaccine diluent and oxytocin and the effect on public perception of the vaccination program. Much advocacy and consultation would still be required to move forward the possibility of integrating oxytocin into the vaccine cold chain and safeguarding against the perceived risks. In addition, the country is considering the option of heat-stable carbetocin to prevent PPH; however, this would not eliminate the need for oxytocin to treat PPH or other non-PPH-related indications.

In Malawi, although the proposal to integrate oxytocin into the EPI cold chain was perceived as feasible by interviewees from the MoH and other stakeholders, the majority of national-level managers and pharmacists were not in favor of the proposal. At the district and health-center levels, integration was seen as a valid option to consider as long as procedures were put in place to avoid any detriment to the vaccine cold chain. However, without national-level approval, this would not be possible in the short term. In addition, the Malawi MoH elected to procure an oxytocin product that is not labeled for storage in the refrigerator and therefore claims that integration of this product into the cold chain is not needed. This is not necessarily true as conditions cannot be controlled at district stores and health facilities to be sure they do not exceed 25°C, and it has been shown that oxytocin ampoules formulated for non-refrigerated storage showed similar stability to those labelled for refrigeration and should not be interpreted as offering a more stable alternative.[3] Additionally, confusion was created as the donor-procured oxytocin product was labeled for refrigeration. As a result, we recommended that stakeholders review the selection of the product and study the quality of products in the system to determine their effectiveness with the current storage practices.

In 2017, the Uganda MoH had already directed health facilities that lack appropriate cold chain facilities for oxytocin to use the EPI cold chain equipment and systems when available and more than 600 refrigerators with oxytocin compartments had been procured by GAVI, but the directive had not systematically been applied. Thus, Uganda was selected as the country to support the integration of oxytocin into the vaccine cold chain. In addition, there was an opportunity to leverage the work of the MSH bilateral supply chain project (UHSC) in the country.

[3] Nguyen T, Lambert P, Minhas RS, *et al.* Temperature stability of oxytocin ampoules labelled for storage at 2°C–8°C and below 25°C: an observational assessment under controlled accelerated and temperature cycling conditions. *BMJ Open* 2019;9:e029083. doi: 10.1136/bmjopen-2019-029083

MSH held an options analysis workshop in Uganda in July 2019 with stakeholders from the MoH vaccines and essential medicines' supply chain, RMNCAH programs, implementing partners, and development partners. The objectives of the workshop were to determine at what level it would be best to implement the integration, choose the most feasible option(s), and draft an implementation plan. The outcome of the workshop was a recommendation that integration at the district and health facility levels is currently the most feasible option in Uganda. The workshop also called for the formation of an integration task force (ITF) to guide the integration, with participation by stakeholders from the EPI Program; National Medical Stores; pharmacy departments; Reproductive & Infant Health Division; USAID-funded RHITES-EC Program, an implementing partner providing district support; and a few heath districts. The ITF was formed in an initial meeting in Jinja in late July 2019, with the objective to develop guidelines and standard operating procedures (SOPs) for the integration of oxytocin into the vaccine cold chain at the district and health facility levels and to select the districts and health facilities to serve as demonstration sites.

The next phase was to implement integration of oxytocin into the vaccine cold chain in two districts: Bugiri and Mayuge. The districts were selected on the criteria of presence of partner support (RHITES-EC Program) expressing strong interest in supporting the integration process; average monthly facility-based births; presence of newly installed vaccine refrigerators with an oxytocin compartment; and, most importantly, interest from the district health office.

During this phase, the integration task force supported the demonstration sites by preempting challenges and leveraging opportunities. The ITF, with MSH support, developed a number of draft resource documents that were revised along the course of the four months of implementation. These documents include:

- Guidelines for implementation of oxytocin integration at the district and health facility levels
- SOPs and visual aids for use in the maternity unit, with the health facility EPI fridge, and at the district vaccine store
- A tool for tracking cold chain equipment taken from the district vaccine store
- A tool for tracking oxytocin balance and change of ice packs on the maternity ward

The two demonstration districts integrated oxytocin into the vaccine cold chain as described in the guidelines and SOPs, specifically targeting 34 health centers (1 HC4, 17 HC3s, and 16 HC2s). In the initial design of the integration activity, only HC3s and the few HC2 facilities that were equipped to offer delivery services were included in the implementation. HC4s were excluded from the project as they are expected to have adequate refrigerators to store oxytocin and should not need to use the vaccine refrigerator. However, throughout the course of implementation, we found that these assumptions were not accurate and recommend that HC4s be targeted in the expansion phase.

