CCEM Country Reports
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National cold chain inventory
• Information collected
  – Health and Storage facilities
    • Facility type
    • Population covered
    • Energy sources
    • Location
  – Cold chain equipment
    • Model (gives capacity and energy source)
    • Age
    • Status (working, not working)

CCEM (Cold Chain Equipment Management)
• Inventory support
• Cold chain reports
• Capacity analysis
• Planning
  – Alternate vaccine schedules
  – Equipment allocation and removal
    • Compute equipment requirements to meet capacity shortages
  – Energy analysis

CCEM Country Deployments
• Five countries have used CCEM for country inventories
  – four in Africa, one in Latin America
• Country introduction workshops
• Data analysis for country cold chain reports

CCEM Data: Electricity availability

CCEM Data: Equipment
Cold Chain Equipment Status Summary

<table>
<thead>
<tr>
<th>Overall cold chain readiness</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
<tr>
<td>Capacity by level</td>
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<tr>
<td>+ Stores (National, Regional)</td>
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<tr>
<td>- District stores</td>
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<tr>
<td>+ Health Centers (public/private)</td>
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<tr>
<td>+ Peripheral facilities (Health Posts and Dispensaries)</td>
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<td>Equipment Quality/Age</td>
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<td>Shortages with PCV 13</td>
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<td>Shortages with Rotavirus</td>
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Key Cold Chain Investment required for launch:
- Increase capacity at district and national stores for Rota launch
- Purchase cold rooms for regional stores
- Purchase new cold rooms for Rota launch
- Begin replacing old equipment prior to next vaccine launch

- Inventory data collected by WHO and EPI managers and then analyzed using Cold Chain Equipment Manager 2.0.
- Data collected from February through September 2011. High confidence in data from district and above; medium to high confidence in facility data.
- Cost per country for collection, training, analysis ranged from $50K to $200K.

Electrical Availability (B)

- All facilities
- District Stores
- Health Centres
- Health Posts

Equipment quality (B)

- Working Status
- Age Distribution

Working status identifies how much equipment is on hand, but not in use (likely retired equipment). This is an important metric for cold chain managers.
Note the large quantity of RCW42 equipment (Dometic, small gas absorption).

RA1302 is an old Dometic/Electrolux gas refrigerator.
Baseline Capacity (B)

Vaccine Introduction and Shortages (B)

Allocation for Base + PCV13 + Rota (B)

Allocation for Base + Rota (A)

Storage requirements for Health Centres and Health Posts (with Rota) (B)

Updates

- Current software: Microsoft Access requiring centralized updates
- Requirement for inventory sustainability
  - Regular updates from facilities
    - Web based updates from District level
    - Update process
  - Collaboration with HISP India to integrate CCEM with DHIS 2
- Standardize core inventory components with CCL