

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

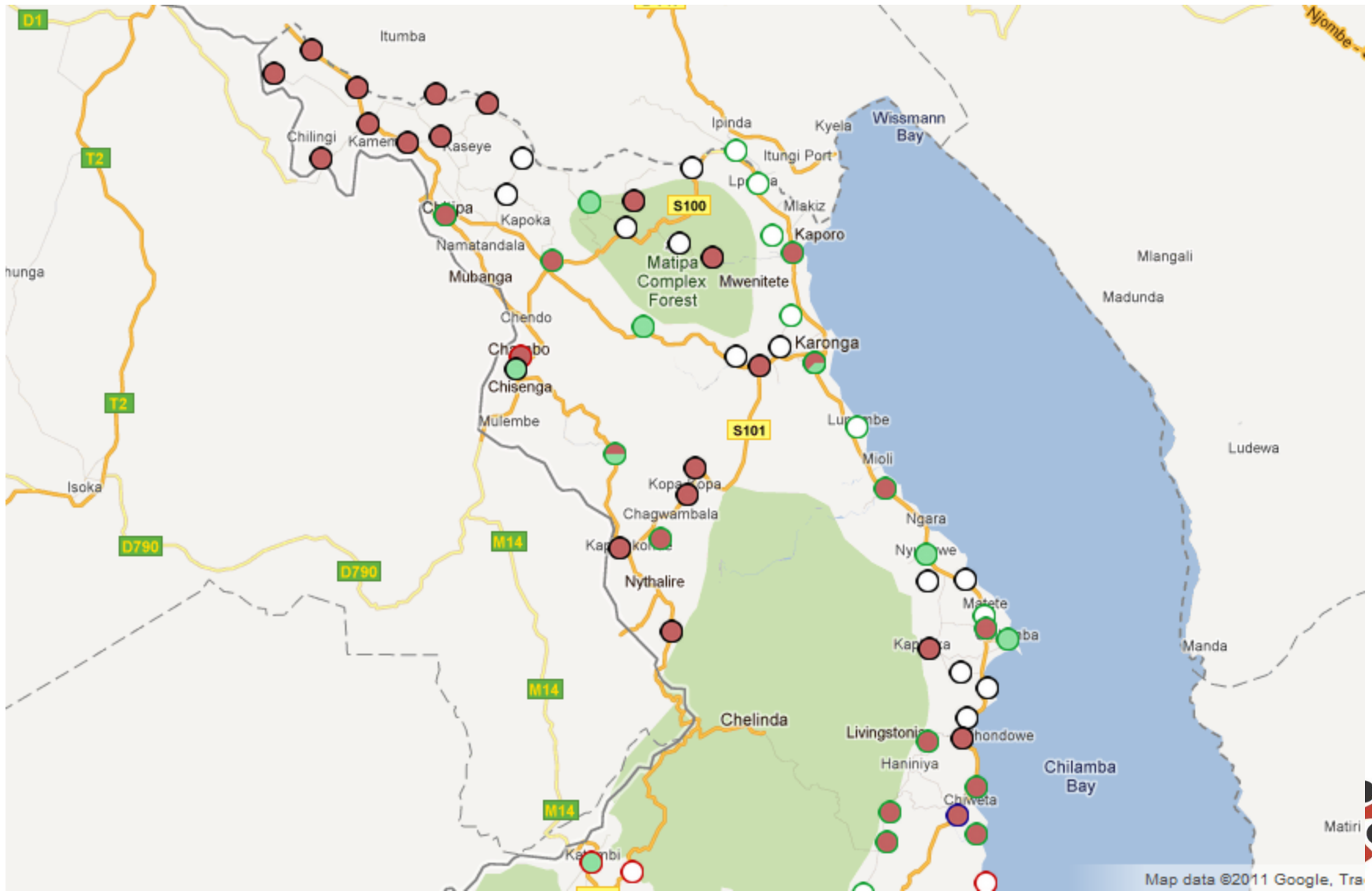
- Five countries have used CCEM for country inventories
 - four in Africa, one in Latin America
- Country introduction workshops
- Data analysis for country cold chain reports



