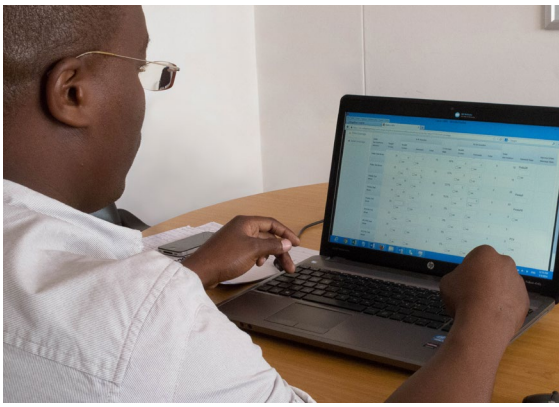
OpenLMIS

BRIEFING DOCUMENT

Mission & Vision



OpenLMIS is a powerful logistics management information system (LMIS) that strengthens public health supply chains and helps hospitals and clinics manage their inventory of lifesaving products in low- and middle-income countries. Since 2011, OpenLMIS' mission has been to collaboratively develop shared, open source software that improves access to health commodities in these settings. OpenLMIS achieves this mission by capturing and digitizing supply chain data, enabling supply chain managers to identify supply chain bottlenecks and reduce product stockouts.

The vision of OpenLMIS that "all countries have the logistics data they need to effectively manage their health supply chains leading to healthier communities" is rooted in the concept of "shared investment, shared benefit." With this approach, global investments to maintain OpenLMIS' code are shared across all user countries. Feature development in one country or program can be shared globally, avoiding the need to "reinvent the wheel" in each country, and allowing all user countries to contribute to building a stronger core software.

OpenLMIS Core Values

Shared Investment, Shared Benefit

Promoting code reuse through microservices architecture and community approach

Interoperable

Standards-based, API-driven interoperability to work with almost any other system

Configurable and Extensible

Modular architecture enables extensibility *without* forking

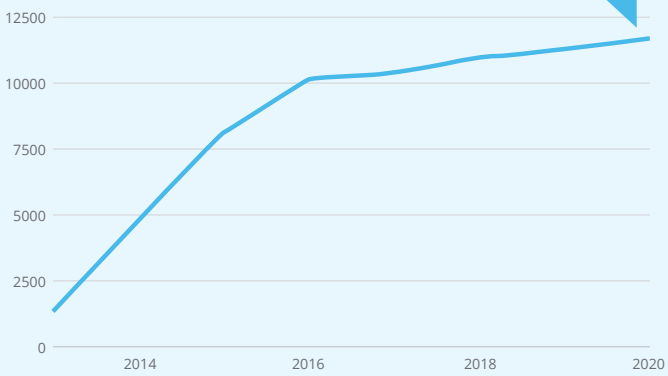
Market Penetration

OpenLMIS currently manages logistics processes at more than 11,000 health facilities across eight countries in Africa, providing ordering, reporting, and inventory management services for a wide array of health programs including for Vaccines (EPI) as well as HIV, Malaria, TB, Family Planning, and Essential Medicines. Our new instance of OpenLMIS for COVID-19 is garnering lots of interest and already has deployments planned in Zimbabwe and Cameroon (highlighted in orange on the map). OpenLMIS has the largest market share of any LMIS solution in low- and middle-income country (LMIC) markets. It has exhibited a consistent annual growth rate, reaching (on average) an additional 35.45% of new health facilities annually. A detailed table of OpenLMIS' current implementations can be found in the Appendix at the end of this document.

