Improving Health Supply Chains in Guinea

System Design as a Tool for Change

VillageReach, UNICEF and the Guinean Ministry of Health/Expanded Programme on Immunization collaborated to conduct a system design workshop on January 25-27, 2017 in Conakry, Guinea. This system design workshop was collaboratively organized and co-funded by UNICEF and VillageReach. VillageReach is a global health organization committed to addressing critical healthcare challenges in limited resource settings. UNICEF advocates for the protection of children’s rights and strives to expand opportunities for children to reach their full potential.

System design is a context-specific approach for challenging the status quo in order to increase the performance and efficiency of supply chains. The system design process creates a plan for how the immunization supply chain ought to be run, and how all components fit together and interact. It explores potential supply chain modifications such as:

- Bypassing a layer from the distribution chain;
- Optimizing the placement and utilization of cold chain equipment;
- Improving transportation network;
- Involving dedicated logisticians for data management and commodity delivery.

An effective system design process is contingent upon in-country stakeholder investment in improving the supply chain. This process involves two stages:

1) The analysis stage: This phase begins with the engagement of country leaders. Key contexts and tools are introduced to in-country stakeholders, and stakeholders map out the path toward change. During this stage, the existing supply chain is critically and thoroughly assessed. Countries are able to quantify and evaluate how the supply chain will perform under different conditions and assumptions, and analyze the trade-offs of cost, availability, and risk on supply chain objectives. From this assessment, managers are better equipped to identify the system that fits the context. The Analysis stage results in the development of an implementation plan that outlines milestone, activities, and measurement indicators of the new system.

2) The phased-implementation stage: The success of a system design is defined by how effective and efficient the new system is in practice. Conducting a phased implementation allows supply chain managers to monitor the performance of the system and introduce any necessary adjustments for subsequent phases, aligned with continuous improvement mindset. This may include a change management strategy to guide the successful acceptance of the new system.

The January 2017 workshop in Conakry represents the first stage of the system design approach in Guinea—characterizing the existing supply chain performance and building stakeholder interest and commitment. Approximately 25 attendees participated in this workshop with representation from national, provincial and health facility levels as well as local partners. This workshop focused on

1 TechNet iSC Strengthening web site, Gavi, Gates Foundation, WHO, UNICEF data management
optimizing vaccine supply chains in Guinea using the system design approach. The primary objectives of this mission included:

- Introducing the concept of Next Generation Immunization Supply Chains (NexGen iSC) and describing how the system design approach can support the realization of an optimized immunization supply chain;
- Presenting evidence-based tools and approaches that can inform future system design and supply chain optimization activities;
- Beginning to establish a supply chain improvement plan by exploring existing supply chain improvement efforts and articulating potential scenarios that could be used in system design and modeling exercises;
- Determining priority areas and action plans for initiating supply chain optimization activities.

Addressing Supply Chain Inefficiencies in Guinea

In Guinea, the EPI has developed a Vision 2020 that strategically focuses on: (1) improving transportation and distribution systems; (2) ensuring an integrated cold chain; (3) supporting effective human resources for vaccine management; (4) modernizing the information system to track vaccine use in real time; and (5) strengthening cold chain equipment performance with solar energy. The workshop in January 2017 served as a forum for identifying existing efforts that contribute to improved system design and that aim to achieve the stated goals of Guinea’s Vision 2020. In addition to this, the workshop provided an opportunity to explore innovative evidence-based approaches and solutions for achieving a responsive, flexible and highly performing supply chain.

Over the course of this workshop, with the aid of participatory activities, technical exercises, and presentations, system design was introduced. Presentations from UNICEF, SIAPS (Systems for Improved Access to Pharmaceuticals and Services) and DNPM (National Directorate for Pharmacy and Medicines; Direction Nationale de la Pharmacie et du Médicament) provided critical contextual information about the current state of the supply chain in Guinea as well as progress on existing supply chain strengthening efforts. To provide additional contextual information, representatives from UNICEF and EPI shared results from the 2015 Effective Vaccine Management (EVM) Evaluation in Guinea. This presentation provided crucial information about the current situation in Guinea, including information about the impact of the Ebola Epidemic on the supply chain and other immunization activities. In addition to this, UNICEF and EPI used the EVM assessment to highlight key areas for supply chain improvement—particularly in the domains of temperature monitoring, vaccine distribution and stock management.

