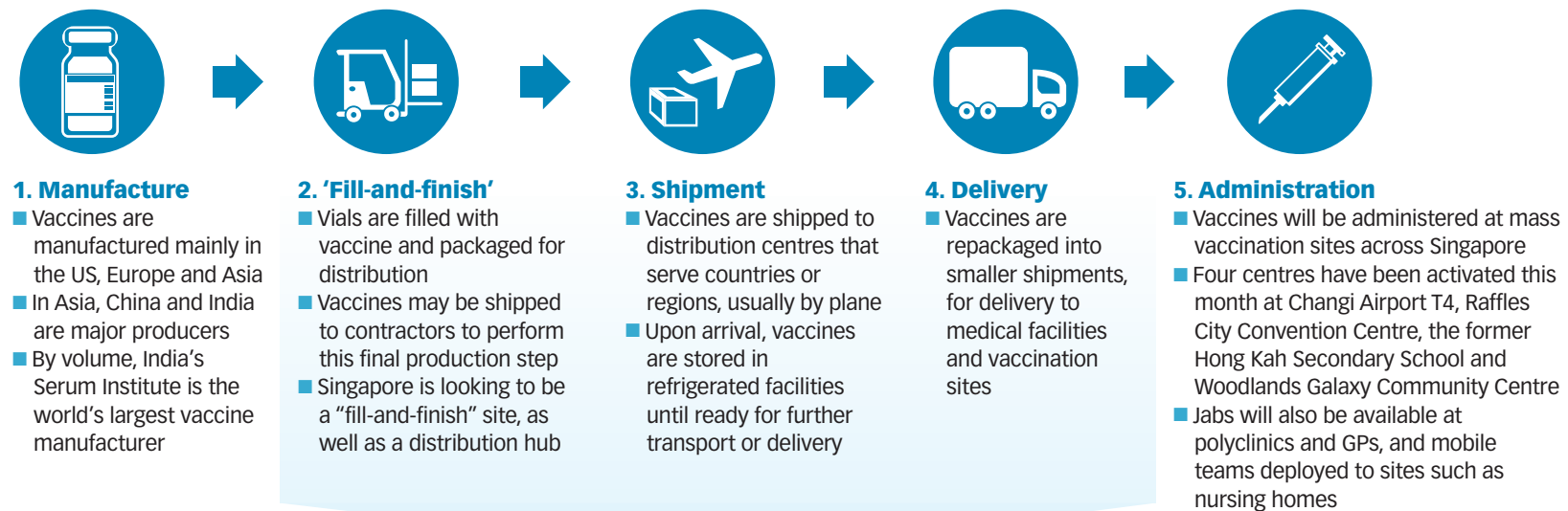


# Following the cold chain: the journey of a vaccine



## Role of Logistics Players

Vaccines must be kept in temperature-controlled environments

- Pfizer-BioNTech's vaccine needs to be shipped and stored at -70°C
- Moderna's must be stored at -20 °C if kept for longer than 30 days.
- The Oxford-AstraZeneca vaccine can be stored for six months at between 2°C to 8°C

The required temperatures can be achieved with the help of dry ice, gel packs and refrigerator boxes

- For example: FedEx maintains temperatures of 25°C to -150°C using insulated packaging with dry ice or gel packs, and battery-powered refrigerators called "C-safe containers"

Monitoring technologies are used to ensure proper handling

- For example: FedEx uses an in-package monitoring device called SenseAware to record temperature, location, light exposure, humidity, shock and barometric pressure of the vaccine or healthcare shipment while in transit