



*Healthy People. Healthy Communities.*

Department of Public Health & Human Services

# Data Logger Basics

## For VFC Providers

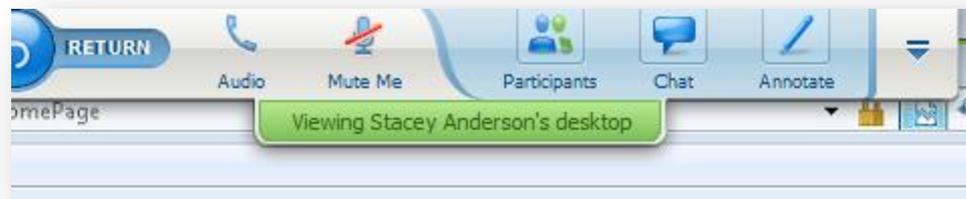
Montana Immunization Program



## Webinar House Keeping

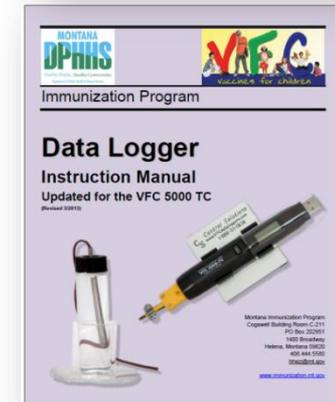
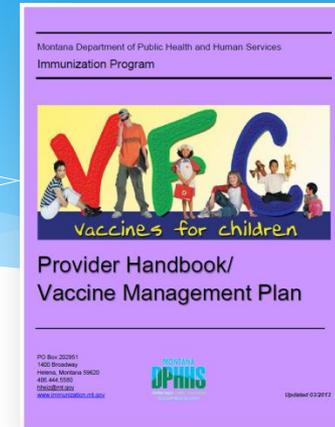
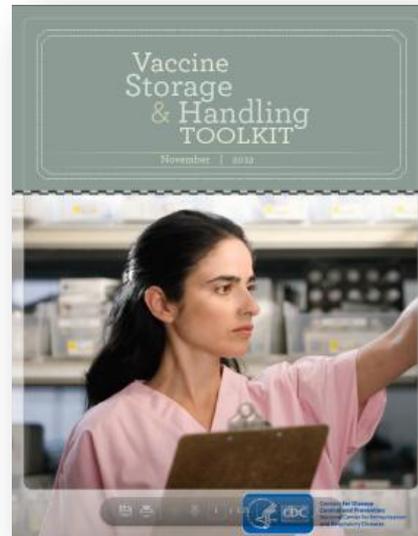
- We mute participants to reduce background noise. Please do not “unmute” your line.
- At the end of the presentation, we will unmute everyone for a live question and answer session.
- During the presentation, use the “Chat” function for questions.
- Presentation will be posted to [www.immunization.mt.gov](http://www.immunization.mt.gov) under the VFC Training and Resource Page.
- This presentation will be offered monthly for freshening knowledge and training new staff. Schedule to be announced.

Let's get started!!!



# Vaccine Storage and Handling Resources

- \* Montana VFC Program:
  - \* *VFC Provider Handbook – Sections 13 and 14*
  - \* *Data Logger Instruction Manual (VFC5000-TC)*
  
- \* *CDC Vaccine Storage and Handling Toolkit:*



# Why monitor temperatures?

- \* Vaccines are expensive and fragile. Must be stored at the proper temperature from:
  - \* Manufacture >>> Administration = Cold Chain
  - \* Immunization providers are the last link in the chain.
- \* CDC Vaccine Storage and Handling Toolkit describes the approved standard of care for all public and private immunization providers. Includes temperature monitoring.
- \* VFC Providers must follow the approved standard of care for immunizations.



# What do you need to monitor temperatures?

## \* **Appropriate vaccine storage units:**

### \* Montana VFC Policy:

- \* No dormitory-style units
- \* Any newly acquired or replacement units must be stand-alone refrigerators and freezers.
- \* Combined refrigerator/freezers are “grandfathered” in as long as data show they can maintain proper temperatures.



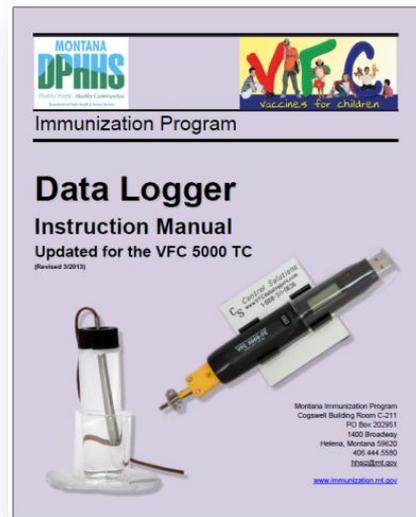
OR



# What do you need to monitor temperatures?

## \* CDC-compliant thermometer – VFC5000 TC

- \* Distributed to all Montana VFC Providers
- \* Provider must use in VFC vaccine storage units
- \* Data Logger Instruction Manual
- \* Two-year calibration – Due in 2015.





# What do you need to monitor temperatures?

## \* Vaccine Incident Report (VIR):

- \* Report required if serious temperature excursion where vaccine manufacturers were called.
- \* Steps 1-6 are instructions for responding to out-of-range temperatures
- \* Have on hand as reference
- \* Do not fill out completely unless instructed to do so.

[www.immunization.mt.gov](http://www.immunization.mt.gov)

“VFC” link

**MONTANA**  
Department of Public Health & Human Services

**Immunization Program**

**Vaccine Incident Report – Data Loggers (Continuously Monitoring Thermometers)**

Follow the procedures below when your publicly purchased vaccine has experienced out-of-range storage temperatures. Use a separate report for each affected storage appliance.

1. Do not use or discard the affected vaccine.
2. Contact your Vaccine Coordinator or Alternate Vaccine Coordinator (if primary is unavailable).
3. Isolate the affected vaccine, mark the boxes with an "X," and post a clear "Do Not Use" sign.
4. If the situation is temporary or quickly remedied (w/in 1.5 hours), keep the vaccine in its original storage unit with the door closed. Keep the Data Logger with the vaccine.
5. If necessary, move the vaccine to a working storage unit or your emergency storage location. Be sure to move the Data Logger with the vaccine and continue to monitor the temperatures.
6. Contact the Montana Immunization Program 444-5500.
7. Record the following information about the incident:

Facility Name: \_\_\_\_\_ VFC # \_\_\_\_\_  
Telephone # \_\_\_\_\_ Date Reported \_\_\_\_\_

Storage Unit Involved: \_\_\_\_\_  
(Use a separate report for each affected storage appliance.)