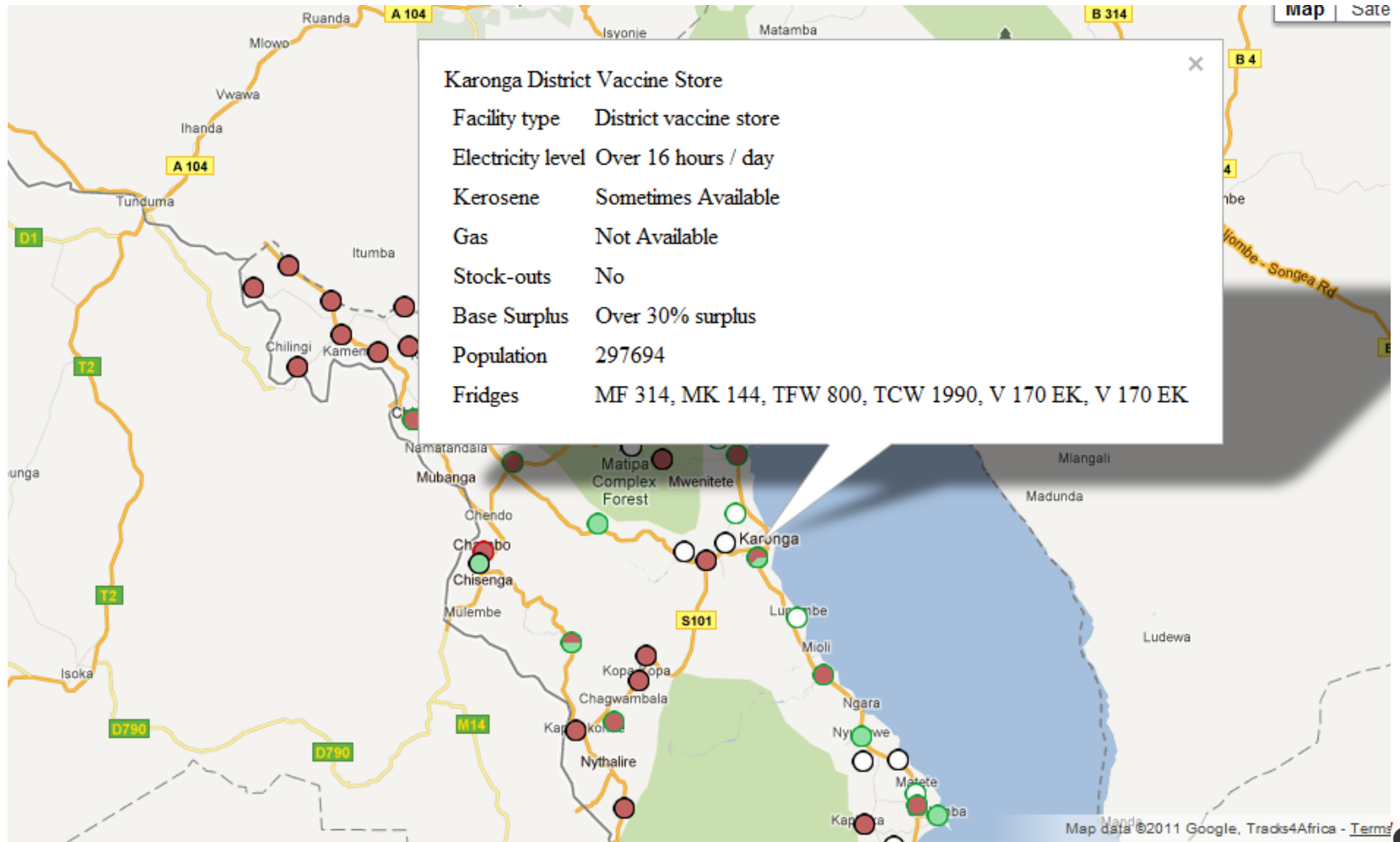
CCEM Data: Electricity availability



CCEM Data: Equipment



CCEM Data: Equipment



Vaccine Schedules: Base vs. Base + Pneumo + Rota



Works

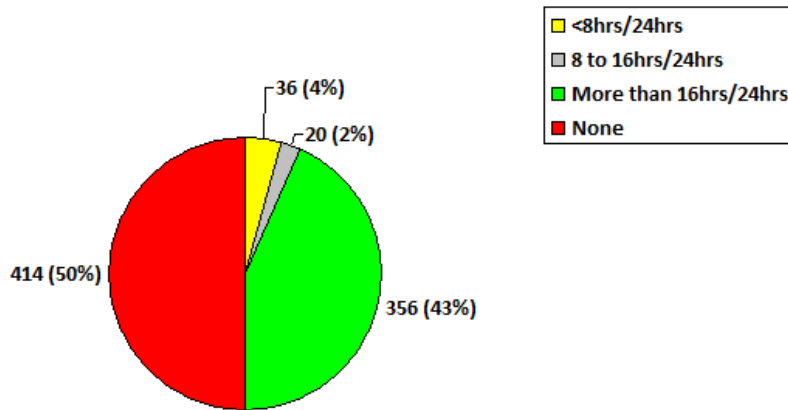
Cold Chain Equipment Status Summary

	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

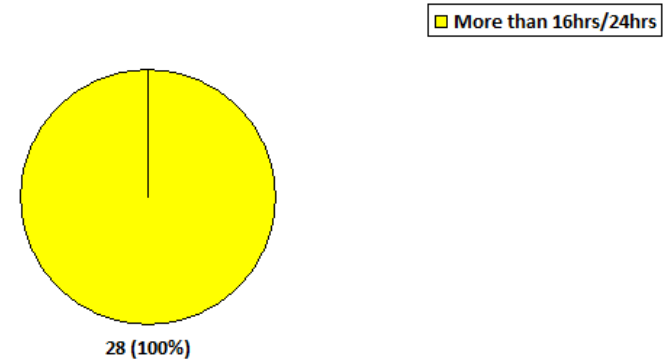
- Inventory data collected by WHO and EPI managers and then analyzed using Cold Chain Equipment Manager 2.0.
- Data collected from February through September 2011. High confidence in data from district and above, medium to high confidence in facility data.
- Cost per country for collection, training,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



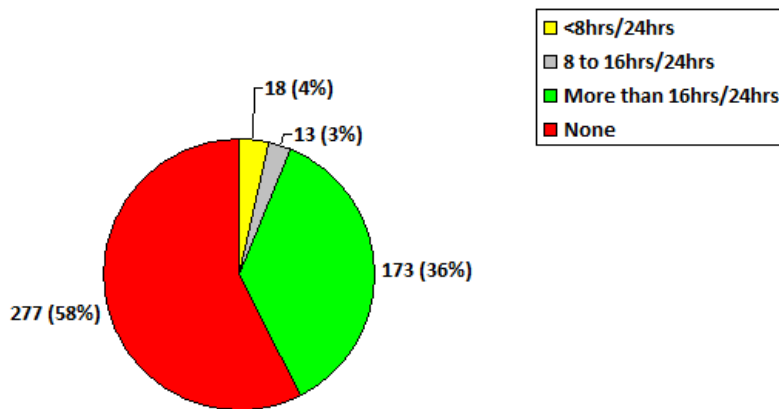
Electrical Availability (B)



