

# Opinion: More guidance is needed on COVID-19 vaccine logistics

By [Ümit Kartoğlu](#) // 05 May 2021



*A worker inspects a box of COVID-19 vaccines before placing them in cold storage at a warehouse in Santiago, Chile. Photo by: Ivan Alvarado / Reuters*

A few weeks ago, I woke up with my phone ringing at 3 a.m. Calls at such hours always make me nervous: I worry about receiving unpleasant news. To my surprise, the call was from a friend, an immunization manager in a country in East Asia, seeking advice on what to do with a [temperature excursion](#) discovered at a [COVID-19](#) vaccine service center.

It was surprising and worrisome to hear that the country had received no advice regarding the durability of the vaccine when exposed to temperatures outside the recommended range during storage. My friend said that no guidance was available on how to handle these excursions if they happened.

This example highlights one of the biggest challenges of vaccine deployment — logistics/cold chain management. While it's imperative that vaccines be made available to all countries waiting for them, more data on the products themselves is

needed. This will enable those front-line staff and volunteers charged with vaccine management to plan how to maximize the success of their efforts.

Logistics is a science in itself — especially as supplies move from one location to another, be it between countries or in-country, and are subject to unpredictable environments, from trucks to tarmacs. The right products — test kits, personal protective equipment, vaccines, syringes, safety boxes — must reach their designated place, time, in perfect condition and correct quantity. This is not an easy job.

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All vaccines are sensitive to heat, but especially the COVID-19 vaccines, which must be kept at cold temperatures to ensure their viability. The term stability budget defines the time interval that vaccines will remain durable outside of specific storage conditions, such as temperature ranges. For example, can this product withstand an exposure to 15 degrees Celsius for 30 minutes or must I scrap the entire carton?

Knowing the details of this budget helps managers in the field know what to do and how to do it when conditions are out of these ranges. Had my phone-calling friend received this data, he would not have needed to contact me. It is understandable that we may lack critical stability information right now.

Real-time studies take years, yet the licensing of the very first COVID-19 vaccine happened only five months ago, with the development phase adding a similar condensed time frame. Accelerated temperature studies — at higher temperatures — by manufacturers would help to eliminate usage uncertainty and solve a pervasive global problem.

These would provide more stability data and open up new possibilities for a more successful rollout.

For example, by adopting a [“floating warehouse” strategy](#) through the usage of good distribution practices compliant refrigerated ocean containers as temporary and mobile storage units, countries could both achieve sequenced vaccine deliveries and eliminate the need for surge capacity at local cold storage facilities.

Maximizing the success of this strategy, of course, would depend on better access to stability budget information, so that those involved could make the right decisions when excursions occur. As of today, vaccine manufacturers demand countries contact them each time there is an excursion beyond suggested limits. This is impractical when achieving herd immunity depends on speed.

To improve their readiness to vaccinate populations given these circumstances, those involved in country immunization programs should:

- Enhance and expand the capacity of staff handling vaccines to improve management based on the product specifics currently being administered.

- Micro-plan the logistical operation with a risk-based approach that includes preventive and corrective measures against all potential deviations.
- Scaffold the system with supportive supervision to assure corrective actions are made.
- Monitor the end-to-end operation in real-time to assure ongoing adjustments as necessary.

We cannot afford to waste doses because of preventable logistical hiccups, nor can we afford to miss vaccination opportunities. Following a confirmed appointment, coming to a clinic for immunization and being refused due to the unavailability of vaccines would be the worst outcome of a logistics failure.

Logistical readiness, based on informed cold chain management practices, is the key to efficiently deploying vaccines to the target populations in line with defined vaccination modalities. To do this, we must know more about each product's characteristics.

It is 4 a.m. and my phone starts ringing.