When was the incident discovered? Date: \_\_\_\_\_ Time: \_\_\_\_\_ am pm  
Room Temperature at time of discovery: \_\_\_\_\_ °C \_\_\_\_\_ °F  
Storage unit temperature at time of discovery: Refrigerator \_\_\_\_\_ °C \_\_\_\_\_ °F Freezer \_\_\_\_\_ °C \_\_\_\_\_ °F  
(Record temperature for refrigerator and freezer if a combined unit.)

Follow the instructions on page 7 of your Data Logger instruction manual to download and view your data.

Number of temperature excursions above or below thresholds (dotted lines) since last download: \_\_\_\_\_

- If 25 temperature excursions since last download, contact the Montana Immunization Program for help interpreting your data. (444-6277 or [buschm@mont.gov](mailto:buschm@mont.gov). Attach Data Logger data file if emailing or fax graph to 444-1923.)
- If 25 temperature excursions since last download, use your Data Logger graph to fill in the information below:

Excursion	Date	Start Time	Stop Time	Range Temperature	Range (per excursion)	Temperature during excursion	Average	Time (last 1-3)	Estimated amount of vaccine and vaccine lot numbers
1									
2									
3									
4									
5									

8. Has the affected vaccine experienced previous temperature excursions?  yes  no
9. Inventory the affected vaccine in columns 3-5 of the Vaccine Inventory Table on page 2 of this form.
10. Contact the manufacturer of the affected vaccine to determine its viability. Use the contact information on page 5. The manufacturer will need the information recorded above to determine vaccine viability.
11. Record the information from the manufacturer in columns 6-8 of the Vaccine Inventory Table (next page).

MT 12 VFC Form 207.2 (revised 03/28/12) Page 1 of 5

# What do you need to monitor temperatures?



- \* **Trained, competent staff:**
- \* Vaccine manager and alternate manager are the experts:
  - \* Set-up, download, read data, trouble-shoot, call Immunization Program, send data to the Immunization Program
  - \* Train and supervise staff involved in temperature monitoring
  - \* Review paper temperature logs
- \* All staff involved in temperature monitoring should be able to:
  - \* Check and log twice daily readings
  - \* know when and how to respond to out-of-range indications
- \* New Vaccine Managers and Alternate Vaccine Managers must:
  - \* Notify the Immunization Program
  - \* Complete the Annual Provider Education Requirement



# Data Loggers

## \* What's in the box?

- Data Logger
- Cradle
- Glycol-filled vial with probe and wire
- Acrylic vial stand
- Ties and sticky squares
- Extra battery



# Data Loggers

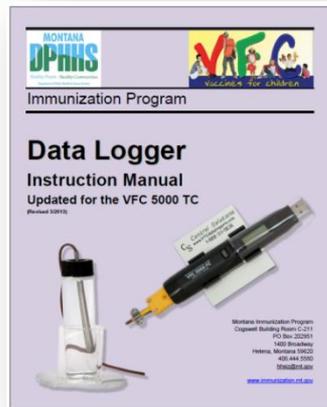
## \* What's not in the box?



- Software:  
EasyLog Version 6.3  
Download from Internet – FREE!!!  
Make sure everyone involved in temperature monitoring can access EasyLog software and data files.
- Data Logger Instruction Manual

[www.immunization.mt.gov](http://www.immunization.mt.gov)

Under the “VFC” link



## Data Loggers:

- [EasyLog Version 6.3 Download](#)
- [Montana Data Logger Instruction Manual VFC5000 TC \(03/15/13\)](#)

# Data Loggers

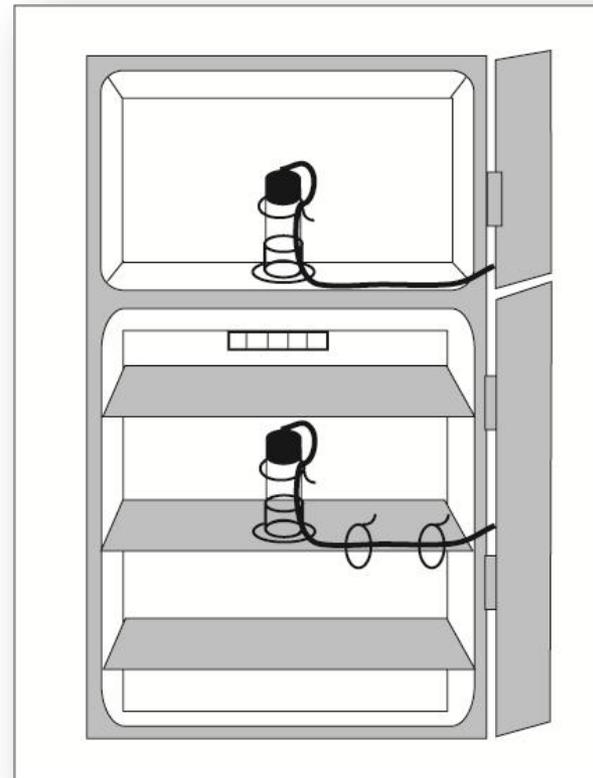
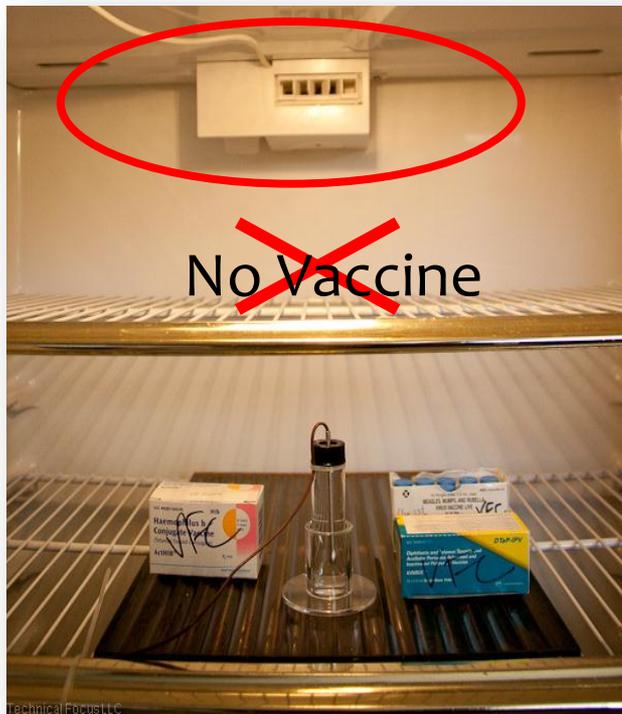
- \* **Proper Vaccine Placement  
(Section 13 of VFC Provider Handbook)**

- \* **Keep in original boxes.**
- \* **Leave air spaces between boxes.**
- \* **Keep vaccine and data logger probe away from ceiling, floor, walls, vents, fans, and coils.**
- \* **DO NOT store vaccine in doors or crisper drawers.**
- \* **If using a combo refrigerator/freezer, keep vaccine and data logger probe away from air vent from the freezer.**