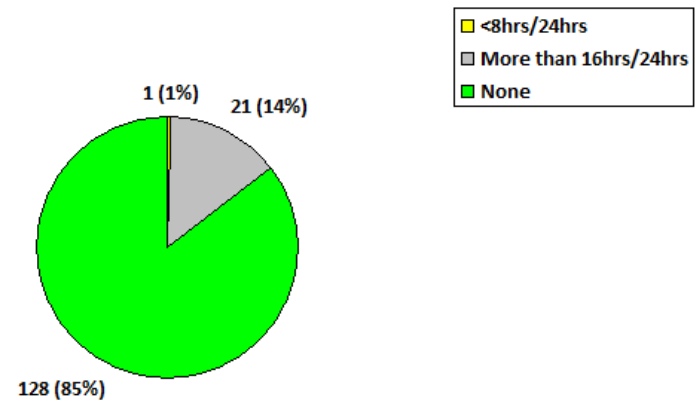
All facilities



District Stores



Health Centres



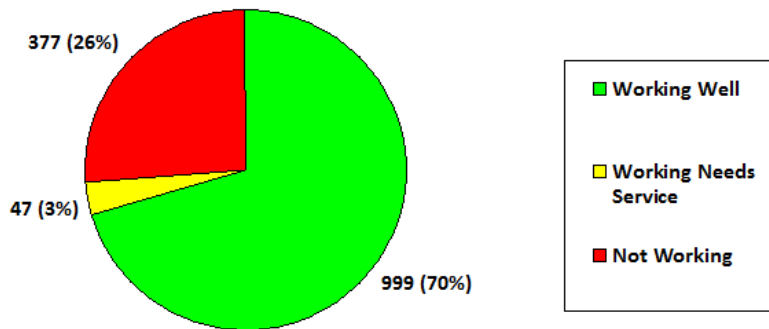
Health Posts

Workshop



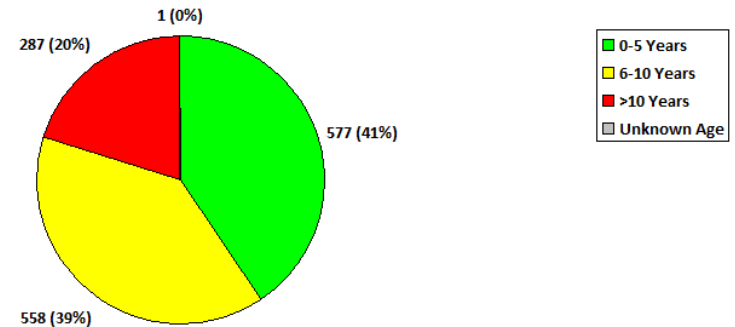
Equipment quality (B)

Refrigerators by working status(National-level)



Working Status

Refrigerators/freezers models by age group(National-level)



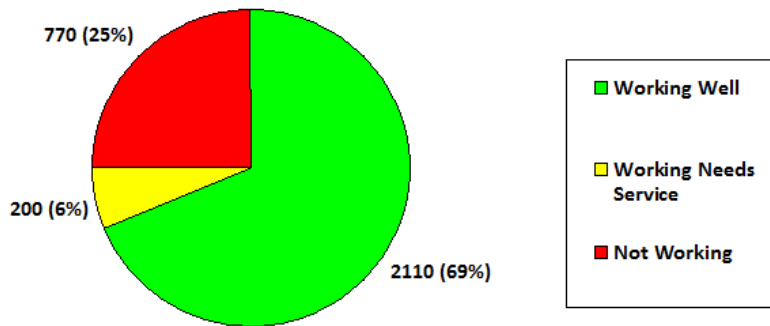
Age Distribution

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.



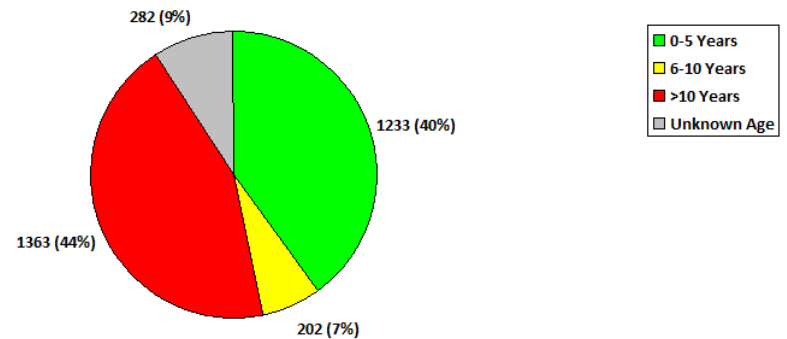
Equipment quality (D)

Refrigerators by working status(Central-level)



Equipment utilization

Refrigerators/freezers models by age group(Central-level)

