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EFFECTIVE COMMUNITY LEVEL SUPPLY CHAINS FOR ICCM AND MALARIA

Integrated community case management (iCCM) by community health workers (CHWs)¹ is at the center of efforts to improve healthcare access, delivery, and outcomes in lower- and middle-income countries, including for malaria. However, the unique needs of supply chains at the community level are often overlooked or neglected. Greater attention from supply chain managers and decision-makers is needed.

CHALLENGES IN REACHING THE LAST MILE

As part of the U.S. President's Malaria Initiative (PMI) five-year strategy to reduce malaria mortality and morbidity and bring more countries toward malaria elimination, PMI identified strengthening community health systems as essential². To be successful, we need flexible and resilient supply chains that can deliver quality health products, including malaria commodities, to CHWs and the communities they serve. Currently, we are falling short in this area. This document reflects on overarching challenges, raises awareness of best practices, and provides recommendations to help strengthen community-level supply chains.

SPECIFIC CHALLENGES OF COMMUNITIES AND CHWS THAT NEED TO BE ADDRESSED



CAPACITY

- May be regulatory or programmatic limits on services or products offered
- CHWs frequently have limited formal education and training
- CHWs may not be proficient in “national” language (so materials may need to be in “local” languages)



INFRASTRUCTURE

- Often hard to reach
- Limited infrastructure (roads, electricity, internet)
- Poor conditions for product storage
- CHWs often required to travel to collect supplies



PROGRAMMATIC

- CHWs status as part of the health system may be unclear
- Lack of remuneration
- Often weak health systems and limited data visibility

CHWs are typically supplied with health products by the primary health centers to which they are linked. However, even when products are available at higher levels, they do not always get to the last mile. According to a recent review, CHWs experience stockouts of essential medicines almost one-third (29 percent) of the time and at higher rates than their health centers of affiliation (9 percent)³. The same study showed stockouts at the community level increased from 26 percent in 2006–2015 to 49 percent in 2016–2021, a trend also observed in health centers. Reasons for stockouts among CHWs include challenges in distribution (main reason), procurement, storage, and community-level stock management². A 2022 survey conducted by the Global Health Supply Chain–Procurement and Supply Management (GHSC–PSM) project in 27 countries identified stockouts at a higher level in the health system (around 50 percent of respondents) and distribution problems (around 40 percent) as the most common reasons for stockouts at the community level.

These stockouts have significant consequences for CHWs, including demotivation, loss of reputation, out-of-pocket expenses, and even job attrition. They also ultimately impact end-users, resulting in delayed care, out-of-pocket expenses to buy medicines, disruption to drug regimens, dissatisfaction, and low service utilization.

RECOMMENDATIONS TO PROMOTE AN EFFECTIVE COMMUNITY-LEVEL SUPPLY CHAIN

1. Ensure that supportive policies and systems exist and are documented

The community-level supply chain should be well documented, with written policies, guidance documents, standard operating procedures (SOPs) and specific stock management and reporting tools and forms, adapted to their specific needs all in place. These include:

- ➔ Lists of health products that CHWs are expected and approved to manage
- ➔ Forms and tools they are required to maintain and use (e.g., stock cards, report and order forms)
- ➔ A document on the structure of the community-level supply chain, describing how it fits within the overall health commodity supply chain and health system
- ➔ Written SOPs with step-by-step instructions for each process in the supply chain including:
 - Definition of **roles and responsibilities** of supply chain actors and structures
 - Detailed guidance on **requirements and processes for ordering, receiving, managing, and issuing** products at resupply points and the community level
 - Detailed **guidance on inventory management procedures** and the **requirements for storing products** at the resupply point and the community level
 - Copies of **job aids** and **stock management and reporting forms**



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Example: In **Ethiopia**, the community-level Health Extension Program has long been a priority for the Ministry of Health (MOH), reflected in the design and management of the community-level supply chain. SOPs, including forms for inventory management and reporting, are used at the community level. Health extension workers manage products for maternal and child health, malaria, and family planning, as well as vaccines, antimicrobials, and nutritional supplements. As the number of products that health extension workers manage is increasing, the MOH created a Medicines Management Handbook⁴ to provide further information on those medicines. In 2020, the Ethiopian MOH published the Roadmap for Optimizing the Ethiopian Health Extension Program 2020–2035.⁵

2. Strengthen supply chain systems and processes

- ➔ **Forecasting and supply planning** at higher levels (national, regional) should explicitly consider the needs of the community level as part of an integrated activity. This requires data on demand covered by CHWs.
- ➔ **Inventory management systems** for CHWs should be **simple enough** for CHWs to understand and use, but also be capable of generating **essential data for decision makers** to understand CHW needs. Where possible, kit systems should generally be avoided, and resupply should be based on demand.⁶
- ➔ **Financial systems:** Supply chains manage not only product flows, but also financial flows. There needs to be adequate financing to procure products and operate the supply chain down to the community level. In addition, if cost recovery is part of policy, financial systems should be designed so finance is not a barrier to product flow. Although the community level may offer services and products to priority groups free of charge, other levels may not, which introduces further complexity.
- ➔ **Capacity strengthening:** CHWs should receive training and job aids on the **basics of supply chain management**: how to maintain registers and stock, how to order products, how to manage inventory, etc. Job aids should be targeted to CHWs' needs with simple, easy-to-use guidance. Refresher training should be planned periodically to reinforce learning. Capacity-strengthening activities should also include considerations for the health facility staff that support CHWs.

Example: In **Zambia**, the MOH, supported by GHSC–PSM, trains CHWs on health commodity management for a variety of programs, including iCCM. Workshop participants receive a workbook and undergo a competency test. Also, the MOH issued a trainer's guide for the “training of trainers” on supply chain management.