# Data Loggers

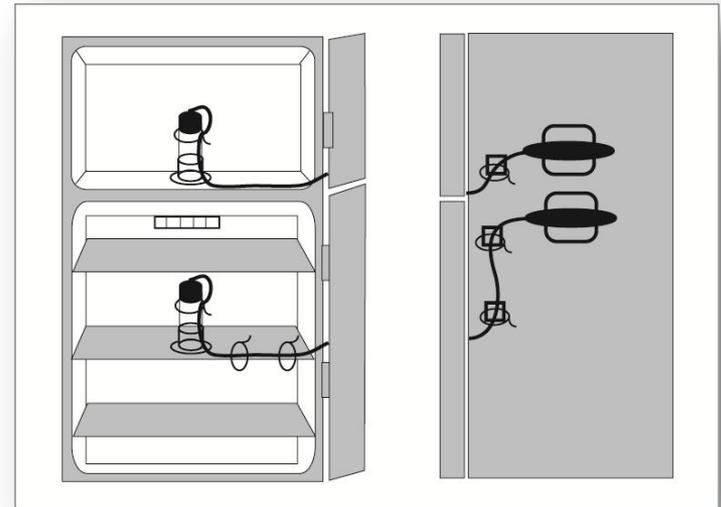
Vent channeling air in from the freezer.



# Data Loggers

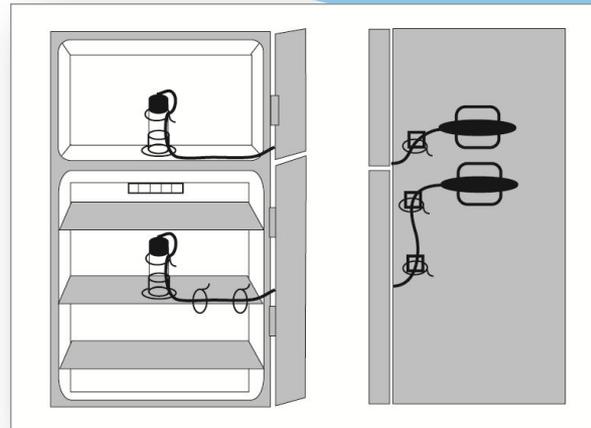
## \* Installing the thermo-couple probe (Section 4 Data Logger Instruction Manual)

- Centrally locate with vaccine.
- Keep data logger probe away from ceiling, floor, walls, vents, fans, and coils.
- Run wire along shelf edge and out hinge-side of door. Stabilize probe vial and wire.
- Attach cradle so probe wire can easily reach the back of the data logger. Wire must stay firmly seated in the device.
- Options:
  - Sticky squares and plastic ties are “permanent.” Attach temporarily at first with tape and twist ties.
  - Glass shelves? Use tape.
  - Is door reversible?
  - Do you need a longer wire?
  - Once installed, secure the vial stand in place with tape.

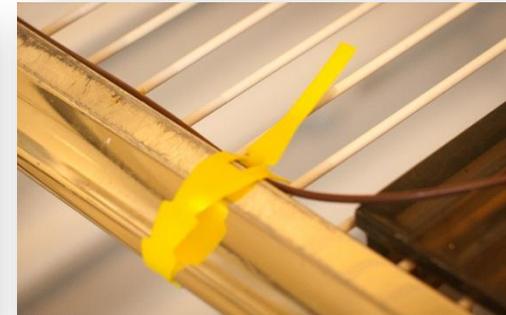
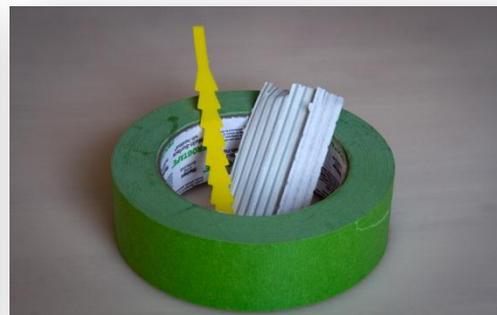
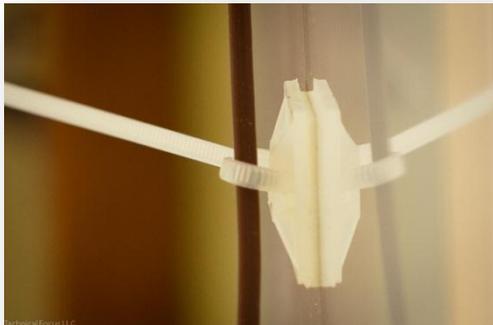


# Data Loggers

## \* Installing the thermo-couple probe

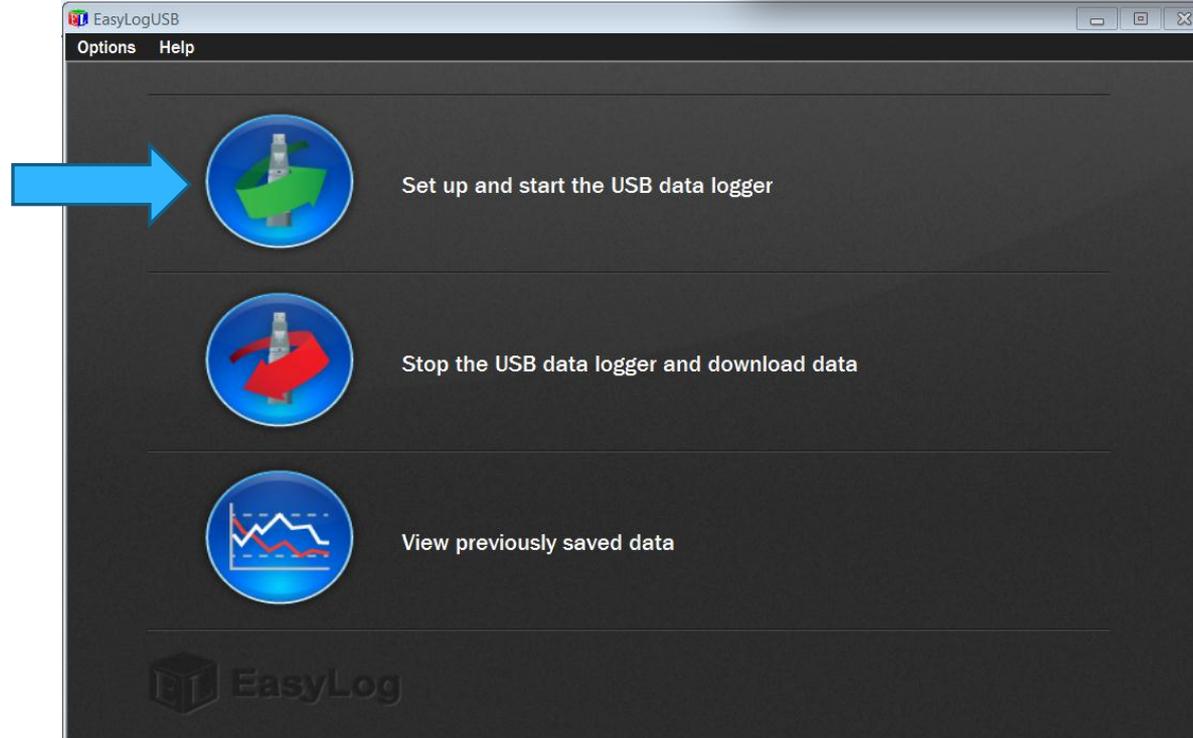


Once installed, allow vial to equilibrate for 2 hours before attaching and activating data logger.



