

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)

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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

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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

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CCEM Data: Electricity availability



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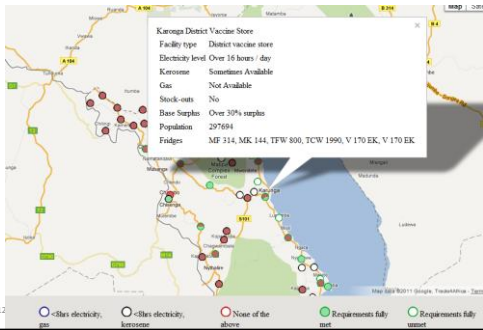
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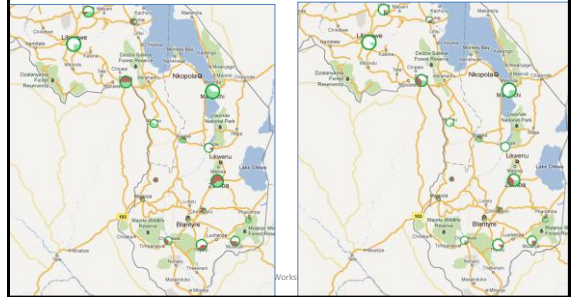
CCEM Data: Equipment



CCEM Data: Equipment



Vaccine Schedules: Base vs. Base + Pneumo + Rota



Cold Chain Equipment Status Summary

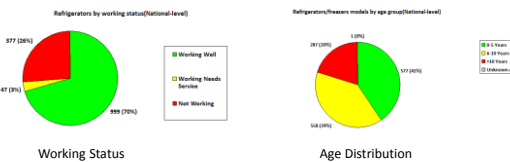
	A	B	C	D
Overall cold chain readiness	●	●	●	●
Capacity by level				
•Stores (National, Regional)	●	●	●	●
•District stores	●	●	●	●
•Health Centres (public/private)	●	●	●	●
•Peripheral facilities (Health Posts and Dispensaries)	●	●	●	●
Equipment Quality/Age	●	●	●	●
Shortages with PCV 13	●	●	●	●
Shortages with Rotavirus	●	●	●	●
Key Cold Chain Investment required for launch	Increase capacity at district and national store for Rota launch	Purchase cold rooms for regional stores	Purchase new cold rooms for Rota launch	Begin replacing old equipment prior to next vaccine launches

- 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)

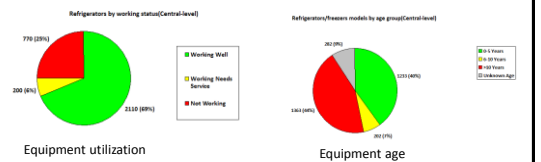


Equipment quality (B)

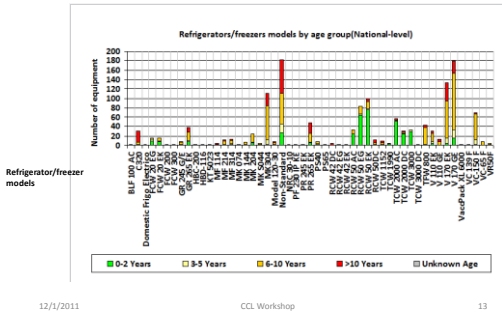


Working status identifies how much equipment is on hand, but not in use (likely retired equipment). This is an important metric for cold chain managers.

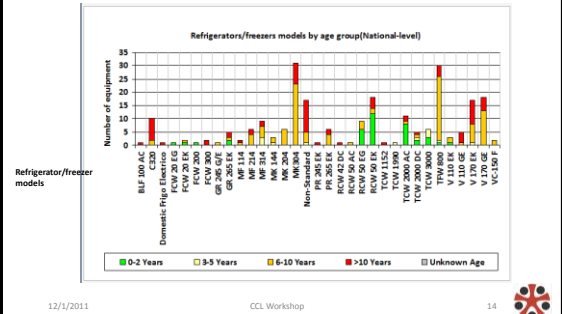
Equipment quality (D)



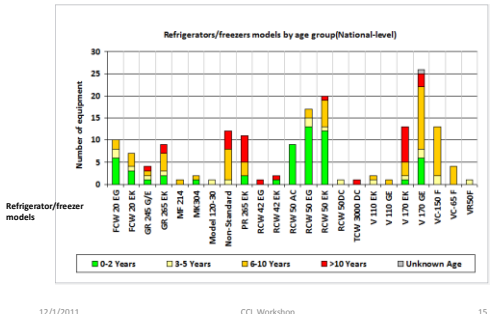
Equipment by age - all facilities (B)



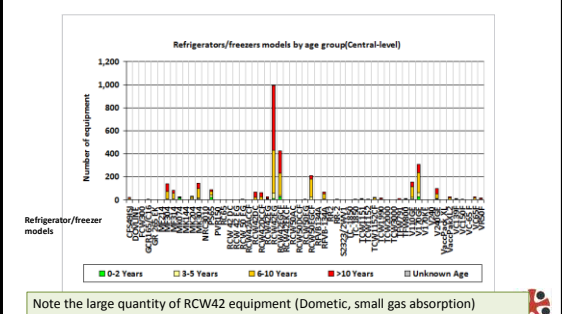
District Vaccine Stores (B)



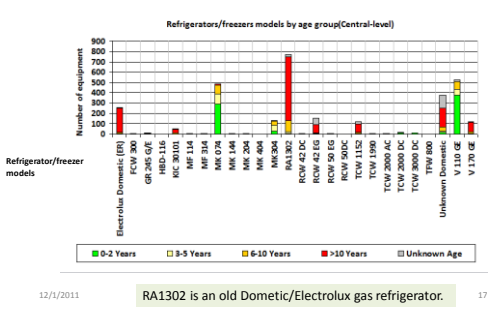
Health Posts and Dispensaries (B)