8 **COUNTRIES** with OpenLMIS implementations

2 **COUNTRIES** deploying new instance of OpenLMIS for COVID-19

11,000+
HEALTH FACILITIES



# of Health Facilities Using OpenLMIS

COVID-19 Response

In response to COVID-19, OpenLMIS is partnering with the Clinton Health Access Initiative (CHAI) and software development partner SolDevelo to configure OpenLMIS cloud instances for the management of COVID-specific commodities. This configuration is designed for rapid deployment and requires minimal setup cost and effort. This instance of OpenLMIS can be deployed as a standalone product or as part of an existing OpenLMIS implementation and is designed to help countries with stock management for PPE and diagnostics, as well as tracking larger value items such as ventilators. OpenLMIS for COVID-19 is aligned with WHO's product list that all international agencies will be using, which makes it easier for countries to accept and track commodities purchased and delivered by donors. Learn more about OpenLMIS' response to COVID-19 here.

OpenLMIS

CLINTON HEALTH ACCESS INITIATIVE

SolDevelo

History

OpenLMIS was born out of the need to establish architecture and reusable tools across LMICs to more systematically build global health information systems. The platform was conceived in 2008 when PATH, an international non-profit global health organization, identified health information system requirements across multiple countries. OpenLMIS was the first open source LMIS software for medical supply chains designed specifically to meet the requirements of these countries and help them take a first step toward digitization of paper-based systems.

By 2011, the Ministries of Health in Zambia and Tanzania implemented an early version of OpenLMIS and became the first two countries to share the logic of a sustainable and scalable LMIS system. Following these initial implementations, the Rockefeller Foundation and the Bill & Melinda Gates Foundation (BMGF) funded the OpenLMIS initiative and hired VillageReach to develop and manage the platform. Over time, these advances in health-related technology have enabled major improvements in health systems in LMICs, resulting in more accessible, high-quality patient care and more transparent, data-driven decision making.

In 2017, the software was re-architected with microservices and a web-based API-driven approach allowing a growing number of countries to share and extend into this common, modernized codebase. The software is updated on a quarterly basis to improve performance and add new functionalities.

Partner Network

OpenLMIS is supported by a collaborative group of partners that each play a defined role in enhancing the software and promoting its use in new countries. Together, this partner network provides the essential function of designing, enabling, and executing OpenLMIS' strategy and ensuring it meets the needs of OpenLMIS' diverse user base. Often referred to as the OpenLMIS Community, these partners include:

DONORS & THOUGHT PARTNERS

Historically, these partners have provided both funding and strategic guidance.

Bill & Melinda Gates foundation

Gavi The Vaccine Alliance

digital square

USAID FROM THE AMERICAN PEOPLE

dial Digital Impact Alliance

IMPLEMENTING PARTNERS

These partners customize and deploy OpenLMIS in country health systems, provide training and other professional services for users, and jointly bid for new country implementations.

Clinton Health Access Initiative

PATH

VillageReach

Chemonics Development works here.

JSI

TECHNOLOGY PARTNERS

These partners provide technology development and bug fixes.