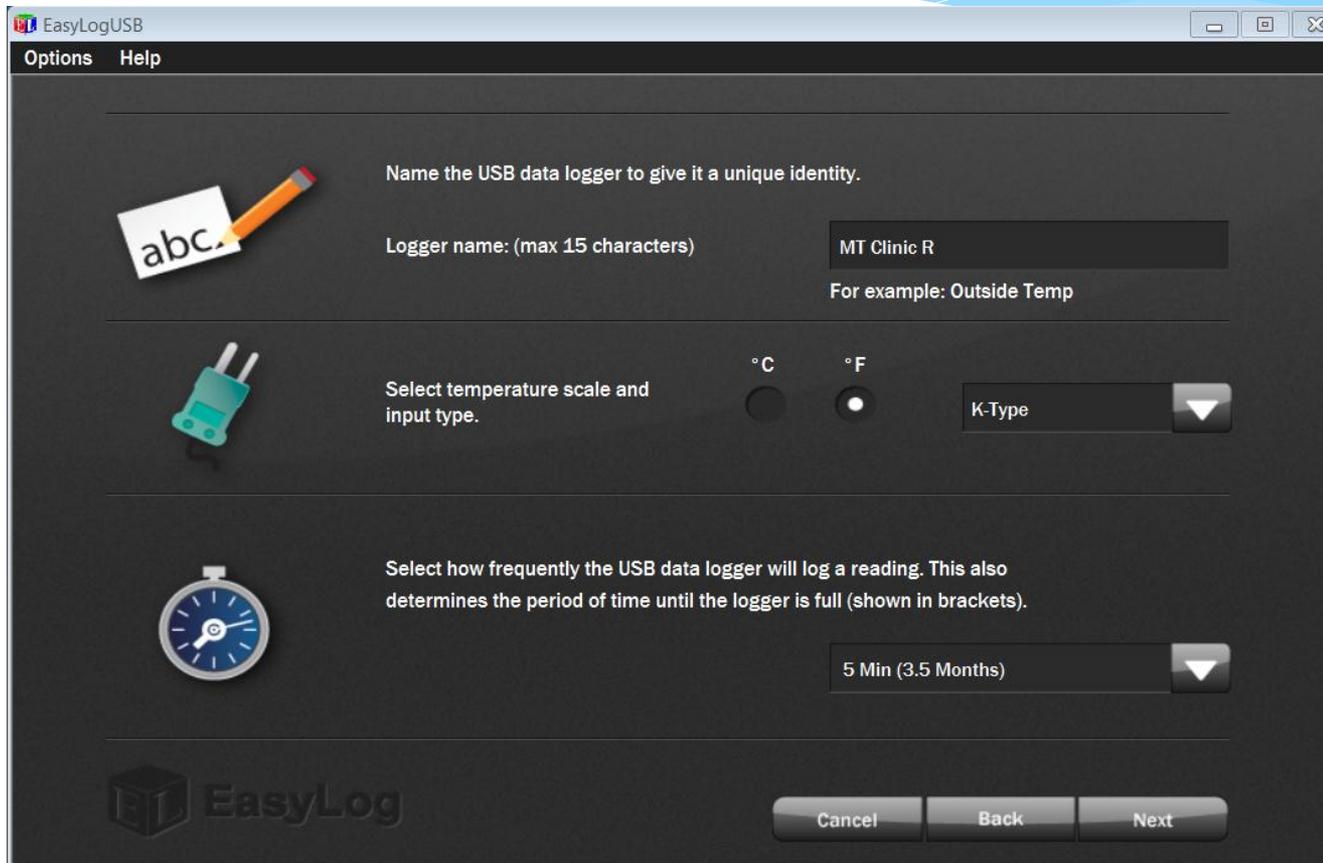
# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual)



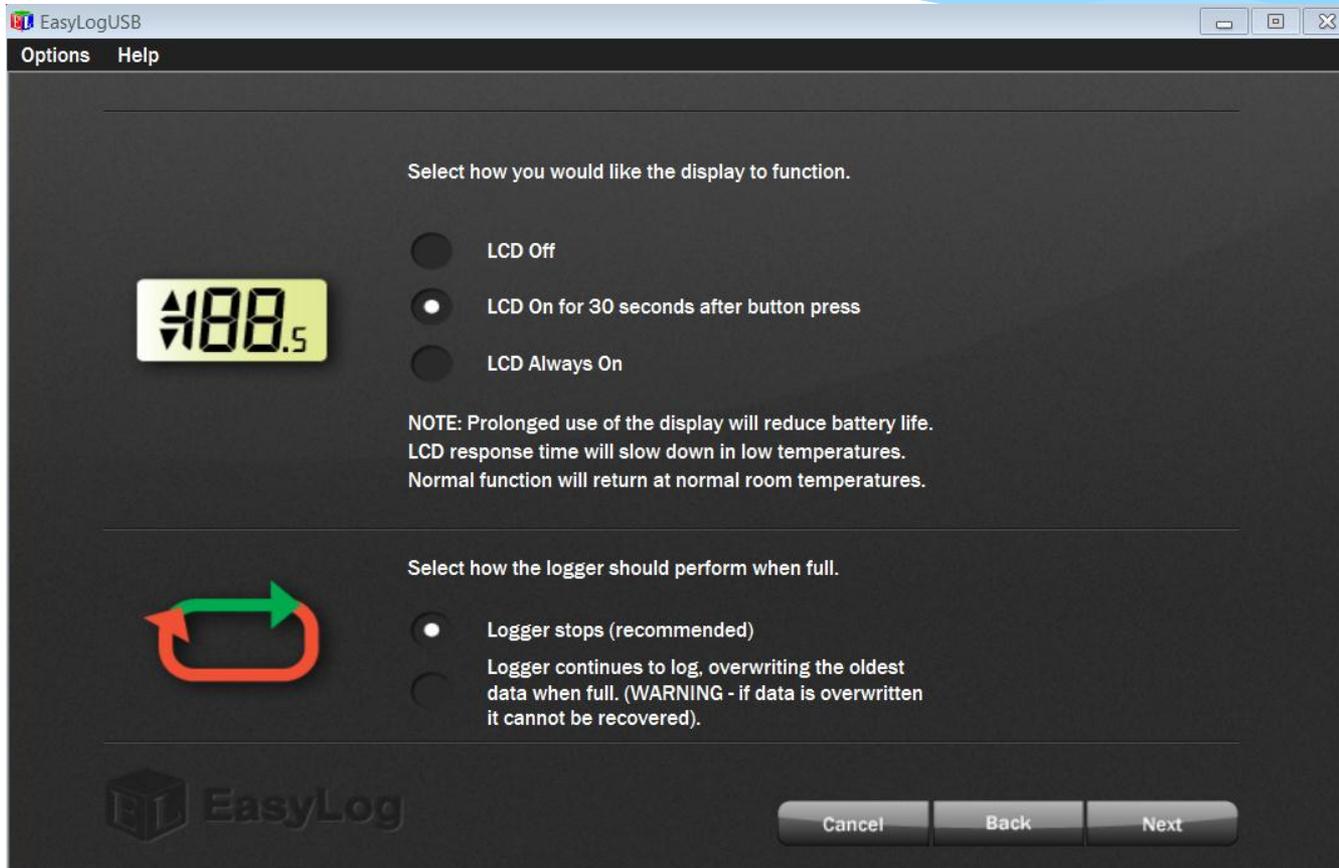
# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual):



# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual):



# Data Loggers

- Setting up the Data Logger  
(Section 5 Data Logger Instruction Manual):

## Temperature Alarm Thresholds

EasyLogUSB

Options Help

## Freezer

Select the Alarms to be set, otherwise click 'Next' to continue.

High Alarm

Low Alarm

Disable LEDs

Note: Tick 'Hold' for the USB Data Logger to continue indicating an alarm condition even when the value has returned to within the set parameters.

High Alarm	<input type="text" value="6.0"/>	°F	<input checked="" type="checkbox"/>	Hold
Low Alarm	<input type="text" value="-31"/>	°F	<input checked="" type="checkbox"/>	Hold

EasyLog

Cancel Back Next

# Data Loggers

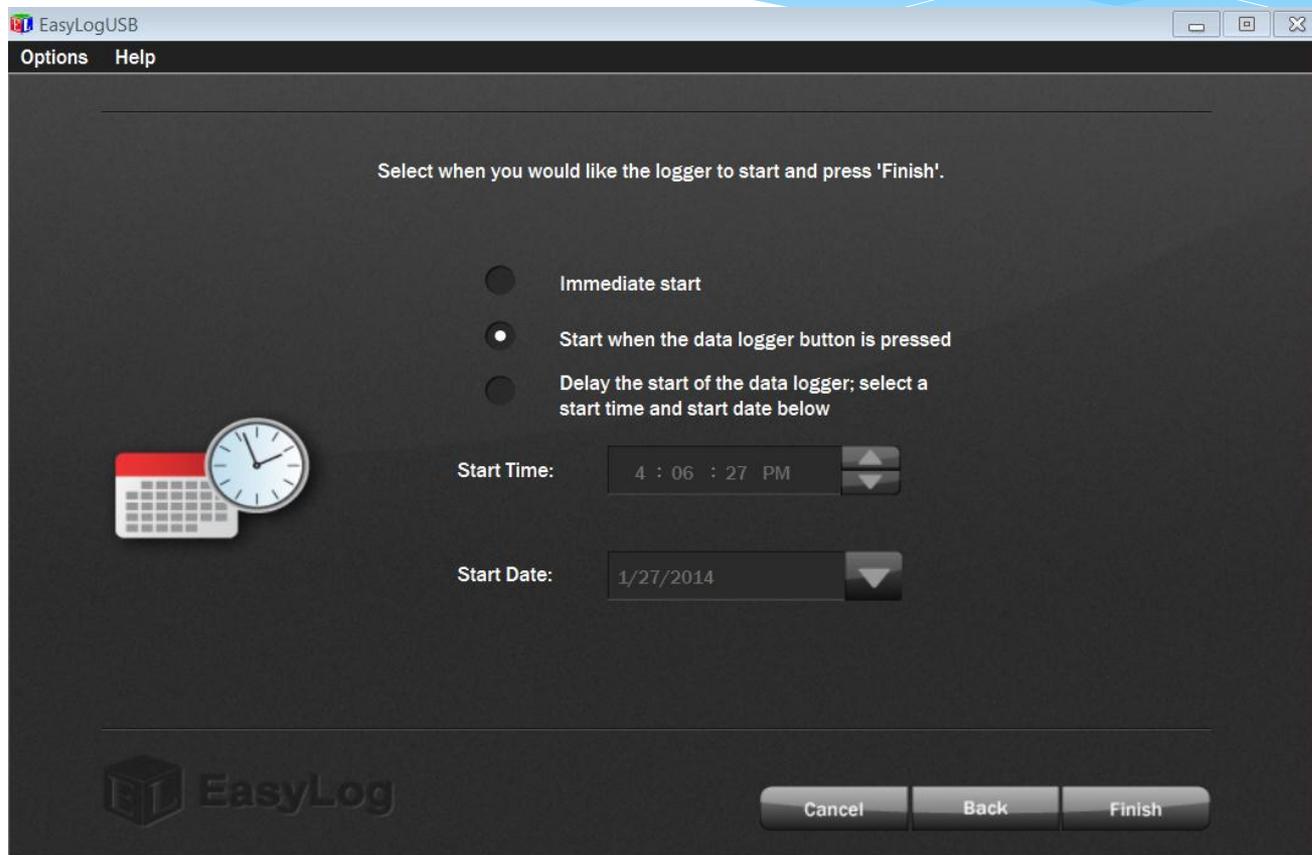
## \* Setting up the Data Logger (Section 5 Data Logger Instruction Manual):

### Alarm Delay



# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual):



# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual):