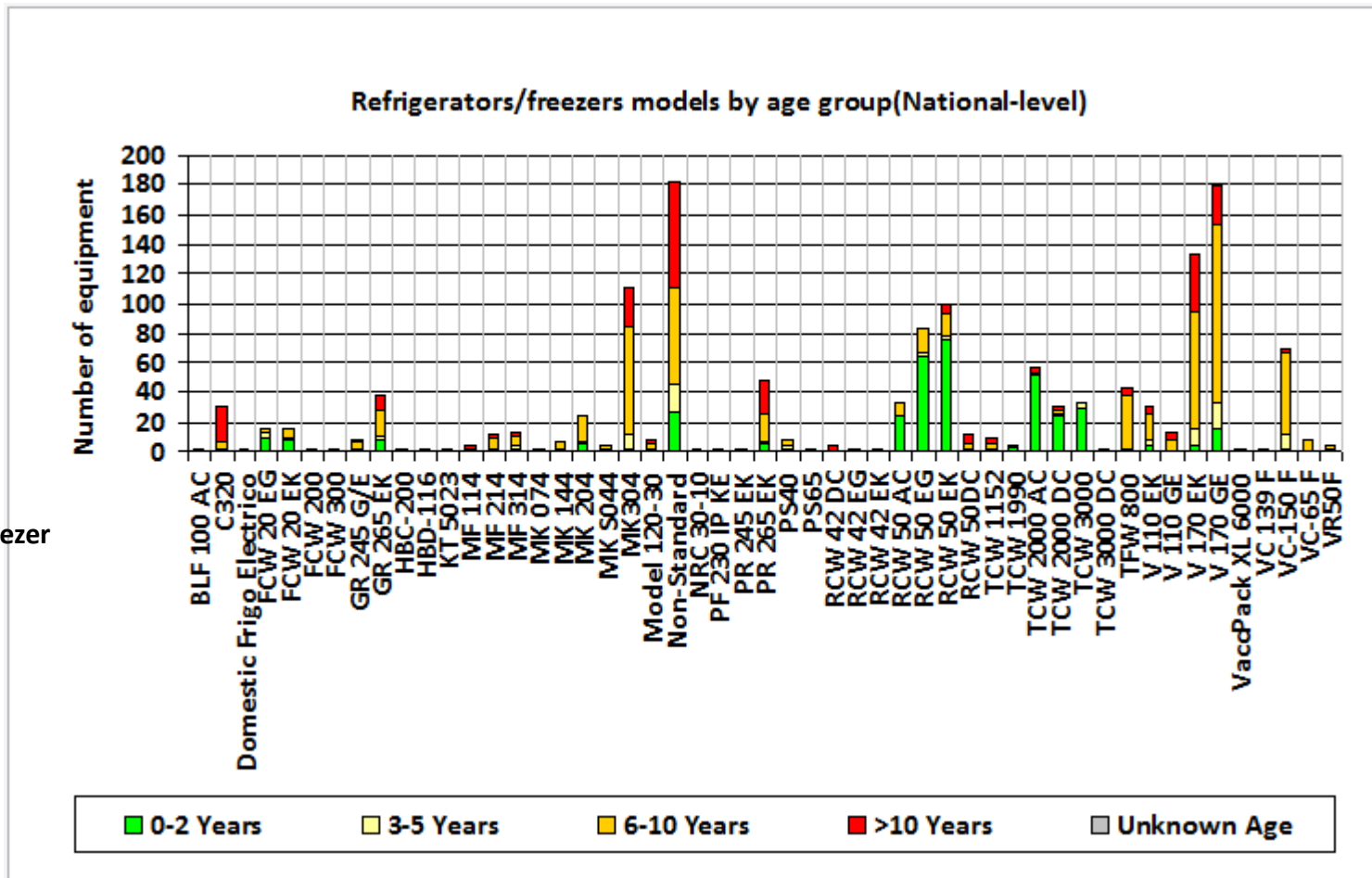


Equipment age

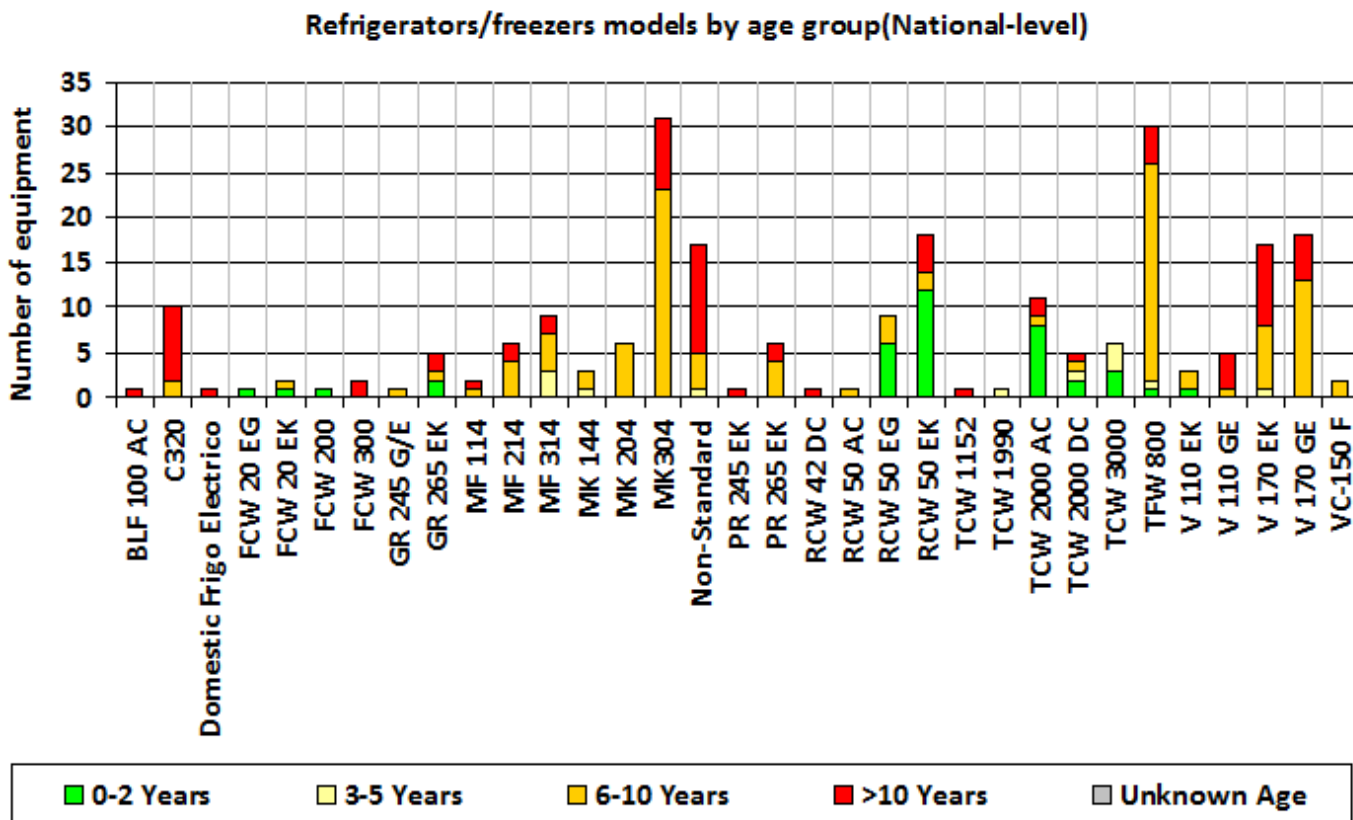


Equipment by age - all facilities (B)