SolDevelo

ONA

BAO Systems

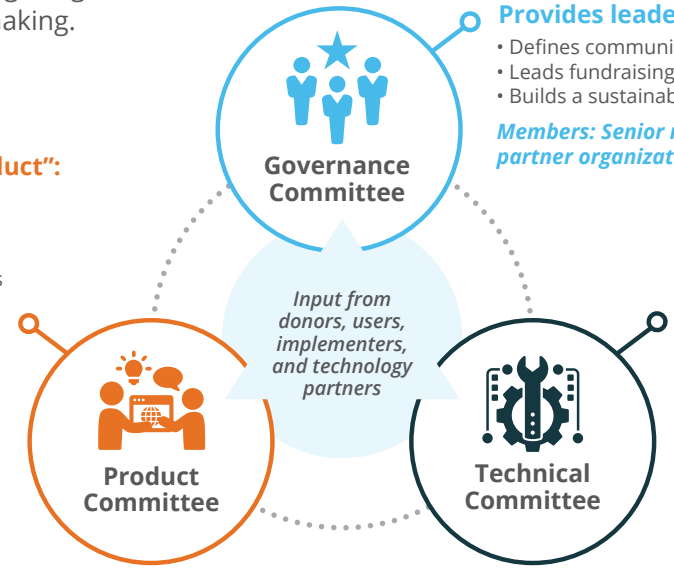
SOFTWORKS

EMPOWER School of Health

Management

The OpenLMIS Community is managed by a small team of digital health experts at VillageReach, which is a non-governmental organization that transforms health care delivery to reach everyone. The OpenLMIS management team guides software development, manages partner inputs, and promotes global visibility of OpenLMIS. To cultivate input from the OpenLMIS Community and ensure continued growth of the platform, the team facilitates three committees that each hold regular monthly or bi-monthly meetings to gather insight and inform decision-making.

As is standard for open source platforms, OpenLMIS decision-making is dictated by a Governance Committee, and hosts two other committees to guide the technical direction and quality control of the software. Together, these committees incorporate inputs from the donor, user, implementer, and technology perspectives to build a robust platform that is responsive to the needs of its users and is aligned with global health priorities.



Provides leadership to the community:

- Defines community processes
- Leads fundraising and advocacy efforts
- Builds a sustainable community

Members: Senior representatives of partner organizations

Helps "build the right product":

- Determines product direction
- Reviews contributions from implementations
- Discusses roadmap requirements & new features
- Manages OpenLMIS backlog

Members: Community partners with technical experience

Builds the products the "right way":

- Manages the system architecture
- Sets clear standards for code quality
- Determines which features & code are integrated into the global product

Members: Software developers and active OpenLMIS developers

Funding

Donors have funded the creation and implementation of the OpenLMIS platform, with the expectation that after it reaches a certain level of maturity, core development costs can be covered through other revenue streams or mechanisms (e.g., incorporated into a private sector company portfolio). **OpenLMIS is currently supported by two types of donor funding:**

CORE FUNDING is used to develop and maintain the core OpenLMIS code. Core funding capital from BMGF, USAID, and Digital Square funds the small OpenLMIS management team from VillageReach. While VillageReach possesses technical capabilities in-house, the organization also subcontracts to select technology partners, including SolDevelo, to provide technology development. Donor funding for core development and management is expected to decrease as a private sector partner takes over core functions of the platform.

IMPLEMENTATION-SPECIFIC FUNDING is deployed at the country level, through donor-funded programs (e.g., USAID's GHSC-PSM program) that support Ministries of Health. This funding contributes to the ongoing maintenance, operation, customization and upgrades of the software at a country level. This funding also typically supports many activities beyond the software or OpenLMIS-specific activities such as supply chain performance management, training, system strengthening, and data use initiatives. In the future, implementation costs will transition to Ministries of Health (as possible) and donor funding is expected to continue until that happens.

Technical Overview

In 2017, OpenLMIS redesigned the core software architecture using a microservices approach to create a more flexible and expandable product while enabling a considerable degree of configuration without having to change the source code.

This newly architected OpenLMIS version 3 (v3) also allows users to contribute improvements to the core software, which reaffirms the essential vision of the OpenLMIS community: shared investment and shared benefit.

As of OpenLMIS v3, the architecture has transitioned to microservices fulfilling RESTful (HTTP) API requests coming from both the browser client as well as the other services themselves. A modularized Reference UI application runs in a browser and uses those APIs to expose functionality to end users. Other systems and mobile apps also use the same APIs to integrate and provide functionality. A reporting and analytics platform uses a data warehouse strategy to offer visualizations of OpenLMIS data.