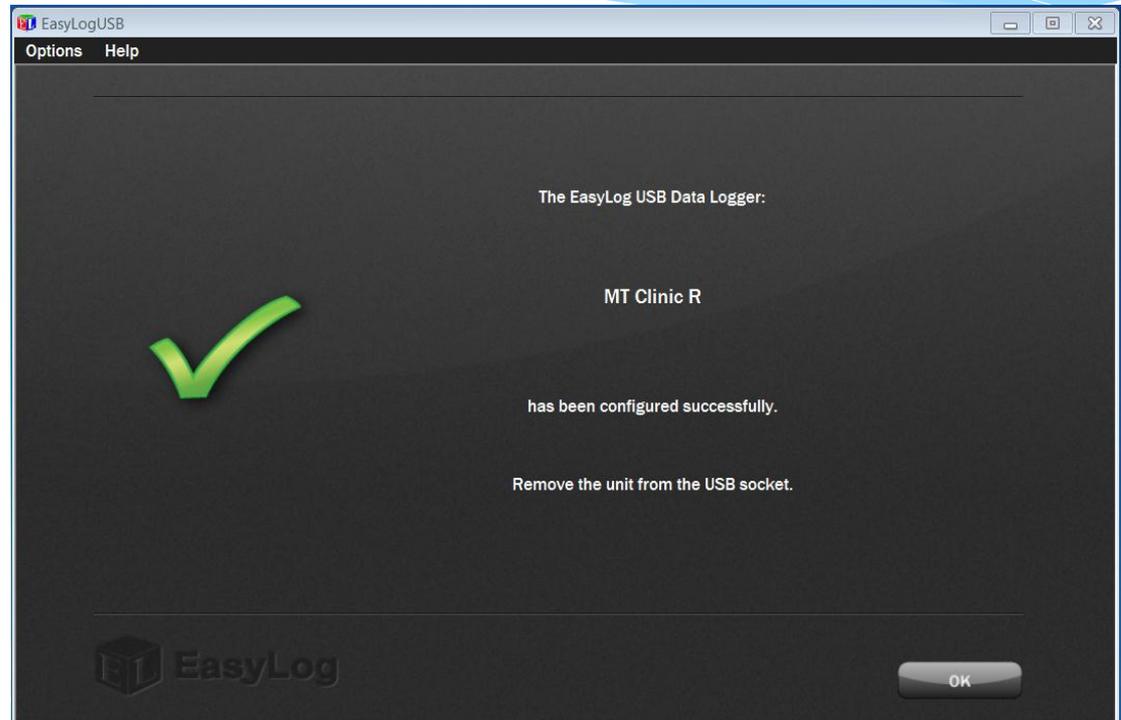
**Remove Data Logger  
from USB:**



Yes- Data logger is set for “Push Start.” DON’T PUSH YET!!!



No- Data logger is not set. Start over in Section 5.



# Data Loggers

- \* **Setting up the Data Logger**  
(Section 5 Data Logger Instruction Manual):

1. **Place the data logger in its cradle**
2. **Attached the probe wire**
3. **THEN push to start button.**

**LOG** >>> **39F**



# Data Loggers

## Twice Daily Readings (Section 6 Data Logger Instruction Manual):

Each day your clinic is open:

- Min/max and current every morning
- Current only every evening
- Check that LED is **GREEN** AM and PM

Day of Month	1		2		
Time of Day	am	pm	am	pm	ar
Staff Initials	kk	kk	kk	kk	
LED Green	Y	Y	Y	Y	
Refrigerator (F)					
≥49°					
48°					DO NOT U
47°					
46°					
45°					
44°					
43°	m		m		
42°					
41°					
40°	m		m		
39°					
38°					

Wait 30 seconds; Blank,  
start over



Push #2 Max



Push #3 Min



# Data Loggers

## Out-of-Range Response

### (Section 6 Data Logger Instruction Manual):



**Montana Immunization Program**

Refrigerator Temperature Log Month/Year \_\_\_\_\_ Storage Unit \_\_\_\_\_ Provider \_\_\_\_\_ VFC# \_\_\_\_\_

**Routine Temperature Monitoring—Record:**

- Time of day and initials of staff recording temperatures
- Whether the LED is green (Y or N)
- **AM:** Record current temperature with an X, and minimum and maximum temperatures each with an M.
- **PM:** Record current temperature with an X.

**Out-of-Range Response:** If temperatures are in the shaded zone or the Data Logger LED light is red:
 

- DO NOT USE or DISCARD the vaccine.
- Obtain a Vaccine Incident Report and follow Steps 1–6. ([www.immunization.mt.gov](http://www.immunization.mt.gov) under “VFC” link)
- Call the Montana Immunization Program at 444-5580.

**Retain temperature logs for three years.**

Day of Month	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15			
Time of Day	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm		
Staff Initials																																
LED Green?																																
≥50°																																
49°	DO NOT USE vaccine that has been stored at these temperatures (shaded grey). See instructions at top of page.																															
48°																																
(C) 47°																																
46°																																
45°																																
44°																																
43°																																
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39°																																
38°																																
37°																																
36°																																
35°																																
34°																																
33°	DO NOT USE vaccine that has been stored at these temperatures (shaded grey). See instructions at top of page.																															
32°																																
31°																																

Respond immediately if:

LED is **RED**

MIN/MAX, or Current temperature is in the grey area.

(One exception to this rule)

# Data Loggers

## Out-of-Range Response (Section 6 Data Logger Instruction Manual):

How do you

 **Montana Immunization Program** 

### Vaccine Storage Unit Trouble-Shooting Log

Record issues with storage unit and corrective actions taken in the table below.  
(e.g., near out-of-range temperatures, malfunctions, repairs)