Preliminary findings from a SIAPS evaluation of the pharmaceuticals supply chain displayed its performance regarding various indicators, including: supply forecasting, procurement management, and transportation means. Among The following indicators represented key areas for improvement: warehouse storage, inventory management as well as limitations in human resources and logistics management information systems. To complement the preliminary results from SIAPS, the DNPM shared a presentation on the progress to date for introducing an electronic logistics management information system (eLMIS) in 2017 and establishing a national logistics working groups (NLWG). Workshop participants collaboratively discussed recommendations, benefits, risks and mitigating factors of instituting an eLMIS. quarterly working group meetings for discussing data from the eLMIS and ensuring that eLMIS data are used to drive national-level decision-making.

Case studies of past system design work conducted by UNICEF, VillageReach and partners (in Benin, Mozambique, Ethiopia and Nigeria) were shared with workshop attendees and served as vital inspiration.
for brainstorms about future system design activities in Guinea. Another workshop activity included a root cause analysis wherein participants explored approaches for addressing the sources of the most significant supply chain obstacles. The goal of this exercise was to begin “thinking outside of the box” in terms of identifying creative and resourceful approaches to sustainable problem solving (i.e., by unconventionally leveraging available resources and relying on a government-driven approach). On the final day, participants, empowered with information shared over the course of the workshop, discussed priority scenarios to include in future modeling and, subsequently, implementation efforts. The modeling scenarios prioritized by participants included:

1. Improving vaccine availability by exploring opportunities for distribution optimization;
2. Identifying inefficient usage of supply chain resources (i.e., material, human and financial);
3. Evaluating the ways in which inclusion of the regional level impacts access to vaccines;
4. Exploring the possible impact of “level skipping” and/or changing delivery frequency for more efficient vaccine distribution.

Discussing the potential scenarios to include in future modeling efforts was an important exercise for defining priority areas in Guinea. Workshop participants were very interested in identifying good candidates for opportunistic resource sharing and for otherwise combating inefficiently resourced supply chain activities. Workshop participants were interested in using a methodically rigorous approach (i.e., computerized simulation modeling or a sophisticated Excel-based tool) to help guide future system design implementation plan and activities.

The Path Ahead

For system design work to be successful, it is critical for in-country stakeholders to drive supply chain strengthening activities. The workshop successfully allowed participants to become acquainted with and invested in the system design approach as well as with tools that have demonstrated impact for improving supply chain performance. Evaluations revealed that the workshop was useful, appreciated and well received by participants. The workshop proved that there is in-country interest and investment in improving supply chains in Guinea. Still, it is important to note that this workshop is only the beginning of supply chain transformation efforts in Guinea and that much work remains.

VillageReach, UNICEF, MoH and EPI continue to engage partners in order to explore opportunities for technical assistance, knowledge sharing and promotion of collaboration for system design efforts. Presently, efforts are under way to hire a dedicated champion in the country, a Ministry of Health resource for overseeing the advancement of system design efforts in Guinea. VillageReach, UNICEF and EPI have vetted the job description articulating the necessary competencies of this system design resource.

The workshop planning committee will continue coordinating efforts that support the realization of recommendations laid out in the final workshop report and exploring opportunities for harmonization (e.g., the SIAPS evaluation explored the classical supply chain with the exception of immunizations). Additionally, in-country efforts to transition to an eLMIS—a cornerstone to a high functioning supply chain—in Guinea are presently underway by SIAPS and John Snow, INC. The workshop planning committee is in communication with JSI and other partners to share progress to-date, to explore opportunities for continued collaboration and to identify the most appropriate parties for leading the subsequent system design planning and implementation phases.

A full (French language) workshop report is available upon request.

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