



Characteristics of Pediatric Medicines: The Supply Chain Perspective

JSI SC4CCM Project

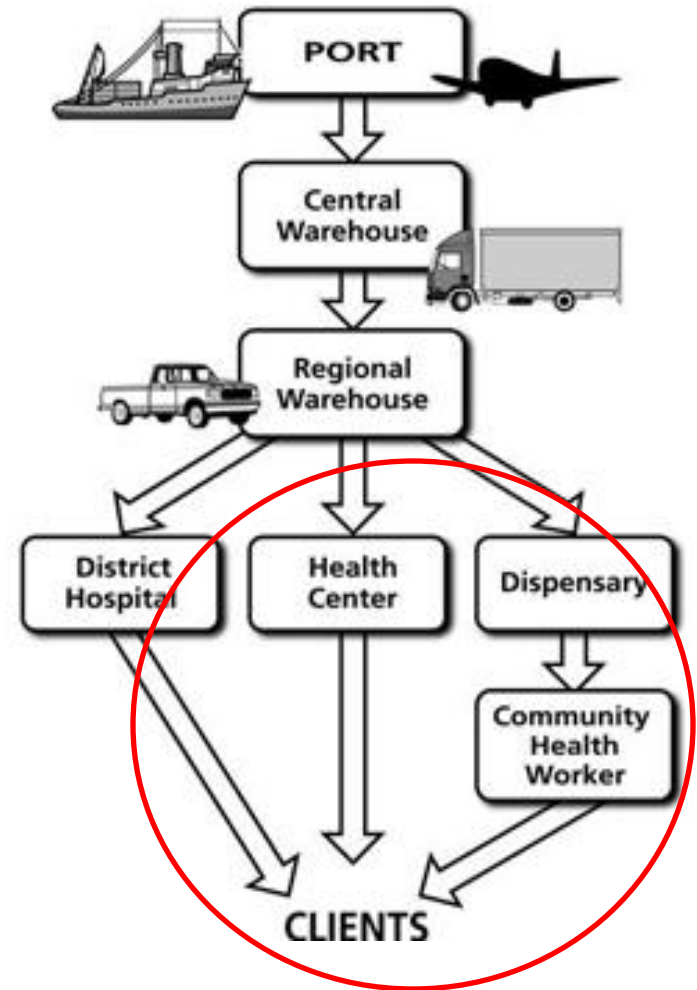
September 6, 2010

Alexis Heaton



The Supply Chain: Key Messages

- Products need to be selected with the full supply chain and end user in mind
- Community based treatment adds additional layers to the supply chain – often requires different characteristics than products used at hospitals and health facilities
- Local conditions and volumes of use by CHWs need to be taken into consideration to product specifications and design



Community Case Management Context

Community Health Workers are the last kilometer in health system distribution: moving treatment to the community level



- CHWs bring treatment to the community → improved access to treatment of common childhood illnesses and improvements in child health and survival
- Community health workers are reaching children in the most hard to reach areas in a wide variety of geographic settings and with a wide variety of products
 - Ethiopia – 30,000+ HEWs managing up to 25+ products
 - Malawi – 3,000 + HSAs managing up to 19 products
 - Rwanda – 35,000+ CHWs managing 5-8 products (~ 2/3 doing CCM)

