

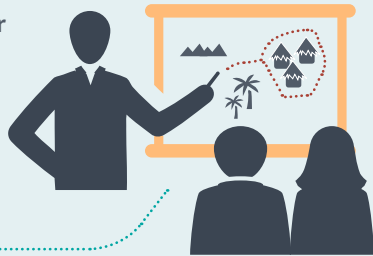
WHAT IS A CONTROLLED TEMPERATURE CHAIN (CTC)?



A controlled temperature chain is an optional method of transporting and storing vaccines in carriers **WITHOUT ICE PACKS** up to a specific number of days before the vaccines are administered.

It is only recommended for vaccines **OFFICIALLY LABELED FOR THIS USE** where a pronounced need is apparent and **TRAINING AND SUPERVISION** are provided.

Vaccines carried in a CTC must be monitored using a vaccine vial monitor (VVM) and peak temperature threshold indicator (PTTI) to indicate exposure to heat.



HOW ARE VACCINES APPROVED FOR CTC?

Not all vaccines can be used in a CTC. To be used in a CTC, four conditions should be met:

1



LAB

The vaccine must undergo and pass stability testing.

2



NATIONAL REGULATORY AUTHORITY

Appropriate regulatory authorities must license the vaccine for CTC use with a label that specifies the conditions of use.

3



WHO

The vaccine must be prequalified by the World Health Organization.

4



COUNTRY

The government of the country where the vaccine will be used must give its consent in advance.



HOW DOES A CTC COMPARE TO A TRADITIONAL COLD CHAIN?

TRADITIONAL COLD CHAIN



Vaccine label indicates +2°C to +8°C for all storage and transport.

VVM



Vaccine vial monitors protect potency and quality by monitoring cumulative exposure to heat.



Conditioned ice packs or cool water packs are required in vaccine carriers.



No need for additional training, monitoring or supervision.



When implemented correctly, preserves the safety and potency of the vaccine.



Requires cooling equipment, transport, and human resources at all levels to maintain cold chain.

CONTROLLED TEMPERATURE CHAIN (CTC)

Vaccine label indicates +2°C to +8°C for initial storage and transport,



and permits up to 40°C for at least 3 days prior to use.



Vaccine vial monitors and peak temperature threshold indicators protect potency and quality by monitoring cumulative and peak exposure to heat.



No ice packs or cool water packs are required in vaccine carriers. Reduced risk of freezing.



Health workers need additional training, monitoring and supervision.



When implemented correctly, preserves the safety and potency of the vaccine.



Half the cost.¹ Fewer freezers, fewer journeys and less staff time are needed to manage and maintain cold chain requirements.

WHY IS CTC USEFUL?

FEWER RESOURCES

80

Number of ice packs needed daily to vaccinate 1,000 people.²

22%

Percentage of health facilities in surveyed countries that have no refrigerators.⁴

12%

Percentage of cold chain equipment in surveyed countries that is non-functional.⁴

INCREASED COVERAGE

Number of days that health workers can remain in the field to reach more remote communities.⁷

3

98.7%

Percentage of vaccinators in Benin who agreed that CTC was useful or very useful in allowing them to vaccinate more persons.⁶