3. Prioritize data visibility

Strengthening the logistics management information system (LMIS) at the community level to allow visibility of disaggregated supply and demand data is vital for accurate forecasting and routine resupply.

Over the long term, electronic systems⁷, ideally built as part of electronic community-level health management information systems to ensure sustainability, offer the best route to providing timely data but require a significant investment in time and resources to scale. Many systems, therefore, will continue to rely on paper forms in the near term and these systems should be strengthened. Absent strong systems that can generate routine logistics data, ensure that other sources of data – from surveys, supervision visits, spot checks, etc. are leveraged to guide decision making.

Example: In **Zimbabwe**, the MOH and PMI—through GHSC–PSM—redesigned the community-level LMIS to improve data visibility for CHW commodities and implemented enhanced paper-based LMIS forms, an electronic data capturing system, and more streamlined business processes. The new system improved data visibility into consumption and stock management and the overall quality of CHW data⁸, and ultimately enabled CHWs to obtain product refills based on their actual needs.

RESOURCES

¹ WHO/UNICEF JOINT STATEMENT Integrated Community Case Management (iCCM). An equity-focused strategy to improve access to essential treatment services for children, Jun 15, 2012. <https://www.who.int/publications/m/item/an-equity-focused-strategy-to-improve-access-to-essential-treatment-services-for-children>

² U.S. President's Malaria Initiative. End Malaria Faster: U.S. President's Malaria Initiative Strategy 2021–2016. https://d1u4sg1s9ptc4z.cloudfront.net/uploads/2021/10/10.04Final_PMI_Report_50851.pdf

³ Olaniran et al. Stock-outs of essential medicines among community health workers (CHWs) in low- and middle-income countries (LMICs): a systematic literature review of the extent, reasons, and consequences. *Hum Resour Health*. 2022 Jul 15;20(1):58. doi: 10.1186/s12960-022-00755-8.

⁴ Ministry of Health, Ethiopia. Medicines Management Handbook for Health Extension Workers in Ethiopia, 2016. https://moh.gov.lr/wp-content/uploads/NCHA_Supply_Chain_SOP_FINAL.pdf

⁵ Ministry of Health, Ethiopia. Realizing Universal Health Coverage Through Primary Health Care: A Roadmap for Optimizing the Ethiopian Health Extension Program 2020–2035. https://e-library.moh.gov.et/library/wp-content/uploads/2021/07/1.-HEP-Roadmap_Main-Document_Final.pdf

⁶ Institutionalizing integrated community case management (iCCM) to end preventable child deaths. A technical consultation and country action planning, July 22–26, 2019, Addis Ababa. <https://apps.who.int/iris/bitstream/handle/10665/333541/9789240006935-eng.pdf?sequence=1&isAllowed=y>

⁷ <https://www.ghsupplychain.org/analyzing-landscape-supply-chain-mobile-tools-community-health-workers>

⁸ Global Health Supply Chain Program-Procurement and Supply Management. Technical Report: Driving Last-Mile Solutions to Ensure Access to Public Health Commodities, 2022. <https://www.ghsupplychain.org/driving-last-mile-solutions-ensure-access-public-health-commodities>



QUESTIONS TO ASK ABOUT THE COMMUNITY-LEVEL SUPPLY CHAIN

When considering support to strengthen the community-level supply, try to answer the questions below:

AWARENESS AND PRIORITIZATION

1. Is the community-level supply chain a national priority? Do decision makers talk about it?
2. Is it explicitly addressed in the national supply chain strategy?
3. How aware are programs, like the National Malaria Control Program, of the realities of the community-level supply chain?

DOCUMENTATION AND POLICY

4. What range of products and services do CHWs offer? Is a standardized list of products available?
5. Are target groups covered for iCCM clearly defined?
6. Do policy barriers limit the types of products CHWs can manage, or services they can offer? For example, restrictions on providing certain injections?
7. Is the community-level supply chain fully documented?
8. Are SOPs in place that describe routine processes at each level of the supply chain to ensure products get to the community level?
9. Are standard forms (stock cards and product report/order forms) adapted for the community level and available?
10. Are job aids designed and available for CHWs to help them in their supply chain-related tasks?

DATA VISIBILITY

11. Are data available on stockouts at the community level? Is this information routinely available?
12. Is the quality of the data (in terms of completeness, regularity, and timeliness) known?
13. If the national LMIS does not provide visibility into supply and demand data from the community level, is it captured elsewhere, for example, through periodic surveys, partner reports or supervision visits?
14. Is an electronic health management information system in place for the community level? Is the supply chain included in that system?

SUPPLY CHAIN

15. When national or regional quantifications are conducted, are products needs at the community level explicitly considered?
16. Are the specific needs of CHWs considered in product presentation and/or packaging?
17. Do CHWs receive training in supply chain management (either pre-service or in-service)? Is a standardized curriculum available for this training? Does the curriculum include how to update stock status or complete a resupply request?
18. Are guidelines in place for product storage at the community level? Is practical support given to CHWs for storage? (For example, are they given cabinets or shelves?)
19. How do CHWs get their supplies? Do they have to travel to pick them up? Do they get reimbursed for travel expenses? Are any efforts made to deliver products to CHWs?

FINANCING

20. Are financial resources adequate to procure sufficient products for all community-level programs (malaria, maternal and child health, etc.)?
21. Are products offered by CHWs subject to cost recovery? Are financial processes strong enough to support resupply?
22. Are CHWs paid or provided other incentives? What are the implications of this for the supply chain?