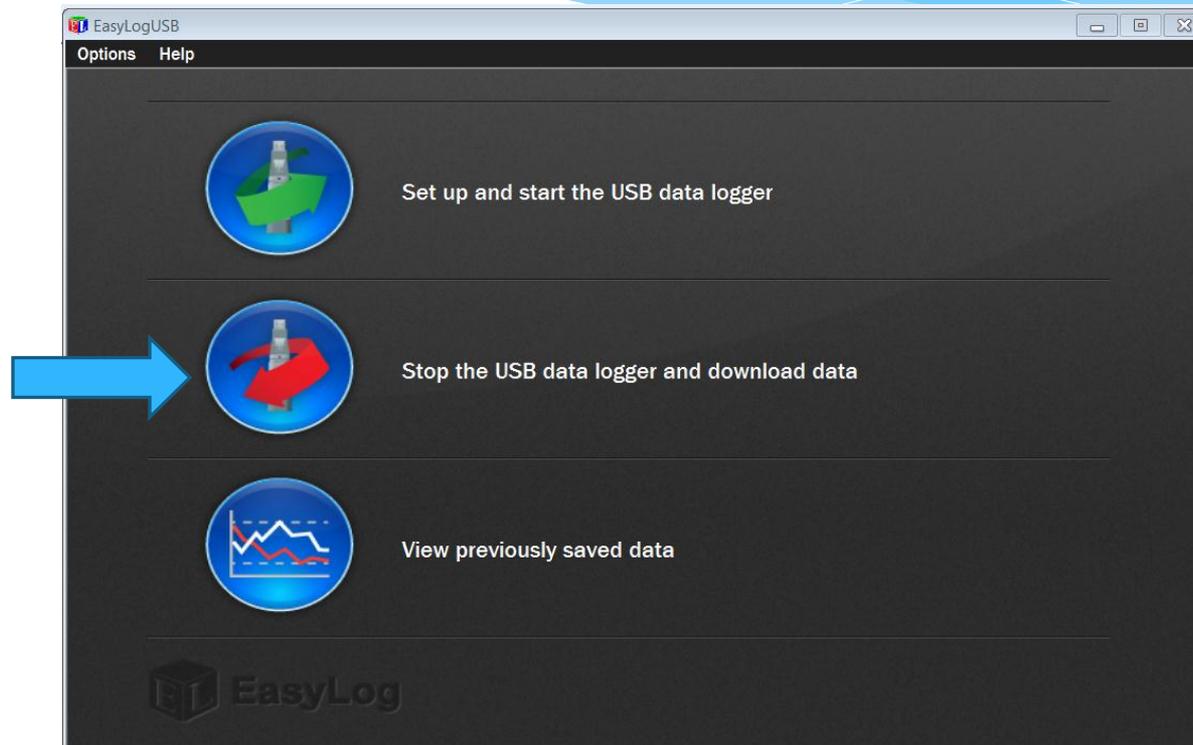


Date	Time	Description of Issue	Corrective Action Taken	Staff Initials

- Download and review data logger data. Send data to Immunization Program
- Document incident on page 3 of your temperature logs (Trouble-shooting log)

# Data Loggers

- Downloading and Reviewing Data  
(Section 7 Data Logger Instruction Manual):



“Yes” on pop-up. Then “OK.”

# Data Loggers

- Downloading and Reviewing Data  
(Section 7 Data Logger Instruction Manual):

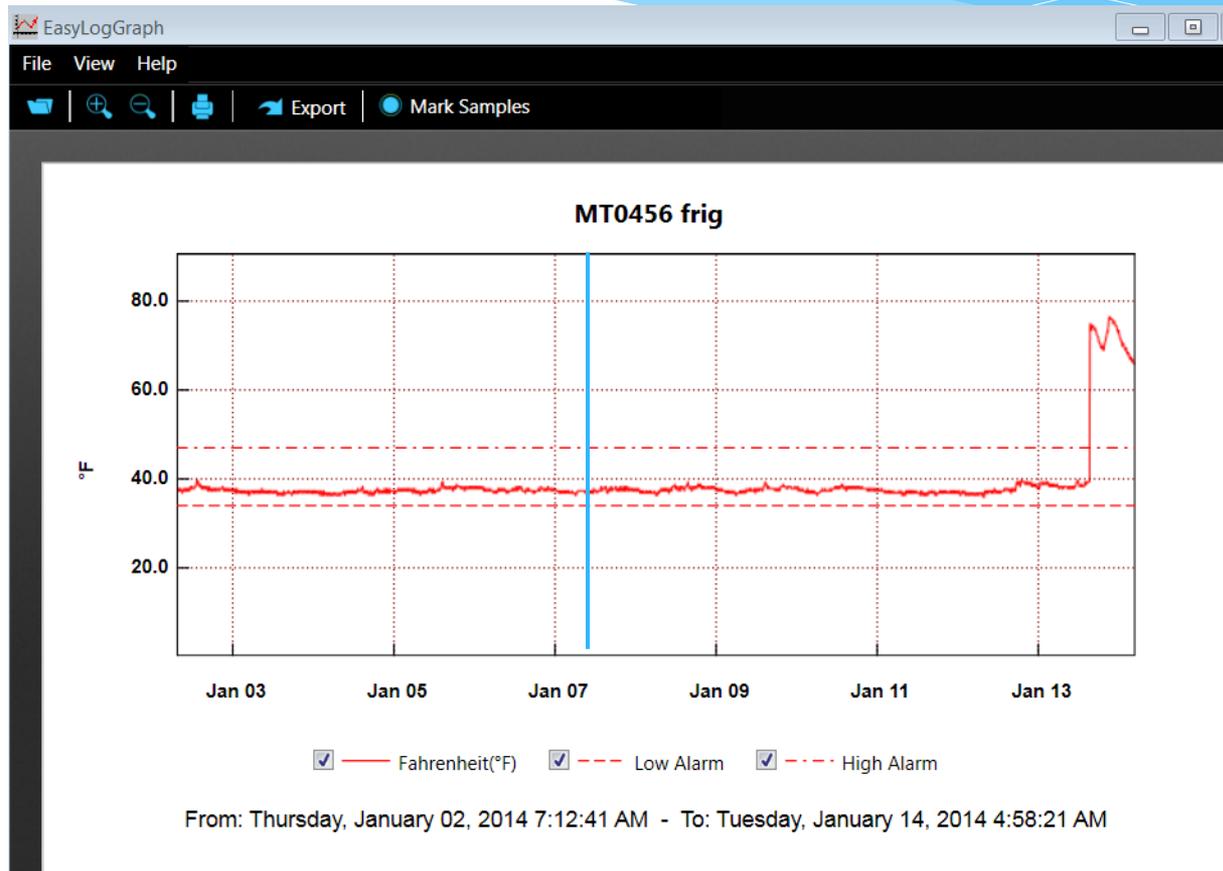
Adds unique file to this folder.



Add date to device name.

