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The value of the cold chain system

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The procedure of keeping the vaccine at extremely low temperatures is known as the "cold-chain." Vaccines are extremely fragile, biological compounds that eventually deteriorate. When the vaccines' temperature rises over the prescribed threshold, the dilution process is significantly accelerated. Vaccines retain their potency for a very long time if they are stored at the right temperature. Vaccines must be administered within the allotted time period due to these factors.

A cold chain system is made up of three basic parts:

1. A person who utilises and maintains the equipment and renders medical services.
2. Tools - For the secure transportation and storage of vaccines.
3. Procedure - The steps that must be taken to administer the programme and manage the acceleration and application of vaccinations.

The two primary categories of cold-chain equipment are

1. An ice-lined refrigerator- Here the vaccines are kept at a constant 2 to 8 degrees Celsius. These refrigerators can properly keep vaccinations even if there is a power outage for eight hours out of every twenty-four.
2. Deep-freezer - The officer should be notified right away if the temperature rises above 8°C or falls below 2°C.

Procedures for maintaining a cold chain during vaccine transfer

1. Vaccine Carriers - These carriers have thick walls and lids made of a unique substance that prevents heat from entering. These maintain the vaccines' coldness at a specific temperature with the use of 4 frozen ice packs. These typically keep the vaccinations chilled for 24 hours and can transport 15-20 vials.
2. One-Day Carriers - These are compact carriers that hold just two ice packs each. The vaccination can be stored in the refrigerator for 6–8 hours and typically contains 6–8 vials.

Things to keep in mind

1. The vaccine container shouldn't be left in direct sunlight.
2. Don't leave the carrier lid open.
3. The carriers need to be maintained dry and spotless.
4. Transfer vaccines as soon as the ice has entirely melted, and only utilise frozen ice packs and carriers as long as ice is kept in the ice packs.