Extension mechanisms allow for components of the architecture to be customized without the need for the community to fork the code base:

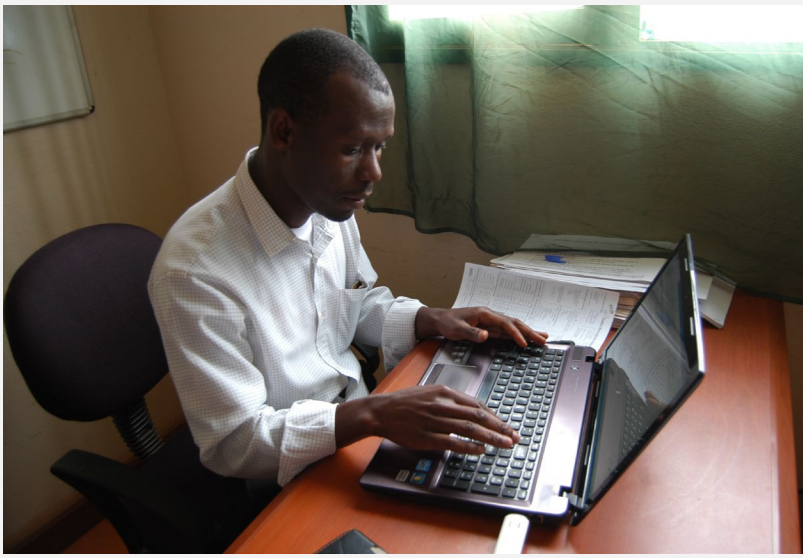
- **UI modules** give flexibility in creating new user experiences or changing existing ones
- **Extension points and modules** allow service/API functionality to be modified
- **Extra data** allows for extensions to store data with existing components
- **Reporting and analytics platform** allows for robust reporting solutions to be developed to meet implementation needs

Combined, these components allow the OpenLMIS community to customize and contribute to a shared LMIS.

Software Releases

OpenLMIS follows a quarterly software release cycle, using a common agile development process involving software 'sprints' and the submission of 'tickets' in Jira to define tasks and track progress. The **OpenLMIS software development methodology** facilitates transparent tracking of development work within the core development team, and allows input from partners.

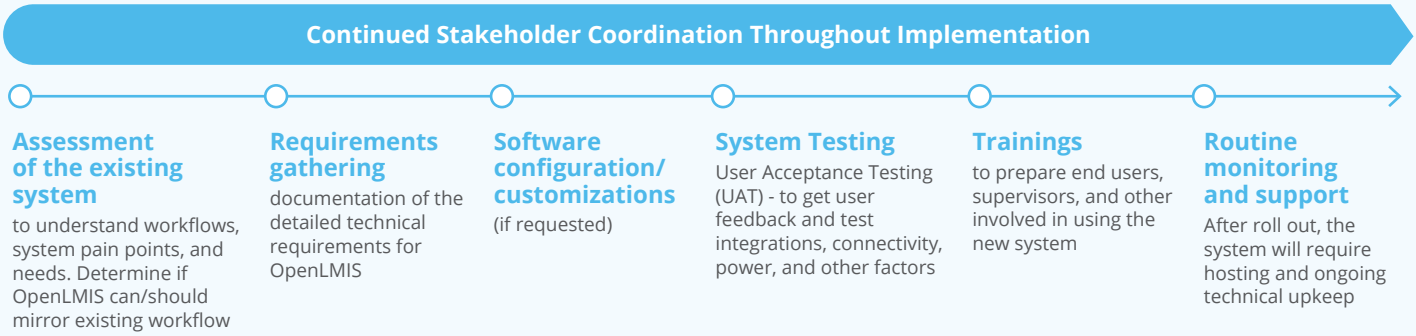
To see our goals for the upcoming year, please review the **Living Product Roadmap**. This roadmap highlights the current priorities of the community and, as the name implies, changes over time as new priorities emerge.



Implementation Operations

The OpenLMIS management team is charged with creating global awareness of the software to Ministries of Health and implementing partners around the world. When a Ministry of Health decides that they want the system to be used in their country, then OpenLMIS partners and the Ministry of Health mobilize to deploy the system at scale (usually nationally, in hundreds of health centers). There is typically a proposal or bidding process whereby the Ministry of Health articulates their desired services and timeline, then potential implementing partners respond by submitting their proposed work plans and budgets to complete the work. Once an implementation team is contracted and in place, they conduct the activities outlined in the below image. For a fuller view of the implementation process and preparations, please consult the **OpenLMIS Getting Started Guide**.

