Maryland Vaccines for Children (VFC)

Certified Calibrated Digital Data Logger Thermometer Information

As mandated by the CDC and the Maryland Vaccines for Children (VFC) Program, VFC providers are required to have National Institute of Standards and Technology (NIST) digital data logger (DDL) calibrated thermometers covered by a Certificate of Traceability and Calibration in all units where publicly funded vaccine is stored. With the goal of improving the way vaccines are stored and handled nationwide, the Centers for Disease Control and Prevention (CDC) recommends the use of a digital thermometer with a buffered probe that will measure liquid temperature. Maryland VFC encourages all providers to comply with CDC's recommendations. More detail regarding the rationale behind these recommendations is included below.

1. **Use of a temperature buffered probe**. CDC recommends this type of probe because studies by the National Institutes of Standards and Technology (NIST), U .S. Department of Commerce conducted in 2009 showed that compared to temperature monitors that measure ambient air temperature, the digital thermometer with glycol-encased probe more accurately reflects the temperature of the vaccine vial and does not register normal air temperature fluctuations.

2. **Use of digital data loggers (DDL) with detachable probes** that record and store temperature information at frequent programmable intervals for 24 hour temperature monitoring rather than non-continuous temperature monitoring. The digital data logger should also include the following:

    - Hi/Lo alarm for out-of-range temperatures;
    - An active display that allows for reading temperatures without opening the unit door;
    - Current temperature, as well as minimum and maximum temperatures;
    - Reset button;
    - Download capabilities;
    - Low battery indicator;
    - Accuracy of +/- 1°F (0.5°C);
    - Memory storage of at least 4000 readings, device will not rewrite over old data and stops recording when memory is full;
    - A digital thermometer with a probe in a glycol-filled bottle.
    - Include an alarm for out- of- range temperatures.
    - Be capable of showing current, as well as minimum and maximum temperatures, which indicate the coldest and warmest temperatures recorded since last reset.

Listed below are samples of Digital Data Logger vendors.

Control Solutions
www.vfcdataloggers.com
PJLA Certificate #78234
35851 Industrial Way, Suite D
St Helens, OR 97051
Phone: (888) 311-0636

Cal-Cert Company
www.cal-cert.com
IAS Certificate #CL-108
6709 SE Lake Rd
Portland, OR 97222
Phone: (800) 356-4662

JJ Calibrations, Inc.
www.jjcalibrations.com
A2LA Certificate# 723.01
7007 SE Lake Rd
Portland, OR 97267
Phone: (503) 786-3005

Micro Precision Calibration, Inc.
www.microprecision.com
A2LA Certificate# 935.18
7925 SW Nimbus Ave, #28D
Beaverton, OR 97008
Phone: (503) 746-5845

Quality Control Services, Inc.
www.qc-services.com
A2LA Certificate# 1550.01
2340 SE 11th Ave
Portland, OR 97214
Phone: (503) 236-2712

Continuous Monitoring: Maryland VFC requires the use of a continuous monitoring logger. This is a logger with the ability to record/graph temperatures over time. Do not confuse a high/low recording thermometer with a continuous monitoring thermometer. High/low units offer only basic information about the warmest and coldest temperature reached. By comparison, continuous monitoring units give you the ability to store **all** past temperatures (on your computer) for future reference.

Accuracy: When choosing a thermometer, look for high accuracy, **+/-1°F (+/-.5°C).** This information should be contained in the Certificate of Traceability and Calibration Testing (also known as a Report of Calibration).

Low Battery Indicator: Notification of low battery status is essential for accurate vaccine temperature recording. Such notification gives you advanced warning and ensures that vaccine monitoring is not interrupted or incomplete.

Wireless and Cloud-based Systems: Relative newcomers to the field of continuous temperature monitoring, Wi-Fi and Ethernet based systems are quickly gaining in popularity. While more costly than stand-alone units, the increase in convenience and accessibility makes them a smart purchase. Some of the newer systems send temperature data directly to a cloud storage site which can be accessed, in real-time, from any computer in the world. Real-time feedback is especially useful when addressing time-sensitive vaccine excursions. Clinics will likely need a competent IT staff person (or tech savvy employee) to help implement such a system.