

The need for systematic approaches to inventory management and informed resupply is chronic across multiple sectors serving the last mile. In community health alone, the UN reported that 6 million lives of women and children could be saved if there were full access to a list of 13 life-saving commodities [UNFPA, 2012]. Governments and development organizations serving the last mile need to manage an immense amount of information about the tools and supplies they need to run their operations, from medications to food, books to lab equipment, supplies are constantly being used and used up without reliable, real-time, and actionable information. While many countries have adopted the use of electronic inventory management systems, they have historically been infeasible at the last mile due to a lack of reliable power, connectivity, and resources.

Benefits of Dimagi's Technology for Logistics

To help organizations address unique problems related to supply chain, Dimagi has developed a specialized CommCare Solution called CommCare Supply, which is designed to inform and empower supervisors and supply officers with key supply information.

By proactively tracking stock among a workforce, anticipating stockouts, suggesting reorder quantities, and facilitating resupply, CommCare Supply has played a crucial role in reducing stockouts for frontline workers in countries across Sub-Saharan Africa. To date, CommCare Supply has received nearly one million stock reports from over 7,250 active facilities and more than 3,000 community health workers (CHWs) using the system.

Frontline Workers

Many frontline workers provide supply to a community, but have no reliable method of resupply; workers spend long periods without adequate stock, decreasing beneficiaries' access to quality services and essential products.

- Mobile applications enable **consistent reporting** of stock on hand and requisition orders.
- Average consumption and suggested reorder quantities are **automatically calculated**, helping users to place more accurate orders and reduce reducing time spent on complex logistics calculations.
- Automatically inferred **stockout dates** guide resupply scheduling, reducing wasted travel to pick up supplies that are not ready.
- **Streamlined requisition** process helps workers monitor the delivery schedule and improve the rationing of supplies between deliveries.
- **Tracking** orders through to delivery enables accurate communication with beneficiaries on stock availability, increasing trust and quality of service.

Supply Officers

Supply Officers often lack visibility of supply chain data and stock management at the community level; Supply Officers are unable to provide fast, accurate resupply for community frontline workers.

- Mobile reporting **reduces calculation and reporting overhead** by managing worker information over time, automatically calculating each worker's consumption level.
- **Order status** can be **effectively communicated** between Supply Officers and frontline workers, digitally tracking new requisitions, filled orders, and confirmation receipts upon delivery.
- Mobile applications increase availability of key **decision-making data**, made available both offline and through a web-based interface.

Organizations

There is a lack of visibility of supply chain data and stock management at all levels of the system; inefficiencies lead to high losses and decreased impact of services and products.

- All data generated at the last mile either through SMS or mobile applications is automatically made available in **real-time** through a web-based interface.
- The system reduces organizations' calculation and ordering burden, displaying current stock on hand for different programs and locations, and **streamlining the requisition process**.
- Data collected through the interface of scheduling resupply and tracking order delivery enables organizations to see and **predict losses**.
- Real-time data reports stock on hand and expected future consumption, identifying products in highest demand to **inform purchasing**.

Highlighted Projects

CommCare Supply was designed and built based on experiences deploying three national-level systems with John Snow International (JSI): ILSGateway in Tanzania, the Early Warning System (EWS) in Ghana, and cStock in Malawi.

ILSGateway, Tanzania

The Ministry of Health (MoH) in Tanzania, with support from JSI through the USAID I DELIVER PROJECT has deployed the ILSGateway on a national scale, with over 4,600 Tanzanian facilities active today. In Tanzania, 93% of facilities are reportedly counting stock and managing bin cards more regularly and 97% of facilities are submitting requisition reports more regularly. 82% of districts reported improved visibility into tracer commodities. Users responding to the pilot evaluation in Tanzania indicated that the increased recognition and real-time nature of the SMS system was as powerful an incentive as monetary rewards, and reporting rates for the pilot were comparable with other systems that provided a monetary reward for reporting, demonstrated the feasibility of maintaining high and consistent user reporting rates without the need for supplementary monetary incentives.

Early Warning System, Ghana

The EWS system was designed to provide real-time stock status information on reproductive health commodities to decision-makers at all levels and to provide early warning of a drop in supplies. Its goal was also to foster effective supervision of ordering and delivery, reinforce the availability of all essential health commodities by improving the timeliness and accuracy of paper-based ordering and reporting from the SDPs, prevent widespread emergency ordering by aiding districts and facilities in planned ordering through effective, automated data analysis tools. In Ghana, the USAID I DELIVER PROJECT (implemented by JSI) and the Ghana Health Service have deployed the EWS in 677 public health facilities and community health compounds across 162 districts in all 10 regions, including all antiretroviral therapy (ART) facilities, teaching hospitals and regional medical stores in the country.

cStock, Malawi

The cStock system is scaled nationally to calculate just-in-time stock needs of the over 3,000 community health workers (CHWs) in Malawi as part of the Bill & Melinda Gates Foundation-funded JSI Supply Chains for Community Case Management (SC4CCM) initiative. In Malawi, CHWs provide Community Case Management (CCM), carrying and prescribing a defined list of essential medicines such as Oral Rehydration Salts, anti-malarials, antibiotics, and family planning commodities. Built on CommCare Supply, cStock allows CHWs to use their personal phones to submit SMS with stock information, allowing community level data, previously unavailable, to be visible to decision makers at all levels of the system. A recent paper in the Journal of Global Health found that the use of cStock in Malawi contributed to significant reductions in stockout rates and lead times for resupply, as well as improvements in overall stock management [[Shieshia, 2014](#)].