

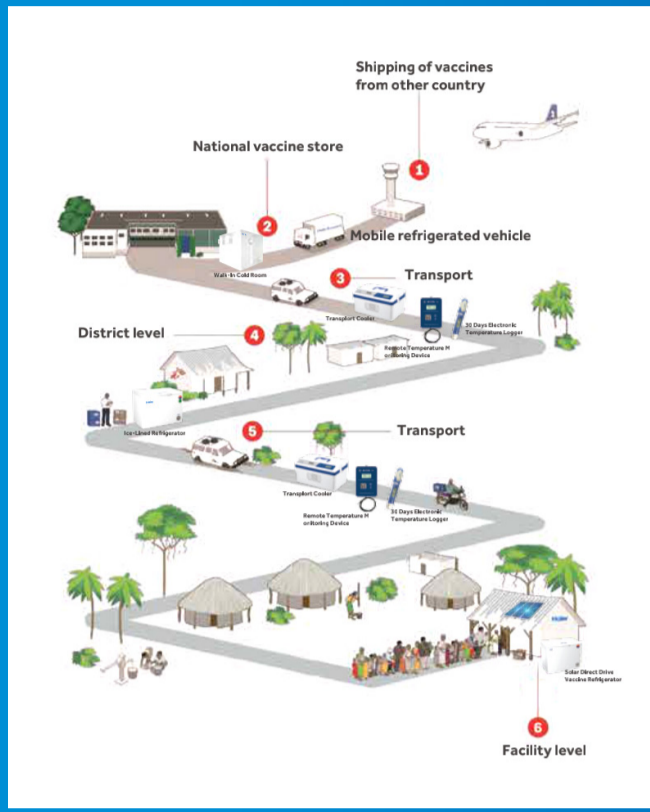
### Haier Biomedical COVID-19 Vaccine Cold Chain Complete Solutions



### Medicine without Borders: Haier Biomedical's COVID-19 Vaccine Products & Solutions for the African Market

How to ensure that vaccines are safe and secure for the long and sometimes arduous journey from the manufacturer to injection in a remote village in Africa?

#### Vaccine Manufacturer to Inoculation!



- ① After leaving the factory, doses of the vaccine will travel on flights to a country as refrigerated cargo.
- ② Governments will typically then deliver to a national cold storage facility.
- ③ ④ ⑤ Vaccines delivered to distribution centers or cold chain centers across the country.
- ⑥ Finally, after its long journey, the health facility is then responsible for the storage and inoculation of vaccines covering the community and outreach service to remote areas.

However, before the recipient receives the injection, different logistical tasks are involved to maintain the "cold chain" temperature requirements at each step of the journey, which also means significant investment to support personnel and professional cold chain equipment along the vaccines journey.

Recently COVID-19 vaccines have become a global focus, especially over the last few months as the various vaccines have been approved, people now through vaccination programs across the world can see the light at the end of the tunnel. However, in some parts of the remote African continent, due to its complex geographic environment and power supply obstacles, vaccines are prone to deterioration and can lose effectiveness during transportation and storage, which has become the main reason for the low vaccination success. It is known that the lowest vaccination success rates are in rural areas, such as sub-Saharan Africa which is caused due to some locations having poor infrastructure and regular power shortages. It is revealed by insiders that health institutions in some underdeveloped areas, especially remote areas of Africa, don't have refrigerators, and even no power in many locations. The "last mile" of vaccine storage and transportation is the key to vaccine effectiveness, as well as inoculation success.

To this end, Haier Biomedical has proposed a full-cycle customer service solution to ensure the safety of vaccines for the entire cold chain network.

In terms of vaccine storage, in response to the power shortage in some remote areas of Africa, Haier Biomedical's Solar Direct Drive (SDD) Vaccine Refrigerators provides the solution, which has been tested and proven for years, no need for batteries, and has super robust stability, security, insulation performance and long holdover times. According to data collected, the heat preservation time of solar vaccine refrigerators required by the World Health Organization is 72 hours, and the heat preservation time of the Haier Biomedical Solar Direct Drive (SDD) Vaccine Refrigerators reaches 120 hours, the solution can last for more than 5 days during rainy or clouded periods of weather, which is unique in the industry and Haier Biomedical is the world's leader in this technology. The product range have been certified by WHO/PQS for superior temperature control and Grade A anti-freeze function!

#### Vaccine Refrigerator Safety Solutions!



Haier Biomedical's innovative vaccine safety solution platform involves multiple vaccine safety steps between areas such as production, transportation, customs clearance, distribution, installation and maintenance. Haier Biomedical achieves the complete environment coverage of the "dynamic cold chain" health networks needs, and at the same time provides a series of IoT product solutions for vaccine safety.

#### Intelligent Vaccine Safety Transport Solutions!



The Intelligent Control Cold Chain Transport Cooler is not only easy to handle, but also ensures that a large number of vaccines can be transferred quickly and safely from one location to the next, which improves the efficiency of vaccination and the security and the reliability of the vaccines. It can also achieve ultra-long temperature control to cope with changeable logistics situations which can occur without notice. The Smart IoT solution can check the status of vaccines at any time to ensure stability with the cold chain environment maximizing the quality of vaccines.

#### Refrigerated Vaccine Vehicle Solution!



Haier Biomedical has developed and manufactured a vaccine refrigerated vehicle and mobile clinic to offer better flexibility to health networks.

The Haier Biomedical refrigerated vehicle, with high chassis, backup power supply and heating system can adapt to more complex terrain and with better endurance to ensure safe delivery of the vaccines.

#### Mobile Vaccine Clinic Solution!



The comprehensive mobile clinic solution is fitted with vaccine storage equipment, patient examination facility, and other critical medical equipment generally found in a clinic, this can further improve the access to immunization services and extend the vaccination coverage to more remote mountainous areas and hard to reach locations, such as towns and small villages.