Refrigerator/freezer models



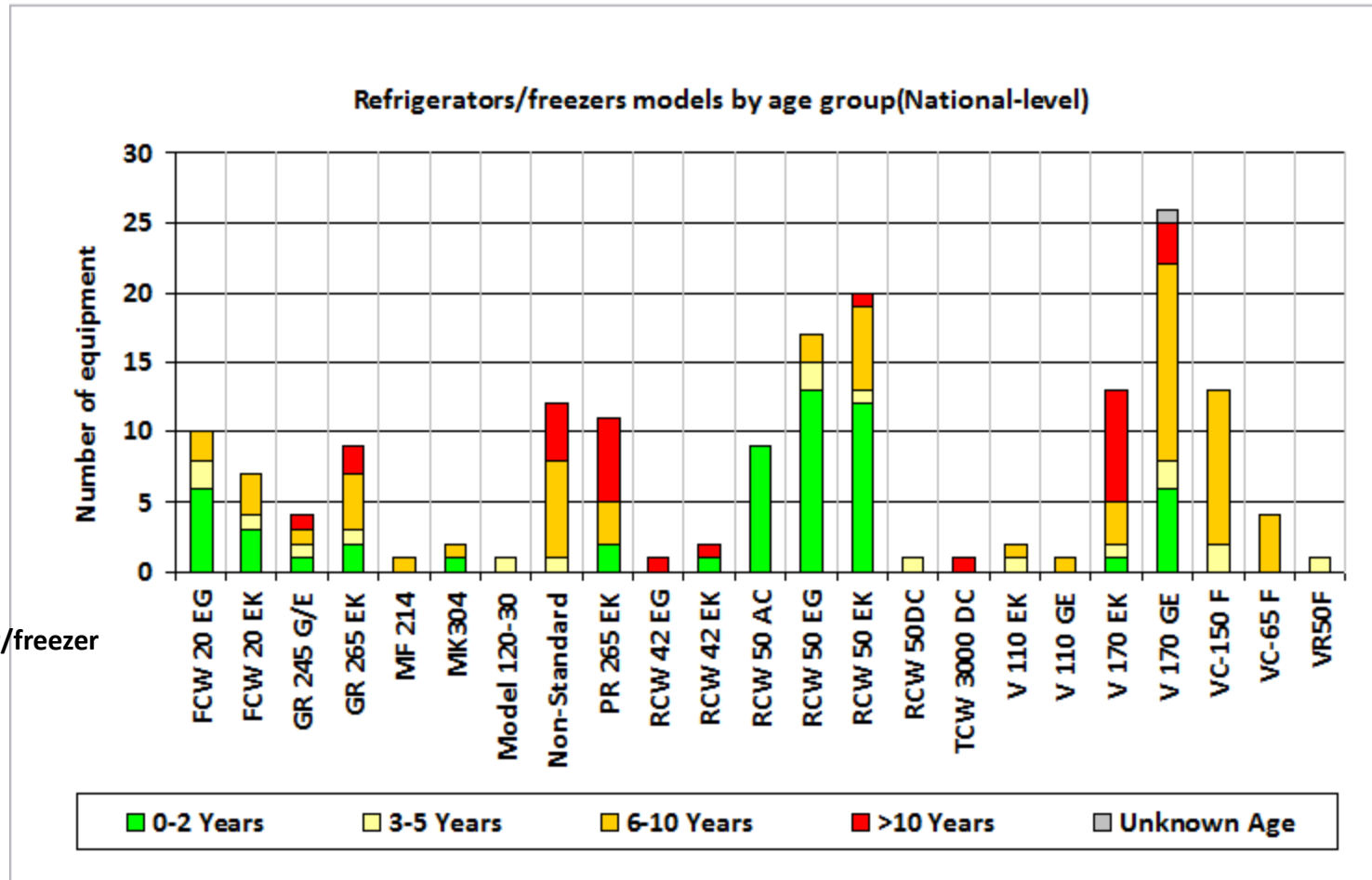
District Vaccine Stores (B)



Refrigerator/freezer models



Health Posts and Dispensaries (B)