The practices of the demonstration health facilities were monitored through supervision from the district team, as well as three external supervision visits from MSH staff with a representative from the Pharmacy Department, in August, September, and November 2019. Some adjustments to the tools and procedures were made on each of these visits.

In December 2019, a stakeholder validation workshop was held to review the integration experience to date; review and validate the draft oxytocin integration guidelines and SOPs; and ensure the

commitment of the MoH, development partners, district-based implementing partners, and other stakeholders to scale-up use of the guidelines and SOPs in the implementation of oxytocin integration into the vaccine cold chain. During the workshop, the MoH approved the rollout plan of the guidelines and SOPs that the ITF presented and also committed to ensuring that oxytocin-specific procedures would be incorporated into general trainings and revision of other guidelines to facilitate rollout and acceptance. Additionally, the MoH committed to ensuring that the newly introduced tools–Oxytocin Stock Form and Cold Chain Equipment Tracker—be included in the health management information system manual.

Several partners and donors aligned around the scale up of this initiative and expressed their support for the roll out in their districts.

TABLE OF MILESTONE ACTIVITIES

Objectives/Activities	Indicators/Milestones	Progress
Objective 1: Interest among the ministries of health in three countries regarding the integration of oxytocin in the EPI cold chain is gauged through advocacy meetings; based on advocacy engagement, one country is chosen to conduct feasibility and options analyses	Select a country for the options analysis	Uganda was selected in March 2019.
▪ Activity 1: Conduct advocacy meetings with ministries	Meeting minutes	The consultants completed their scoping studies in Kenya, Malawi, and Uganda and produced reports.
▪ Activity 2: Share reference materials	Reference materials identified and shared with stakeholders	Consultants shared reference materials with stakeholders where there was interest.
▪ Activity 3: Select a country for the options analysis	One country identified for options analysis; MoH agrees on next steps	A scoring table was developed to facilitate the choice of country: Uganda. After Uganda was selected, presentations were made to MCH Cluster and other MoH stakeholders' fora.
Objective 2: Options analysis and recommendations developed through stakeholder engagement	Options analysis workshop conducted	Completed
▪ Activity 1: Collect information on existing oxytocin and EPI supply chains	Information collected and shared with MSH staff	A situation analysis survey was conducted in 183 health facilities.
▪ Activity 2: Plan and prepare for stakeholder workshop	Material prepared for presentation and discussion; stakeholders identified and invitations sent	A guide for the options analysis workshop was developed.
▪ Activity 3: Hold stakeholder workshop for options analysis	Stakeholder workshop	The options analysis workshop was held July 1–2, 2019.
Objective 3: Options analysis and recommendations documented and shared	Final report on options analysis	Completed
▪ Activity 1: Draft options analysis report	Draft report	Completed
▪ Activity 2: Finalize and share the draft report	Final report on options analysis; input from participants incorporated in the report Report disseminated to in-country and global stakeholders and taskforce formed to start implementation	The report was shared with the participants at the workshop, and an integration task force was formed.
Objective 4: Phased implementation of oxytocin integration into the cold chain	Implementation started in select districts; best practices and lesson learned shared for national expansion	Integration of oxytocin was implemented in two districts as demonstration sites.

Objectives/Activities	Indicators/Milestones	Progress
▪ Activity 1: Convene task force meeting	Draft implementation plan developed with roles and responsibilities	In its first meeting in July 2019, the ITF developed an implementation plan and a draft guideline of integration of oxytocin into the vaccine cold chain.
▪ Activity 2: Visit districts during implementation	Districts develop implementation plans and start integration	In August 2019, the two districts were oriented on the guidelines and how best to integrate oxytocin and developed a plan on how to implement.
▪ Activity 3: Document implementation results	Results from first phase of implementation drafted and shared with stakeholders for national expansion	An evaluation visit was conducted in November 2019 to assess the extent of the implementation. The results and lessons learned were presented at the stakeholder workshop in December 2019.
▪ Activity 4: Organize meeting to disseminate results	Stakeholder meeting to disseminate results Implementation report disseminated at global level	The stakeholder workshop was held on December 17, 2019, and the workshop report was finalized in January 2020. Rather than disseminate the stakeholder workshop report, it is more useful to disseminate the experience and the guidelines and visual aids that were developed to support districts to integrate oxytocin into the vaccine cold chain. A webinar is planned with MHSC for March 2020.