1.6 kg

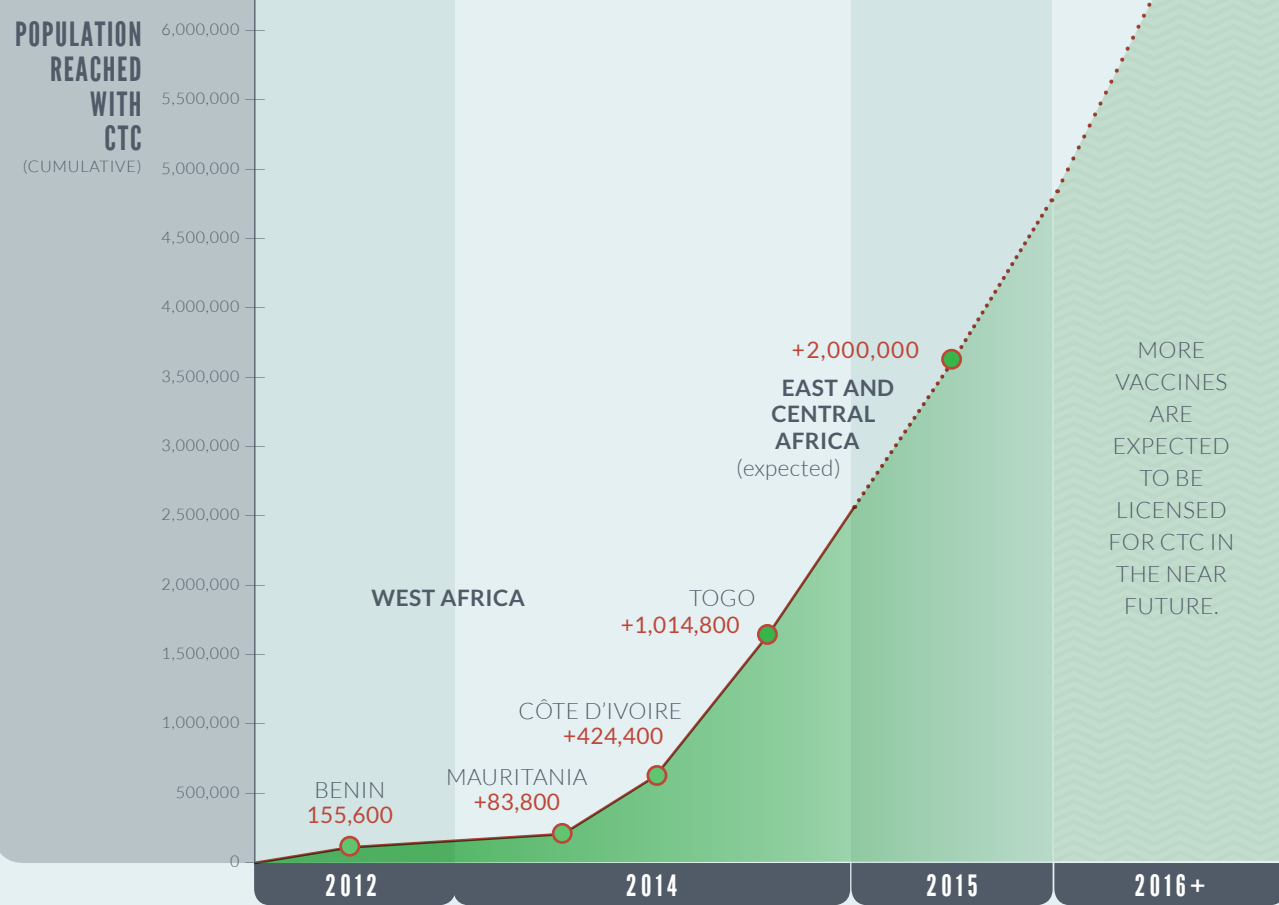
Weight of vaccine carrier without ice packs.⁵

4.0 kg

Weight of carrier loaded with conditioned ice packs.⁵

EASIER OUTREACH

WHO IS BEING REACHED WITH CTC?



“ IN THE CTC, WE NO LONGER PUT ICE PACKS IN THE VACCINE CARRIERS. EVERYTHING REMAINS DRY, THERE IS NO HUMIDITY AND THE VACCINE CARRIER IS LIGHTER.”

MR. BERTIN
HEALTH WORKER
CÔTE D'IVOIRE

¹ Lydon P, et al. Economic benefits of keeping vaccines at ambient temperature during mass vaccination: the case of meningitis A in Chad. WHO Bulletin. 2014;92:86-92.

² Assuming each vaccination team requires 8 ice packs per day to vaccinate 100 people. Need 10 teams to vaccinate 1,000 people. Translates to 80 ice packs to vaccinate 1,000 people in a day.

³ A commonly-used WHO pre-qualified freezer can freeze around 7.2 kg of ice packs in 24 hours. Five of these freezers are required to freeze 80 ice packs in 24 hours.

⁴ WHO EVM Database: data from the most recent EVM assessments in 64 countries across 6 WHO regions, 2010-2014.

⁵ A commonly-used WHO pre-qualified vaccine carrier with a capacity of 1.7 L weighs 1.6 kg when empty and 4.0 kg when fully loaded with ice packs.

⁶ Zipursky S, et al. Benefits of using vaccines out of the cold chain: Delivering Meningitis A vaccine in a controlled temperature chain during the mass immunization campaign in Benin, 2014. Vaccine;32:1431-1435.

⁷ Vaccines for different antigens may allow for excursions of an even higher number of days.