

# What's your vaccine supply chain?

## What is a vaccine supply chain?

*A supply chain is the flow of goods from producer (e.g. vaccine manufacturer) to consumer (e.g. child in a health clinic).* A weak supply chain is perhaps the biggest barrier to immunization coverage and equity. When a supply chain works well:

- People get the vaccines they need, when they need them
- Vaccines are more effective because they are kept at a constant temperature
- There is high equity in vaccine coverage

## How is it managed?

Supply chain management integrates operations management, logistics, procurement, and information technology to ensure that the supply chain runs smoothly. Some of the most important challenges to vaccine supply chain management are:

- Vaccine **pricing** (What budget is available? Is there enough money to roll out new vaccines? Can a cheaper supplier be found?)
- Vaccine **ordering** (Are orders placed well enough in advance, as *it can take six months or more until delivery?*)
- Vaccine **forecasting** (What vaccines are needed, how many, when, and where?)
- Vaccine **sampling** (Is quality being tested at port of entry and point of distribution?)
- Vaccine **distribution** (How will vaccines be shared with the different levels of the health system? How will vaccine use be monitored? Is there an over-reliance on campaigns and *are children being accidentally vaccinated more than once?*)
- Vaccine **transport** (How are vaccines kept cold and safe while transported?)
- Vaccine **storage** (How much space will vaccines require? *How many vaccines can be stored with the budget available?* How can the cold chain be maintained in different storage facilities? How will expired vaccines be identified and disposed of?)

## What are some important new trends?

Vaccines must be kept at a certain temperature. If they freeze or get too warm, they will no longer confer immunity. Maintaining the “cold chain” – a supply chain that transports and stores a vaccine at a constant temperature (2-8°C) – is expensive and logistically problematic; it has long prevented remote and resource-poor areas from achieving high immunization coverage. But this is changing.

**MenAfricVac:** This meningitis vaccine can get as warm as 39° Celsius (102.2° Fahrenheit) for four days and still be effective. According to WHO, breaking free of the cold chain could drop the cost of meningitis vaccination by fifty percent.

**Tetanus:** In April 2014, Médecins sans Frontières reported that the Serum Institute of India’s tetanus toxoid vaccine can be kept at up to 40°C for thirty days, allowing easy and affordable vaccination even in remote villages.

**Cell phones:** It was once necessary for vaccine stock to be kept at each administrative level, which was expensive and, when inventory needs fluctuated, wasteful. Now, local health centers can call the central store directly to place an order.

**Information management systems:** Computer-based inventory and stock forecasting systems allow a central manager to track vaccine viability and predict future needs.

**Sure Chill** refrigerators need just 2.5 hours of electricity per day to keep vaccines at optimal temperature.

## The role of CSOs in the vaccine supply chain

Civil society organizations (CSOs) have an important role to play in strengthening the vaccine supply chain.

**Advocacy** to reduce vaccine prices, promote country-level vaccine production, increase funding to immunization programs, and strengthen the health system.

**Sensitization** to increase community-level uptake of and demand for vaccines.

**Data collection and monitoring** to improve vaccine forecasting. CSOs can inform national and sub-national health centers and government of the numbers of children in need of vaccination and the community-level availability and demand for each vaccine.

**Oversight** to report on vaccine waste at sub-national storage and distribution points.

**Technical assistance** to implement time-saving information management systems, such as inventory software, mobile-based and track-and-trace delivery systems, barcodes, RFID tags, cloud-based infrastructure, biometrics, and hand-held data transmission hardware.

**Investigation and reporting** on supply chain bottlenecks, whether that is a lack of funds to repair broken motorbikes, or insufficient solar power during the rainy season.

**Leverage** public-private partnerships to improve the supply chain.

**Capacity building** to ensure all actors contribute appropriately.

**Dissemination and piloting** of new approaches, international standards, and best practices.

## For more information

- ❑ [Vaccine supply and procurement \(GAVI\)](#)
- ❑ [Electronic Logistics Management Systems \(GAVI\)](#)
- ❑ [Integrated public health supply chain \(GAVI\)](#)
- ❑ [Immunization supply chain and logistics \(WHO\)](#)
- ❑ [Cold chain and logistics for immunization \(UNICEF\)](#)
- ❑ [Energize the Chain](#): Institute for Strategic Threat Analysis and Response project that uses power left over from mobile phone masts to run refrigerators in remote regions.
- ❑ [People that Deliver](#): This is an international coalition that works to improve supply chain management by investing the health workforce. Website resources include an advocacy toolkit, research, guidance documents, and [instructions on how to join](#).