

# COVID-19 Vaccine Temperature Monitoring Devices

2/18/2021

COVID-19 vaccine providers are strongly encouraged to use a continuous temperature monitoring device (e.g., data logger or continuous temperature monitoring system). These devices can provide information about when the temperature goes out of range and for how long, and what these temperatures were. Unlike a min/max thermometer, which provides only information about warmest and coldest temperatures that were reached, the continuous temperature monitoring device provides detailed information on all temperatures recorded at preset intervals. This information may make a difference in determining if vaccine is still viable.

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## Recommended features of continuous temperature monitoring devices

- Continuous monitoring and recording capabilities to track and record temperatures over time.
- The capacity to routinely download temperature data to a computer (recommended weekly).
- Probe in buffered material (e.g., biosafe glycol) placed in the center of the unit with the vaccine.
  - In a pharmaceutical unit, placement in other locations may be acceptable because pharmaceutical units maintain more consistent temperatures throughout the unit.
- Active temperature display that can be read easily from the outside of the unit.
- Alarm for out-of-range temperatures.
- Accuracy within +/-1 degree Fahrenheit (+/- 0.5 degree Celsius).
- Low battery indicator.
- Display of current, minimum, and maximum temperatures.
- Memory storage of at least 4,000 readings.
- User-programmable logging intervals (i.e., the user can set how often the device records the temperature).

# Types of continuous temperature monitoring devices

## Data loggers

A portable measurement instrument that can be programmed to record temperatures at preset intervals. They are capable of recording and storing thousands of temperature readings that can then be retrieved, viewed, and evaluated.

Data logger manufacturers and distributors:

- Control Solutions: [VFC Dataloggers Featured Products \(www.vfcdataloggers.com\)](http://www.vfcdataloggers.com)
- DeltaTrak, Inc.: [Cold Chain Integrity \(www.deltatrak.com\)](http://www.deltatrak.com)
- InTemp by Onset: [Cold Chain Monitoring Solutions \(www.onsetcomp.com/intemp/\)](http://www.onsetcomp.com/intemp/)
- Your durable medical supply company

## Continuous temperature monitoring systems

This is a system that provides information on temperatures for multiple vaccine storage units throughout a clinic or system, recorded at preset intervals. It transmits real-time data to a computer and can alert multiple people via text and/or email. These systems are generally more expensive. Examples include: TempTrak, VersaTrak, Isenix, and STANLEY Healthcare.

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# Temperature monitoring devices not recommended by CDC

- Fluid-filled bio-safe liquid temperature monitoring devices.
- Bimetal stem temperature monitoring devices.
- Food temperature monitoring devices.
- Household mercury temperature monitoring devices.
- Chart recorders.
- Infrared temperature monitoring devices.
- Temperature monitoring devices that are not calibrated.

These devices can have significant limitations. They can be difficult to read and only provide information on the temperatures at the precise time they are read. Most do not have a certificate of calibration. Testing demonstrated that infrared thermometers are not reliable or accurate for assessing vaccine storage temperatures.

## Calibration

Calibration of temperature monitoring devices must be performed at a minimum of every two years from the last calibration testing date (date certificate was issued). Temperature monitoring devices will "drift" over time and normal use can affect their accuracy, so all these devices need recalibration.

More information about calibration can be found in the [CDC Vaccine Storage and Handling Toolkit \(www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf\)](https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf).

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