ACHIEVEMENTS

Through the investment of the RHSC Innovation Fund, MSH achieved the following:

- Integration of oxytocin into the vaccine cold chain in two demonstration districts, thereby ensuring the potency of the product is maintained:
  - Created essential reference documents to guide the implementation, including guidelines, SOPs, and visual aids. Such necessary resources had been lacking in 2017 when the MoH issued the directive allowing oxytocin integration into the vaccine cold chain.
  - Integrated oxytocin into the vaccine cold chain in 34 health centers in 2 districts. Some HC2s and HC4s also benefited and started implementing the procedures.
  - Ensured facilities utilized separate labeled storage containers for oxytocin to be kept in the vaccine refrigerator to minimize risk of accidental administration as a result of mix-ups.

- Secured high-level commitment within the MoH and from partners for integration of oxytocin into the vaccine cold chain, as demonstrated by active involvement in the process, the validation and approval of guidelines in a multistakeholder workshop, approval of the plan to scale up nationwide, and commitment to incorporate the guidelines and tools into existing MoH systems and broader guidelines.

CHALLENGES

During start-up, the project faced initial delays until three consultants were hired and approvals or authorizations were obtained to engage with the key respondents for the scoping exercise. Once this step was complete, the mapping process proceeded, followed shortly after by implementation in Uganda.

The project and the ITF encountered some initial resistance to implementation of the oxytocin integration, particularly from EPI staff at the district and health facility levels in Uganda. The concerns were in four main areas: risk to the vaccine cold chain; possibility of mixing up vaccines and oxytocin, affecting the trust in vaccination programs where fatalities occur; space constraints in the vaccine refrigerators; and risk of compromising accountability in the vaccines program if refrigerators are opened up to other staff. The project succeeded in securing EPI staff support through the alignment and involvement of the vaccine program and pharmacy stakeholders in the ITF and through effective engagement and communication strategies within the district, including conducting post-training joint supportive supervision. District visits were made by MSH and pharmacy department staff, and district immunization staff participated in the facility orientation and visits with approval from the national immunization program team. This alignment of the different teams around the integration guidelines facilitated implementation at the health facility level. The documented guidelines and procedures clarified the roles and actions of all stakeholders in minimizing risk of confusion of products and ensuring appropriate storage conditions.

Record keeping was a challenge in health facilities, and the Oxytocin Stock Form for the maternity ward was not consistently completed in a few facilities during the implementation. Measures were discussed in the joint supportive supervision visits and in the stakeholder workshop to keep the form close to the vaccine carrier and to sensitize staff on the importance of completing the tool to keep oxytocin at the necessary temperature.

While in the short term available refrigerators in health facilities should meet the requirements for oxytocin integration, if the EPI program expands to a range of vaccines in the public health system, the refrigerated storage space for oxytocin may not be sufficient. Similarly, while this is a solution for oxytocin storage, there are other medical products that also need cold chain storage, such as blood, insulin, and lab reagents. It is not possible to include all these products in the vaccine refrigerators, so separate refrigerators should be considered.

Higher-level health facilities had nonvaccine refrigerators that could be used for storage of oxytocin and other medical products, but many lack temperature monitoring devices, back-up power sources, and routine service and maintenance. The guidelines for integrating oxytocin into the vaccine refrigerators were therefore also useful at these facilities to ensure appropriate cold chain conditions. However, in the long term, joint planning for cold chain equipment by vaccine and nonvaccine cold chain actors is suggested (e.g., standardizing specifications, installing back-up power systems, preventive maintenance, training of staff).

LESSONS LEARNED

Stakeholder involvement and buy-in is essential. There are many stakeholders involved, including from the Uganda National EPI, MoH Pharmacy Department, MoH MNCH division, district teams, and implementing partners. Managing stakeholder expectations and ensuring their support and active contribution were important for success.

Ensure a **common understanding** on where integration of oxytocin should occur and why. In Uganda, oxytocin integration into the vaccine cold chain was recommended only where cold chain for the product was likely to be compromised.

Implementation guidelines, SOPs, and visual aids for oxytocin integration are important to operationalize MoH policy. The MoH directive was issued in 2017, but there had been little momentum in implementing it due to the lack of guidance on how to do so.

District and health facility staff need **training** on the procedures to ensure good practice is applied when integrating oxytocin into the vaccine cold chain to ensure that the integrity of the cold chain for vaccines is maintained.

Tools such as the Oxytocin Stock Form are necessary to ensure that ice packs in cold boxes are monitored and regularly changed and that oxytocin is replenished by midwives on the maternity ward. This strategy not only helps to ensure sufficient oxytocin in the maternity ward in adequate storage conditions but also minimizes the frequency of opening the (vaccines) refrigerator, which could compromise cold chain maintenance.

All levels of health facilities, even those with separate refrigerators for essential medicines and medical products, found the guidance on how to integrate oxytocin into the vaccine cold chain useful, given the frequent breakdown of the refrigerators.