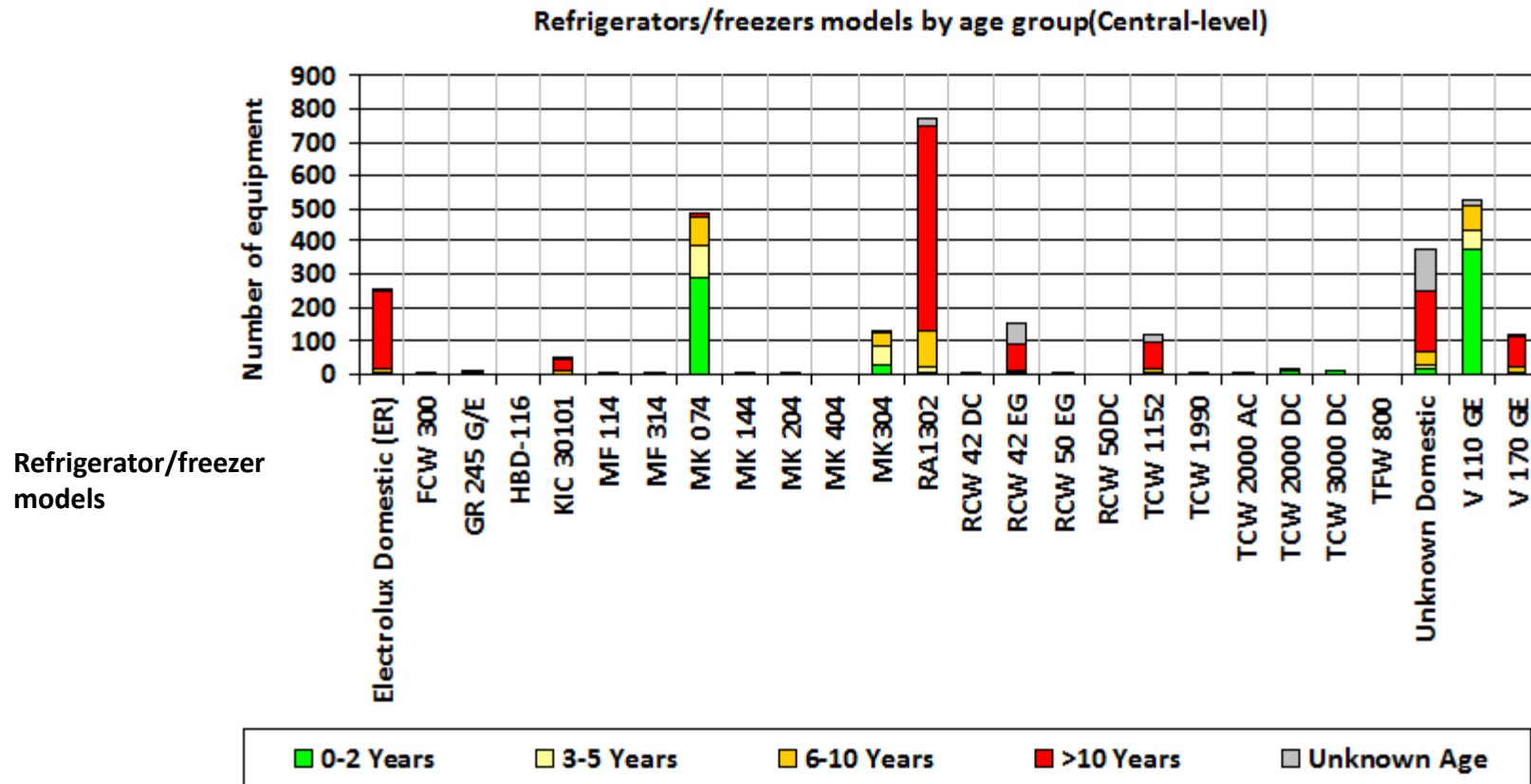


Refrigerator/freezer models



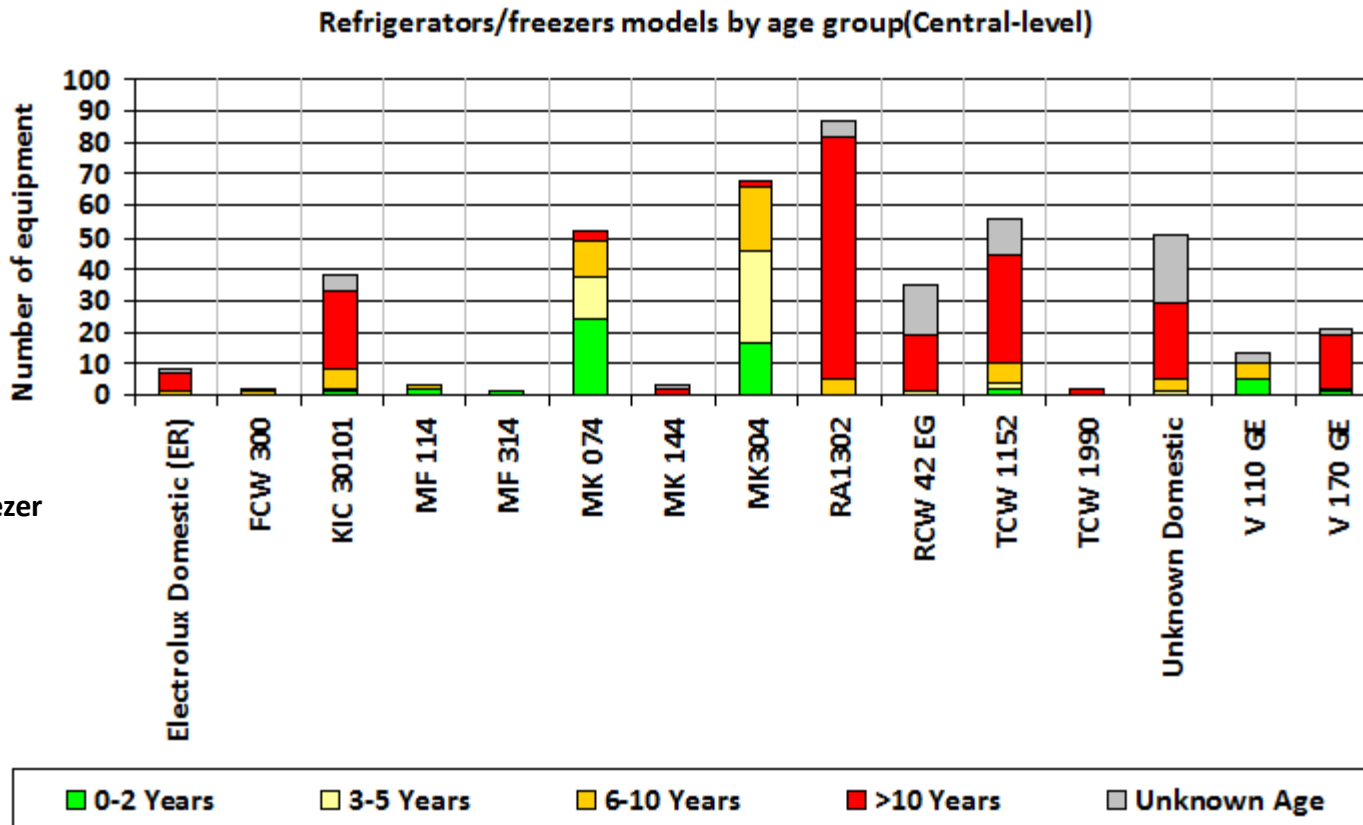
Equipment by Age group (all facilities)