Supply Chain Considerations

CCM creates unique considerations for products

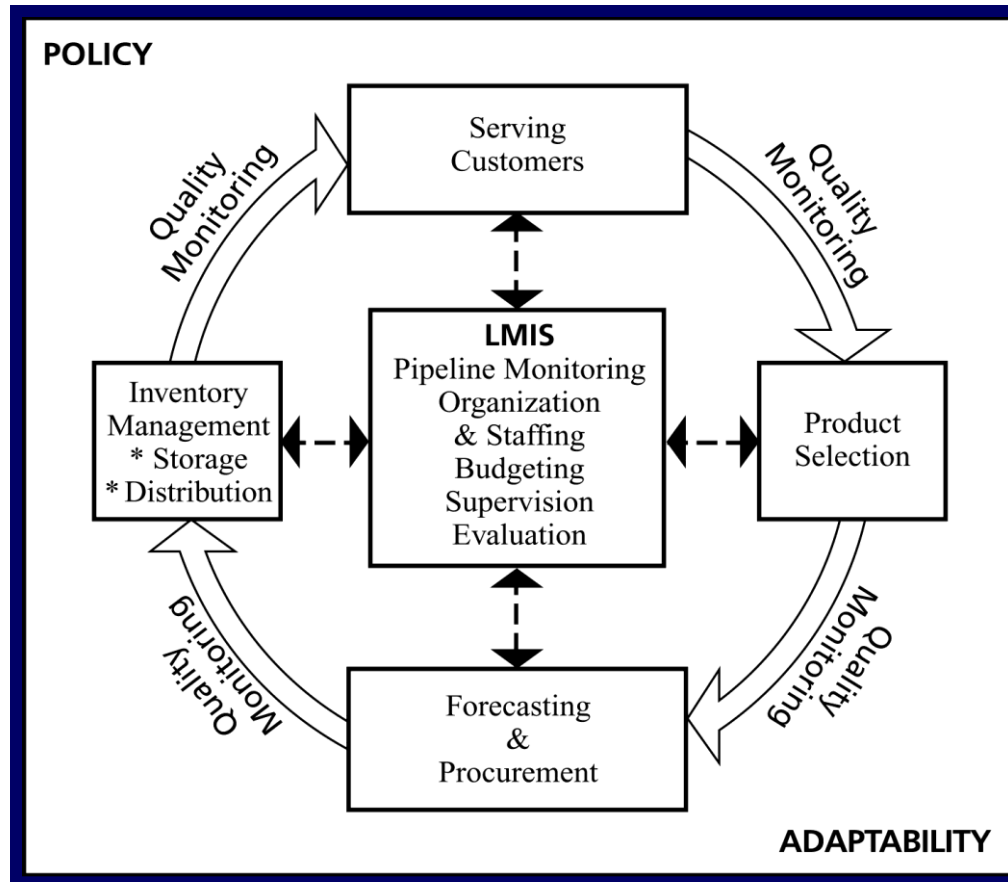
- Remote locations:
 - transit to resupply points can be long
- Use of non-motorized means to move products from resupply point to CHW:
 - such as bikes, foot, donkeys to transport products – heat and space considerations
- Lack of infrastructure:
 - limited storage space and products exposed to sunlight, heat, rain, etc. during transport and community use
 - environment is unclean for repackaging



Products need to be pediatric- and caregiver- friendly and appropriate for both the supply chain and management by the CHW



The Logistics Cycle



Product Selection



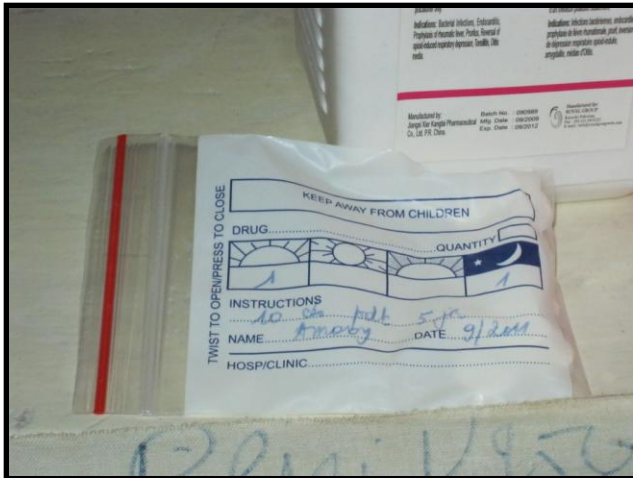
- Children and caregivers have a preference for liquids but syrups and suspensions are bulky to transport, store, and manage
 - Select high quality (stable) dispersible products when available
- Consider pack sizes and types appropriate for the setting (storage, protection from the elements, transportation means)
- Consider monthly volume of need when selecting pack size
 - i.e. if CHW only sees 50 children per month and 20 cases of pneumonia, bottles of 1000 tablets may lead to unnecessary wastage or contamination over time

Product Distribution

- Product size must be appropriate and acceptable throughout the supply chain
 - International (freight costs, product protection)
 - In-country to resupply point
 - Resupply point to CHW (often non-motorized)
 - Distribution from CHW to patients and caregivers (health posts, backpacks, drug boxes)
 - Patients to home (pill bags, paper, etc.)
- Packaging that minimizes bulk (less air)
- Packaging must protect products from the elements and damage – both as CHWs distribute them and as patients take them home