MOBILIZED RESOURCES

Throughout all phases of the project and in all three countries, we leveraged in-country resources to enable deeper understanding of the issues affecting oxytocin integration into the vaccine cold chain. In Kenya and Malawi, the consultant and MSH project staff informally shared the SWOT analysis with some of the key informants so that it could inform decisions within other programs, even without MSH support through the RHSC grant.

In Uganda, stakeholder buy-in throughout the process was critical for the success of the intervention. Collaboration from a range of MoH teams; development agencies; academia; and implementing partners, particularly MSH's UHSC project, leveraged in-country resources and technical support that were essential to ensure continued progress and to enable sustainable investments in the outputs beyond the lifetime of this project. Support of USAID Implementing Partner RHITES-EC in the two demonstration districts was an important contribution to the implementation in those districts and will be in the roll out phase.

At the end of the stakeholder workshop, key partners such as USAID and its implementing partners and WHO committed to helping the Uganda MoH scale up oxytocin integration into the vaccine cold chain in its districts.

NEXT STEPS

In Uganda, the guidelines, including the SOPs, and the visual aids will be submitted to MoH Senior Management for approval and dissemination. The MoH committed to ensuring that current supervision tools and checklists are adapted to include monitoring of whether temperature-sensitive commodities are stored appropriately in cold chain conditions or integrated into the vaccine cold chain.

The Ministry, with support from UHSC and the Global Fund, will undertake a national assessment of the cold chain to identify gaps in cold chain equipment, including cold boxes, ice packs, and temperature monitoring devices, for joint storage of vaccines and oxytocin. This can inform procurement and redistribution of cold chain assets. It will also be the first step in documenting needs for cold chain storage of other medical products.

The Uganda experience and materials developed will be disseminated in an MHSC webinar in March 2020, and MSH will work with the RHSC to make the materials widely available. MSH hopes to translate the material into French through another project and to apply the lessons learned in Uganda to other countries, such as DRC.

ANNEX A: DOCUMENTS PRODUCED

With support from the RHSC Innovation Fund award, the project developed the following tools and resources:

Guidelines and Tools for Integration of Oxytocin in the Vaccine Cold Chain:

- Implementation Manual for Integrating Oxytocin into the Vaccine Cold Chain at the District and Health Facility Levels
- Standard Operating Procedures for Integrating Oxytocin into the Vaccine Cold Chain at the District and Health Facility Levels
- Visual aids for district vaccine store, health facilities, and maternity units
- Tools:

o District Vaccine Store Cold Chain Equipment Tracker (for temporary use of district vaccine store equipment)

o Oxytocin Stock Form

- Supervision check list

Workshop Materials:

- Guidance Document for Phase 2: Options Analysis for Integrating Oxytocin into the Expanded Program for Immunization (EPI) Cold Chain in Uganda
- Options analysis workshop in Uganda July 2019
  - Analysis of options for integration of oxytocin in the vaccines cold chain system: Stakeholder Consultation Report
  - Presentations
    1. Objectives of workshop
    2. Oxytocin integration – global agenda
    3. Findings of Uganda scoping exercise
    4. Findings of Rapid assessment
    5. Options for oxytocin integration
  - Invitation letter
  - Agenda
  - Group work documents: enablers and instructions
  - Rapid Assessment tool
- Final stakeholder workshop in Uganda December 2019
  - Stakeholder workshop on integration of oxytocin in cold chain for vaccines in Uganda: Workshop report
  - Presentations
    1. Options analysis feedback
    2. Oxytocin integration guidelines
    3. Integration pilot feedback
    4. Roll out plan
  - Invitation letter
  - Agenda

Project Research and Reports:

- Scoping study reports: Malawi, Kenya, and Uganda
- SWOT analysis for Malawi, Kenya, and Uganda (annex B)
- July 2019 ITF meeting trip report, Uganda
- Three trip reports, Uganda (August training, September supervision & November supervision)
- Oxytocin integration MoH action plan Feb 2020
- Integrating Oxytocin into the Vaccine Cold Chain to Improve Management of Post-Partum Haemorrhage in Uganda. Activity Report 2020

These materials can be found at
https://drive.google.com/open?id=1oLaW0eDB1RQjfzh2USJ5uE7ngrqgAMKs

