



# Cold Chain Equipment

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# UNICEF Cold Chain Equipment for COVID vaccines

Vaccine storage requirement		Active equipment	Active equipment for large volumes	Passive equipment (transport solution)
2 – 8°C	AstraZeneca	Vaccine refrigerators	Walk-in Cold Rooms	Cold boxes and Vaccine carriers
– 20°C	Moderna	Vaccine Freezers	Walk-in Freezer	N/A
– 70°C (–60/–80°C)	Pfizer/BionTech	Ultra-low Freezers*	N/A	Ultra-low vaccine carrier*

\* No WHO PQS in place

# Refrigerators and freezers

- Mains powered or direct solar drive
- WHO PQS
- UNICEF Standard products
- Storage capacity: from 15L to 240L
- Ambient operating temperature: from +5°C to +43°C
- Adds on: Ft2e, eVR
- Installation (service bundle) by local service providers
- Available from suppliers in Europe and China



# Cold/ Freezers Rooms and combined options

- WHO PQS
- UNICEF Standard products
- Storage capacity: from 10 to 40m<sup>3</sup>
- Ambient operating temperature: up to +43°C
- Available from suppliers in Europe and China
- Standard services Installation, Training
- Stable power supply or generators



# Cold boxes

- WHO PQS
- UNICEF Standard products
- Storage capacity: from 5 to 25L
- Ambient operating temperature: cold life 100h
- Operating up to +43°C
- Available from suppliers in Europe and India
- Large production capacity among suppliers



# Vaccine carriers

- WHO PQS
- UNICEF Standard products
- Storage capacity: up to 3L
- Ambient operating temperature: Cold life 50 hours at +43°C
- Available from suppliers in Europe and India
- Large production capacity among suppliers



# Temperature monitoring devices

- WHO PQS
- UNICEF Standard products
- Local – Fridge tags
- Central – RTMDs
- Available from suppliers in Europe and China
- Limited number of suppliers





# Ultra-low Freezers

- Mains powered (+passive)
- No WHO PQS
- **15 models** available via UNICEF
- Storage capacity: from 80L to 890L
- Ambient operating temperature: from +5°C to +43°C
- Adds on: RTMDs, Cryogloves
- Available from suppliers in Europe and China





# UCC Equipment – Supply Challenges

## POWER SUPPLY

- Require **constant stable** mains power (no interruption no fluctuation)
- If the power is not stable an alternative power source must be put in place (i.e. generator)

## AMBIEN OPERATING TEMPERATURE

- Equipment will achieve desired cooling temperature only if operating in ambient temperature indicated by the manufacturer (should ambient temperature be higher, air conditioning must be installed)

## ONLY VACCINE TO BE STORED IN THE FREEZER

- Dedicated freezer for coolant packs for passive devices is needed
- Mixing vaccines and coolant packs in one freezer is not allowed!

## ACCESSORIES

- Cryo-gloves are needed to safely manage vaccine stock

## SOPs and TRAINING

- SOPs to operate UCC equipment should be put in place



# Current Major Challenges – CCE general

- All types of Cold Chain Equipment are in **high demand globally** – all UNICEF suppliers are extremely busy (i.e. lead times are at min 2 months – for larger orders >2 months )
- Christmas/Year end Holidays (Dec-20) and Chinese New Year Celebrations (Feb-21) will **impact lead times** further
- **Global shortage of containers**, difficulties to get bookings for SEA shipments
- Delays in **voltage regulators supply** (global shortage of WHO PQS products), improvements envisaged by March-21 only
- UCC – lack of clarity about possible AIR shipments (due to flammable nature of the refrigerants)

Work/negotiation with suppliers, freight forwarders and WHO PQS to address these ongoing