Product Storage and Packaging



- Products must be appropriate for the types of storage facilities that CHWs have
 - Reduce the number of large bottles of tablets that, after opening, are less protected
 - Space efficient while not compromising protection and information (reducing unnecessary volume/air)
- Presentations that are easily given/explained to caregivers
- Blister packs/strips when possible
 - If CHWs have to repackage loose tablets there is a risk of:
 - contamination as CHW may handle the tablets in the process
 - important information will not be written on new packaging, e.g. expiry date, clear instructions for caregivers
 - the new packaging may not protect product from high heat and moisture (esp. dispersible)

Inventory Management

- CHWs prefer products that are easier to dispense/track (i.e. Coartem) – no counting of tablets, splitting
- Consider the balance between lower dosage tabs, more tablets vs. higher dosage and splitting tablets for smaller children
 - Can the supply chain manage additional SKUs?
 - Volumes at the CHW?
 - Acceptability of product?
- Consider the pros/cons of using substitutable vs. unique products
 - In Ethiopia: Cotrim 120mg only at the community level
 - In Rwanda: Primo only at community level / Coartem at other levels



Serve Clients - Patient Acceptability

- Moving demand from health facilities to CHWs – demand creation via the availability of compelling, effective products at community level
- More user-friendly packaging – colorful, pictorial labels
- Improved flavor, taste, and ease of use (dispersible tablets)

PRIMO

Coartem® 20/120
artemether 20 mg
lumefantrine 120 mg

AMABWIRIZA: PRIMO Umuhondo ivura malariya yoroshye iterwa n'imibu ya nijoro ikwirakwiza uduterandwara.

Malariya iravurwa igakira kandi iyo ivuwe hakiri kare ntiba igikatu ngo itere ibibazo.

RANGIZA UMUTI UKURIKIJE AMABWIRIZA AKURIKIRA

1. Umwana wawe afite umuliro muhe PRIMO byihutirwa.

2. Kura neza ibinini (2) mu gapaki.

3. Sya ibinini niba atabimira.

4. Vanga umuti n'amazi meza cyangwa amata, ubuki, umuneke.

5. Hita uha umwana urwo ruvange.

6. Ongera umuhe umuti nyuma y'amasaha 8 kugeza kuri 12.

7. Ku muni wa kabiri mu gitondo, ongera umuhe umuti.

8. Ku muni wa kabiri mu gitondo, ongera umuhe umuti.

9. Ku muni wa gatatu mu gitondo, ongera umuhe umuti.

10. Ku muni wa gatatu mu gitondo, ongera umuhe umuti.

11. Umwana unyweye imiti neza, akanyirangiza akira vuba.

12. Buri muryango ugomba kugira inzitiramibu iteye umuti.

13. Kuryama mu nzitiramibu iteye umuti buri ghe birinda Malariya.

14. Hehe n'umubu, hehe na Malariya!

KOresha Umuti Ukimara Kumva Umuriro

MU GITONDO

MURUGORWA

TANGIRA

1. 2. 3. 4. 5. 6.

UMUNSI WA 2

1. 2. 3. 4. 5. 6.

UMUNSI WA 3

1. 2. 3. 4. 5. 6.

ABANA B'IBIRO kg 15 - kg 25
Abana bari hagati y'imyaka 3 na 5

Abana bari muni y'amezi 6 (kg 5) bagomba kujyanwa ku ivuriro bakimara gufatwa. Wunywe ukurikije amabwiriza. Ntuzagire uwo agabanyiriza kuri uyu muti. Tanga umuti hamwe n'ibiryo. Komeza gutanga ibiryo cyangwa konsa niba bishoboka.

Recommendations

- Products should be packaged appropriately for CCM settings
 - Heat and moisture stable
 - Protected from heat, sunlight, moisture, crushing
- Products must be a formulation that is both pediatric- and supply chain-friendly
 - Dispersible if possible
 - Taste-masked to make appealing to children and caregivers
- Products must come in appropriate strengths and pack sizes to meet the needs of CHWs, caregivers, and children in the community
 - Packed for easy dispensing and inventory management – course of treatment or blister strips
 - Age appropriate strengths to avoid tablet splitting
 - Packaged with information and pictures for caregivers to remember instructions for administration
- Consider strength of supply chain in decision to introduce multiple products vs. ability of one product to meet multiple age groups' needs

