Maximizing the Impact of Temperature Monitoring Studies

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Introduction

Temperature monitoring studies (TMS) are a powerful tool for improving vaccine safety and efficacy. A TMS involves:

①Packing data loggers into vaccine shipments, which ***monitor storage conditions*** throughout each level of the cold chain.

②Analysing results to show ***the degree of temperature risk, and where vaccines major excursions*** occur.

This evidence can build **substantial political will** for adopting **targeted solutions to reducing temperature risk** in the cold chain.

Definition of a Successful TMS

Identify the **type(s) of risk** in the **cold chain**…

and the **highest risk levels**

…to drive **changes** that **prevent future exposures**.

Three Lessons-Learned in Protocol Design

#1: Increase the sample size to better detect risk in transit and mid-level stores.

30 – 40
Shipment Routes

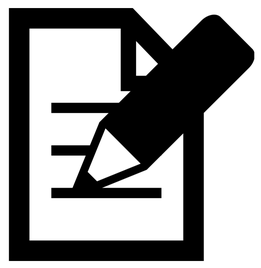
Minimum
4
Sites Per Level

#2: Include a sufficient number of sites at each level of the cold chain.

#3: Plan for delays! Some logger shipments can take up to 3 months.

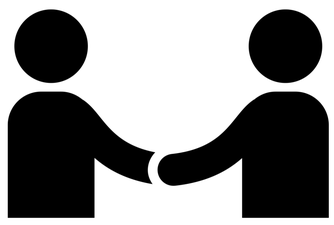
3 Months

Two Tips for Study Execution



*A **detailed** and **country-specific shipment tracking form** will make data collection and analysis easier.*

***Involve EPI and partners from Day One** to increase **buy-in** to results & **political will** to make changes*



CHAI has example protocols and forms that can help with these elements and are available on request.

The 3 Most Actionable TMS Results

1. **Determining if <u>FREEZE</u> or <u>HEAT EXPOSURE</u> is posing the greatest risk to vaccines.**
2. **Identifying which <u>LEVELS</u> see the most dangerous exposures.**
3. **Isolating the <u>FRACTION OF SITES</u> at <u>EACH LEVEL</u> that have dangerous exposures.**

Target Solutions at the Exposures Detected in the TMS

Freezing detected in transport	• Adopt the use of **cool water packs,** instead of ice packs.
Heat & Freeze Exposure at Mid-Level Stores	• **Improve temperature monitoring and control** (TMC),, using an **optimal TM device** *(see CHAI poster).* • Procure **non-freeze** and **long holdover** CCE.
Repeated Freeze Events at Health Facilities	• Improve 30-DTR (e.g. FridgeTag) use, focusing on **detecting** exposure events and linking to **maintenance** processes • Replace aging CCE with **non-freeze** and/or **SDD** fridges

Executing a TMS in the Near Future?
CHAI has developed a number of guides and templates to help guide the execution of TMS, available upon request.

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