ANNEX B: SWOT ANALYSES

Kenya

Strengths	**Weaknesses**
▪ Good and well-maintained vaccine cold chain infrastructure with efficient supply and information systems ▪ Experienced vaccine staff at all health facility levels	▪ Inadequate/no refrigerators in maternity department in many facilities ▪ Product specifications are not standardized across counties ▪ Not all counties/health facilities are aware of opportunity in policy ▪ Frequent stock-outs of oxytocin ▪ Maternity staff need to coordinate with vaccine staff for out-of-hours supply ▪ Inadequate capacity of maternity staff to manage oxytocin cold chain
Opportunities	**Threats**
▪ Exception in vaccine policy allows for authorization in disadvantaged low-level facilities ▪ Some vaccine stores in subcounty depots already keep oxytocin in the refrigerator—plenty of available, separate refrigerator space ▪ At lower levels, few staff handle medicines and vaccines, so integration is easier ▪ Occasional use of the same cold chain infrastructure in health centers to store and transport oxytocin and vaccines ▪ Capacity of vaccine staff experienced with cold chain to manage oxytocin	▪ 2013 policy guideline document states no pharmaceutical products to be stored in EPI cold chain ▪ High-level resistance to integrating the supply chain both at the national level and from the central medical stores (KEMSA) ▪ Maternity staff fear loss of control of oxytocin management ▪ Need to be able to distinguish between oxytocin and vaccines to avoid mix-ups and potential adverse events ▪ High potential for confusion between vaccine diluent and oxytocin ▪ Parallel supply chains for essential medicines and vaccines ▪ Vaccines donor funded while oxytocin is purchased and sold to counties

Malawi

Strengths	**Weaknesses**
▪ Good vaccine cold chain infrastructure with efficient supply and information systems ▪ Presence of the CMST, which can play a coordination role to harmonize the two supply chains for vaccines and medical supplies ▪ CMST delivers medicines and supplies directly to facilities	▪ No refrigerators in maternity department, and majority of health facilities in rural areas lack electricity for refrigerators ▪ Product specifications are not standardized across districts ▪ Inadequate knowledge at both the national and district levels on the storage of oxytocin (many people think the oxytocin in use now does not need to be stored in a refrigerator) ▪ Vaccines are procured through UNICEF, while oxytocin is procured through the CMST ▪ Frequent stock-outs of oxytocin ▪ Drug pilferage ▪ Lack of trust for vaccine staff to manage oxytocin ▪ Maternity staff need to coordinate with vaccine staff for out-of-hours supply ▪ Weak monitoring of oxytocin storage in facilities
Opportunities	**Threats**
▪ There is a plan to harmonize supply chains for vaccines and medical supplies ▪ Occasional use of the same cold chain infrastructure in health centers to store oxytocin and vaccines	▪ Policy taken to procure heat-stable oxytocin as solution to lack of refrigerators and power ▪ EPI policy states no other products to be stored in EPI cold chain ▪ High-level resistance at the national level, especially to integrating the supply chain from the central level at the CMST ▪ Maternity and EPI staff fear loss of control ▪ Confusion between vaccine diluent, vaccine, and oxytocin ▪ Parallel supply chains for medicine and vaccines—vaccines donor funded and oxytocin purchased and sold to districts

Uganda

Strengths ▪ Adequate stakeholder engagement at the national level among reproductive health stakeholders ▪ 2017 policy directive permits integration of oxytocin into vaccine cold chain ▪ Good vaccine cold chain infrastructure with efficient supply and information systems ▪ NMS distributes medicines to districts, and third-party providers distribute to health facilities ▪ Vaccines and oxytocin both tracked and reported in the HMIS (DHIS2) ▪ EPI supervision guidelines revised to include co-storage of oxytocin and vaccines	**Weaknesses** ▪ Poor dissemination of policy directive ▪ Job aid developed to guide implementation at health facility level but not disseminated ▪ Where facilities lack refrigerators, oxytocin is stored at room temperature ▪ Refrigerators are often lacking in labor wards, especially when the health facility has no refrigerator ▪ Confusion caused by cold chain supervisors giving different messages about integration ▪ Third-party distributors to health facilities may lack cold chain capacity ▪ Oxytocin used only up to HC3, while vaccines go to lower-level facilities
Opportunities ▪ New positive, energetic EPI program manager supports integration ▪ NMS handles both medicines and vaccines and has adequate cold chain transportation facilities ▪ NMS willing to integrate distribution of oxytocin and vaccines pending MoH directive ▪ Pilot distribution of vaccines to health facilities from districts through third-party transporters contracted by NMS ▪ Some facilities already handle oxytocin with vaccines ▪ Procurement of 600 refrigerators with oxytocin chambers	**Threats** ▪ Limited stakeholder engagement and participation from EPI program managers and cold chain supervisors ▪ Resistance among cold chain assistants at the district level ▪ Parallel supply chains for medicine and vaccines ▪ Health facilities order oxytocin off a credit line managed at NMS, while vaccines are free