(D)



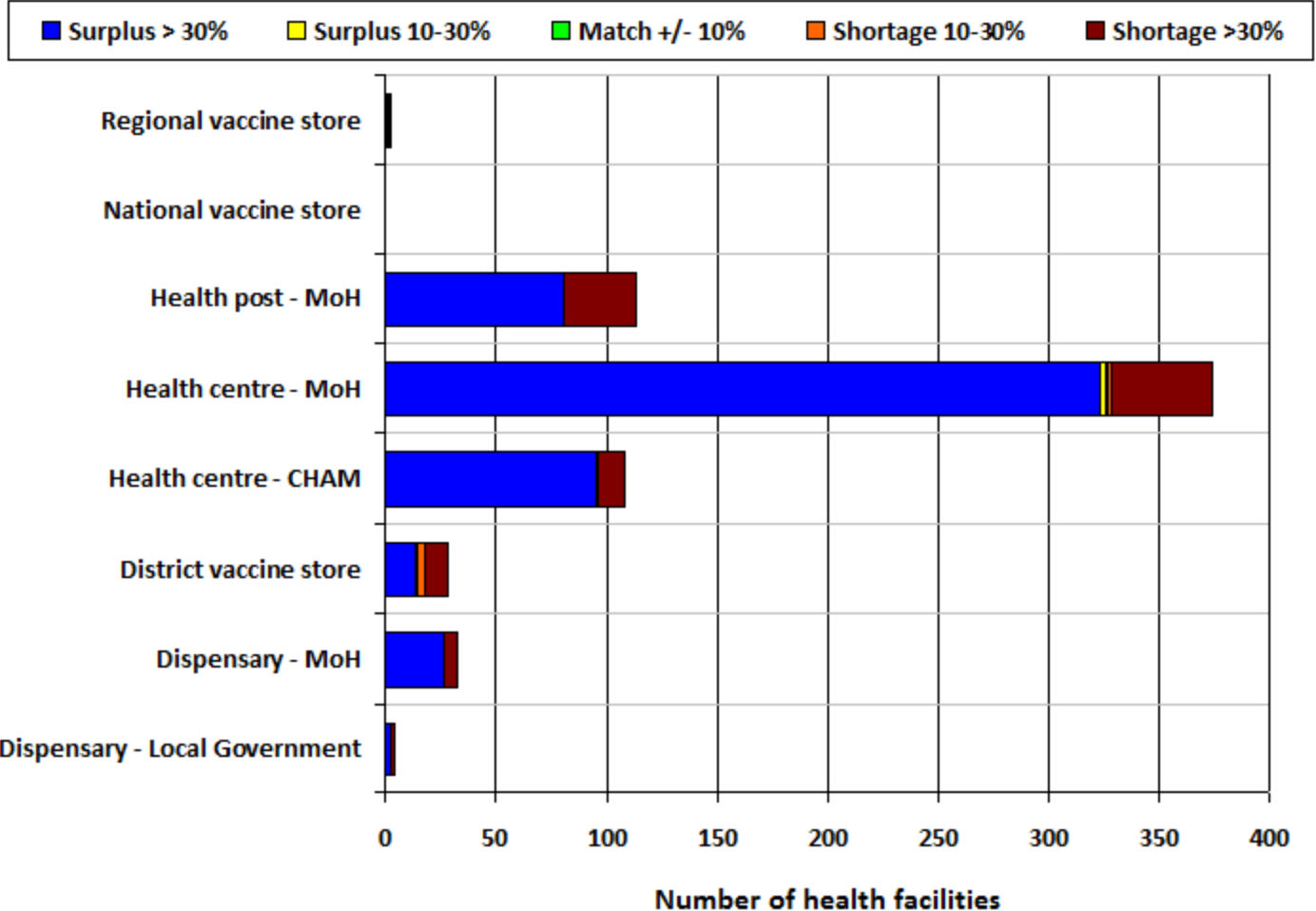
District Vaccine Stores (D)

Refrigerator/freezer models



Baseline Capacity (B)

Vaccine storage capacity at +2 to +8°C against requirements(National-level)



Vaccine Introduction and Shortages(B)

Current Schedule

Admin Area/Facility Type	Total	Surplus		Match	Shortage	
		>30%	10-30%	+/-10%	10-30%	>30%
Dispensary - MoH	33	27	0	0	0	6
District vaccine store	28	14	0	1	3	10
Health centre - CHAM	108	95	0	1	0	12
Health centre - MoH	374	324	2	1	2	45
Health post - MoH	113	81	0	0	0	32
National vaccine store	1	1	0	0	0	0
Regional vaccine store	3	0	0	1	1	1

Current with PCV13

Dispensary - MoH	33	27	0	0	0	6
District vaccine store	28	10	2	1	1	14
Health centre - CHAM	108	93	1	1	0	13
Health centre - MoH	374	318	4	2	3	47
Health post - MoH	113	81	0	0	0	32
National vaccine store	1	0	0	0	1	0
Regional vaccine store	3	0	0	0	0	3

Current with PCV13 + Rota

Dispensary - MoH	33	24	2	0	1	6
District vaccine store	28	2	1	1	6	18
Health centre - CHAM	108	87	3	1	2	15
Health centre - MoH	374	277	17	15	11	54
Health post - MoH	113	78	2	1	0	32
National vaccine store	1	0	0	0	0	1
Regional vaccine store	3	0	0	0	0	3



Allocation for Base + PCV13 + Rota (B)

	Equipment	2011	
	Type	Qty	Cost \$US
▶ Cold Room +2°C to +8°C		8	437,928
Icelined refrigerator		100	103,121
Upright refrigerator; electricity & gas		39	66,885
Upright refrigerator; electricity & kerosene		28	68,376