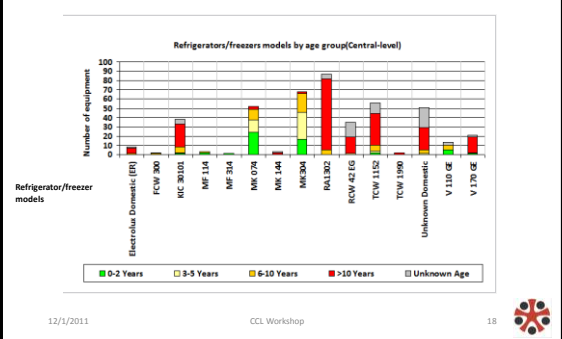
Equipment by Age group (all facilities) (C)



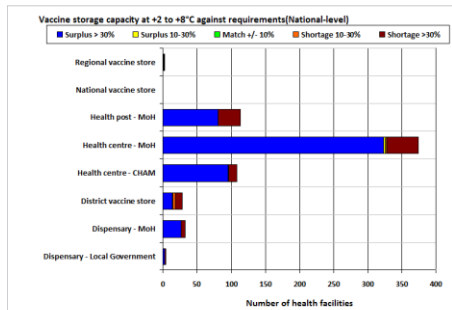
Equipment by Age group (all facilities) (D)



District Vaccine Stores (D)



Baseline Capacity (B)



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Vaccine Introduction and Shortages(B)

Current Schedule

Current with PCV13

Current with PCV13 + Rota

Admin Area/Facility Type	Total	Surplus +30%	Match +/-10%	Shortage 10-30%	Shortage >30%
Dispensary - Moit	33	27	0	0	6
District vaccine store	28	14	0	1	13
Health centre - CHAM	108	103	0	1	4
Health centre - Moit	374	344	1	2	45
Health post - Moit	113	83	0	0	30
National vaccine store	1	1	0	0	0
Regional vaccine store	3	0	0	1	2

Admin Area/Facility Type	Total	Surplus +30%	Match +/-10%	Shortage 10-30%	Shortage >30%
Dispensary - Moit	33	27	0	0	6
District vaccine store	28	14	0	1	13
Health centre - CHAM	108	103	0	1	4
Health centre - Moit	374	348	2	2	47
Health post - Moit	113	83	0	0	30
National vaccine store	1	0	0	0	1
Regional vaccine store	3	0	0	0	3

Admin Area/Facility Type	Total	Surplus +30%	Match +/-10%	Shortage 10-30%	Shortage >30%
Dispensary - Moit	33	24	0	1	8
District vaccine store	28	2	0	1	18
Health centre - CHAM	108	103	0	1	4
Health centre - Moit	374	372	17	13	44
Health post - Moit	113	78	0	1	34
National vaccine store	1	0	0	0	1
Regional vaccine store	3	0	0	0	3

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Allocation for Base + PCV13 + Rota (B)

Equipment Type	Qty	Cost \$US
Cold Room +2C to +8C	8	417,338
Upright refrigerator	100	303,121
Upright refrigerator, electricity & gas	39	66,885
Upright refrigerator, electricity & kerosene	28	68,376

Area	BK 074	BK 204	BK 404	BK304	V 170 EK	V 170 GE	WCR 15m3	WCR30m3	WCR40m3
Dispensary	3								
District Vaccine Store	7	55	8						
Health Centre - CHAM	7				3	3			
Health Centre - Moit	16				16	17			
Health Post	2				0	14			
National Vaccine Store								3	
Regional Vaccine Store									2
TOTAL	51	32	55	8	28	38	1	3	2

Equipment allocation by model and facility type

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Allocation for Base + Rota (A)

Make	Model	Equipment Type	Qty	Cost \$US
Westfoot	BK 074	Upright refrigerator	192	178,560
Westfoot	BK 404	Upright refrigerator	100	203,140
Westfoot	BK304	Upright refrigerator	106	182,452
Domestic	RCW 42 ES	Chest refrigerator, electricity & gas	133	323,890
Domestic	RCW 50 ES	Chest refrigerator, electricity & gas	177	398,260
Solar	V 170 EK	Upright refrigerator, electricity & kerosene	4	6,768
Solar	V 170 GE	Upright refrigerator, electricity & gas	71	121,763
Generic data	WCR 3m3	Cold Room +2C to +8C	1	29,252
Generic data	WCR 40m3	Cold Room +2C to +8C	6	376,430

Admin Area/Facility Type	BK 074	BK 404	BK304	RCW 42 ES	RCW 50 ES	V 170 EK	V 170 GE	WCR 3m3	WCR4 0m3
Dispensary	3			29	124	71			
District Vaccine Stores	7	180	126	88	4	71			
Health Centre	7			31	29	28			
National Vaccine Stores									6
Regional Vaccine Stores									1

Equipment allocation by model and facility type

Largest new equipment demand at the district level

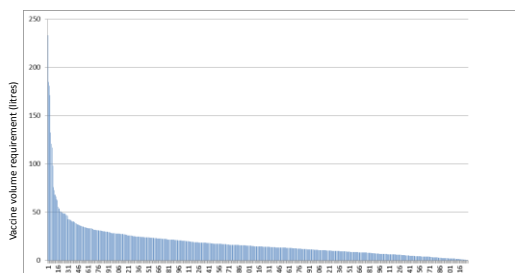
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Storage requirements for Health Centres and Health Posts (with Rota) (B)



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Facilities (in decreasing order of capacity requirement)

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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

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