Technical System Rollout Components



Regarding timing, the actual deployment can take anywhere from an estimated 5-8 months. Where we see more variation is in the stages prior to deployment which involve stakeholder alignment, securing funding, and preparing for the deployment. Most OpenLMIS implementations are extended throughout the entire country using a tiered training and deployment approach.

After the initial rollout is complete, locally based implementation partners take over the ongoing technical upkeep in collaboration with the country Ministry of Health. This support ensures that bugs are fixed in a timely manner, configurations are incorporated as needed, and that the system is regularly upgraded to the newest version available. Implementation partners are encouraged to participate with the OpenLMIS committees to keep abreast of new software features, resources, and lessons learned from other implementers.

Resources

For a complete description of the software, consult the **OpenLMIS website**.

For more information about how OpenLMIS is deployed in countries, consult the **OpenLMIS Getting Started Guide**.

To see the software in action, consult the **OpenLMIS Youtube Channel** for software demo videos.

For more information, contact the OpenLMIS Community Manager at: **rebecca.alban@openlmis.org**.

APPENDIX

Current Implementations of OpenLMIS

Angola	**Local Name of Software:** SIGLOFA **Programs:** Essential Medicines, Reproductive Health, TB, HIV, Malaria **Implementing Partners:** VillageReach, PSM, Ministry of Health	**Year Deployed:** 2019
Benin	**Local Name of Software:** SIIL (Systeme Informatise d'Information Logistique) **Program:** Immunization **Implementing Partners:** VillageReach, Ministry of Health	**Year Deployed:** 2015
Côte d'Ivoire	**Local Name of Software:** eSIGL (Système d'Information Electronique de Gestion Logistique) **Programs:** Essential Medicines, Family Planning, HIV, Malaria, Laboratory Services **Implementing Partners:** John Snow Inc., Ministry of Health	**Year Deployed:** 2015
Guinea	**Local Name of Software:** eLMIS **Programs:** Essential Medicines, Family Planning, Malaria **Implementing Partners:** GHSC-PSM, Ministry of Health	**Year Deployed:** Aug 2018
Malawi	**Local Name of Software:** OpenLMIS **Programs:** Essential Medicines, Malaria, Reproductive Health, TB, HIV/AIDS, Nutrition **Implementing Partners:** VillageReach, GHSC-PSM, Ministry of Health	**Year Deployed:** 2017
Mozambique	**1) Local Name of Software:** SELV (Sistema Electronica de Logistica de Vacinas) **Program:** EPI **Implementing Partner:** VillageReach	**Year Deployed:** 2014
	2) Local Name of Software: SIGLUS (Sistema de Informação de Gestão Logística das Unidades Sanitárias) **Programs:** ARVs, Essential Meds, Family Planning **Implementing Partners:** GHSC-PSM, Ministry of Health	**Year Deployed:** 2015
Tanzania & Zanzibar	**1) Local Name of Software:** eLMIS **Programs:** Essential Medicines, Family Planning, HIV, TB, Malaria **Implementing Partners:** Guidehouse-JSI-VillageReach GHSC-TA consortium project funded by USAID, Ministry of Health	**Year Deployed:** 2014 national rollout (mainland) and 2015 in Zanzibar
	2) Local Name of Software: VIMS (Vaccine Information Management System) **Program:** Immunization **Implementing Partners:** PATH, VillageReach, CHAI, Ministry of Health	**Year Deployed:** 2017
Zambia	**Local Name of Software:** eLMIS Central Edition and Facility Edition **Programs:** Essential Medicines, Family Planning, Malaria, HIV, Laboratory products **Implementing Partners:** John Snow Inc. (under USAID DELIVER & SCMS), Ministry of Health	**Year Deployed:** 2014