#### RTMD Solution!



In addition to ensuring the safe transportation of vaccines under the required constant cold chain temperature conditions, Haier Biomedical's RTMD solution is also equipped with the remote temperature monitoring system to collect all the terminal data of equipment and to manage the inventory automatically, all solutions are based on the 2G network, which covers most areas in need, and can be connected to the best signal network through an international SIM card.

#### Global Partner Service and Support Networks:

Haier Biomedical has a large network of distributors, service and sales partners, who share the Haier philosophy and spirit of customer satisfaction on a global scale. In order to assure the highest quality and customers' satisfaction from initial sales, installation to after sales service of our products, we have carefully selected the best partners to work together with us. This network provides the best service possible, including In-country training to our partners on a regular basis as an essential resource in providing the highest of standards, this is our KPI.

Haier Biomedical insists on the intelligent protection of life science with cold chain products and solutions delivered to the world, from transportation, storage, management to inoculation, enhancing the safety and protection of all vaccines.

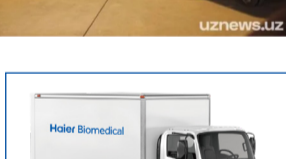
## Case Studies

### Haier Biomedical Assists Uzbekistan's COVID-19 Vaccine Program

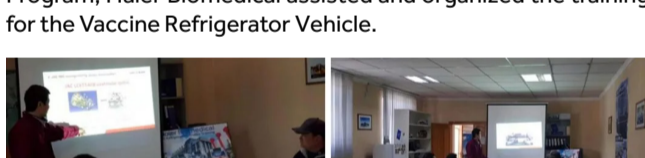
According to the report from UzNews.uz, the first batch of AstraZeneca vaccines arrived at Tashkent Airport on the evening of March 17. The number of vaccines delivered this time is 660,000 doses, and another 1.596 million doses of vaccine will be delivered in the next few months.



It is worth noting that, the Vaccine Refrigerator Vehicle that will be used for this vaccine batch was delivered by Haier Biomedical to Uzbekistan in September 2020.



In addition, as part of the Uzbekistan's COVID-19 Vaccine Program, Haier Biomedical assisted and organized the training for the Vaccine Refrigerator Vehicle.



As the world's only complete cold chain provider, Haier Biomedical has successively provided Covid-19 vaccine products and solutions for the United States, UK, Italy, the Czech Republic, Yemen, Vietnam, Singapore, the Philippines, Costa Rica and many other countries, which has been greatly recognized as the right choice for the storage and distribution of all COVID-19 vaccines.

Haier Biomedical has formulated solutions to overcome any possible problems encountered by vaccines in different temperature ranges of -70°C, -20°C and 2-8°C respectively, providing safety, security and guarantee for stable vaccine transportation, preservation, management and monitoring to inoculation. While at the same time, considering different region's needs, Haier Biomedical provides multiple solutions for different countries to meet their vaccine safety requirements.

### Haier Biomedical Assists Costa Rica's Vaccine Cold Chain Network

Recently, 14 units of Haier Biomedical Smart Frequency ULT Freezers, which won the bid for Costa Rica's COVID-19 vaccine storage project, have successfully arrived in Port Caldera. The President of Costa announced the good news on twitter: "The 14 ULT freezers used to store the COVID-19 vaccine have successfully arrived in the Port of Caldera, with which we will increase our cold chain storage capacity to cover all regions and provide more vaccines to more people in Costa Rica."



Closely related to the construction of the local vaccine cold chain network and the COVID-19 vaccination process, this batch of equipment has received great attention from the government and relevant departments. It is reported that after the customs review, the equipment will be transported to designated locations nationwide for installation within the next two weeks. After the installation, Costa Rica will establish a vaccine cold chain network, boosting vaccine transportation for a more convenient vaccination process in the future.



In response, Costa Rica's National Emergency Committee (CNE) Chairman Alexander Solís expressed: "Through cooperation between various government departments and enterprises, we finally have modern and high-quality vaccine storage equipment, and the vaccine safety will be further guaranteed through the subsequent installation."

Haier Biomedical's Smart Frequency ULT Freezers were recently supplied to Costa Rica, the units designed and manufactured with a world-class hydrocarbon refrigeration system and frequency conversion technology. The Haier Biomedical ULT Freezer has lower power consumption, more stable storage temperature, ultra-precise temperature control, and the temperature uniformity reaches ±3°C, ensuring vaccine safety, security and reliability.

At the same time, the unit is equipped with a 10-inch large touch screen, and the conditions inside the freezer can be seen at a glance. The freezer is manufactured with a five-layer sealing design and mature VIP insulation technology, ensuring long-term temperature stability in the event of unexpected power failure.

In addition, the ULT freezer also has a complete remote alarm system, in addition to instant sound and light alarms, it also supports e-mail and text message alarms. If an abnormality occurs, the staff will be notified with full access to ensure the safety of the vaccine is guaranteed!



Haier Biomedical, insisting on intelligent protection of life science and being empowered by technology, is committed to delivering the optimum vaccine cold chain complete solutions globally, safeguarding vaccine safety for millions of people!

## Latest Products

#### Low Temperature Transport Trolley



- Appearance Spray Polymer Materials
- The Insulation Cover can be Magnet Absorbed
- Real Time Monitoring
- Touch Screen
- USB Data Export
- Universal Caster

#### Vaccine Transport Cooler



- Non-fluorinated polyurethane foaming (PU)
- Easy to carry with shoulder strap
- LCD thermometer
- LCD screen
- High strength medical plastic
- Temperature range of 2-8°C