Area	MK 074	MK 204	MK 404	MK304	V 170 EK	V 170 GE	WICR 15m3	WICR30m3	WICR40m3
Dispensary	3				1	3			
District Vaccine Store		7	55	8					
Health Centre - CHAM		7			3	3			
Health Centre - MoH		18			16	17			
Health Post	2				8	16			
National Vaccine Store								3	
Regional Vaccine Store							1	2	2
TOTAL	5	32	55	8	28	39	1	5	2

Equipment allocation by model and facility type



Allocation for Base + Rota (A)

	Equipment			2011	
	Make	Model	Type	Qty	Cost \$US
▶	Vestfrost	MK 074	Icelined refrigerator	192	178,560
	Vestfrost	MK 404	Icelined refrigerator	180	207,540
	Vestfrost	MK304	Icelined refrigerator	186	182,652
	Dometic	RCW 42 EG	Chest refrigerator; electricity & gas	153	325,890
	Dometic	RCW 50 EG	Chest refrigerator; electricity & gas	177	398,250
	Sibir	V 170 EK	Upright refrigerator; electricity & kerosene	4	9,768
	Sibir	V 170 GE	Upright refrigerator; electricity & gas	71	121,765
	Generic data	WICR 5m3	Cold Room +2°C to +8°C	1	29,252
	Generic data	WICR40m3	Cold Room +2°C to +8°C	6	370,410

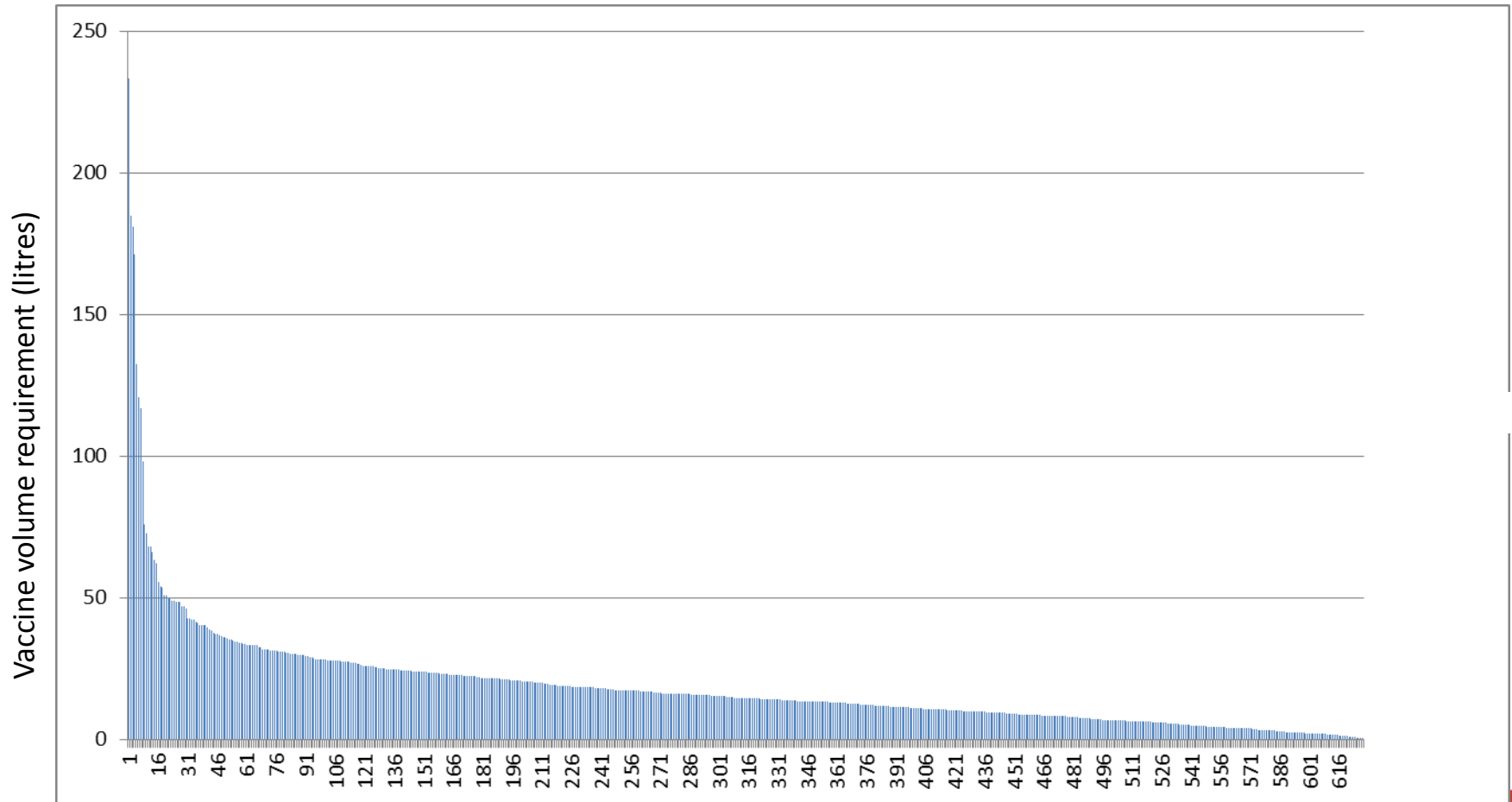
Admin Area/Facility Type	MK 074	MK 404	MK304	RCW 42 EG	RCW 50 EG	V 170 EK	V 170 GE	WICR 5m3	WICR4 0m3
▶ Dispensary	113		29	124	71				
District Vaccine Stores		180	126		88	4	71		
Health Centre	79		31	29	18				
National Vaccine Stores									6
Regional Vaccine Stores								1	

Equipment allocation by model and facility type

Largest new equipment demand at the district level



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