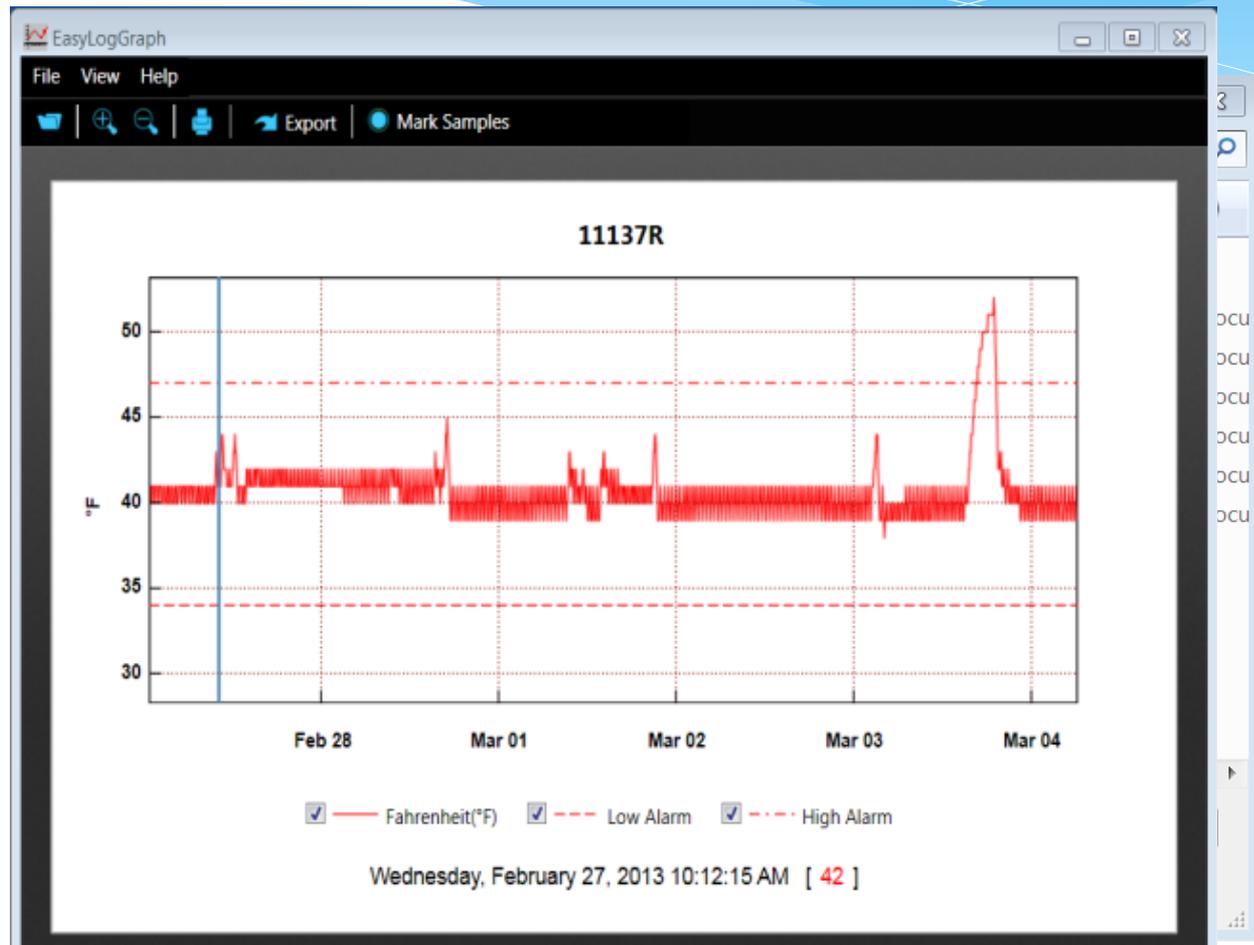
# Data Loggers

- Downloading and Reviewing Data  
(Section 7 Data Logger Instruction Manual):



# Data Loggers

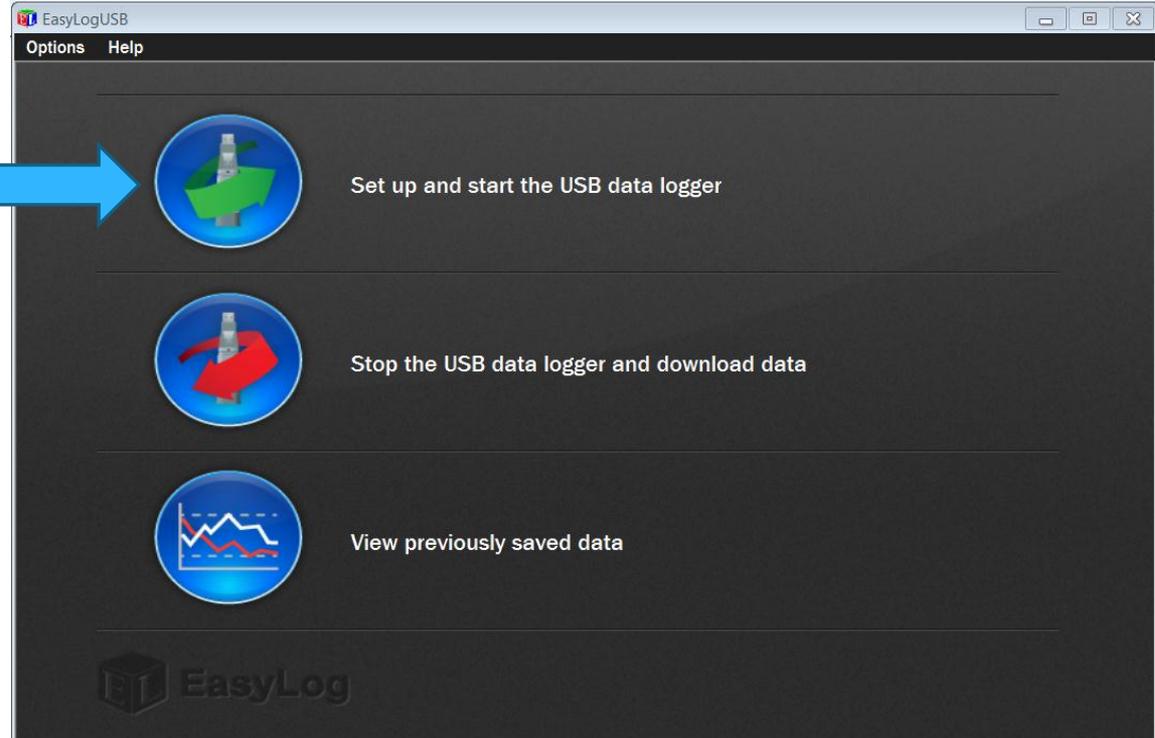
- Downloading and Reviewing Data (Section 8 Data Logger Instruction Manual):



# Data Loggers

- \* **Resetting Data Logger**  
(Section 5 Data Logger Instruction Manual):

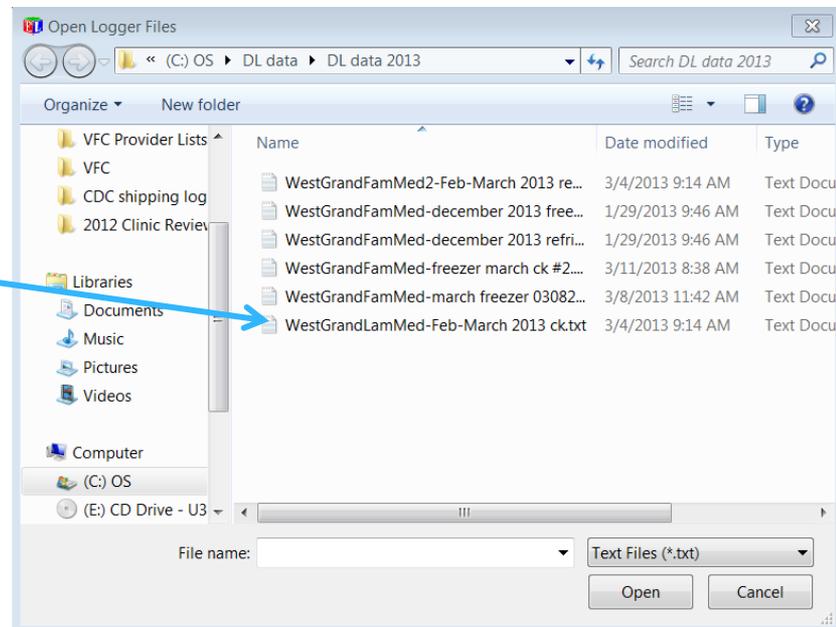
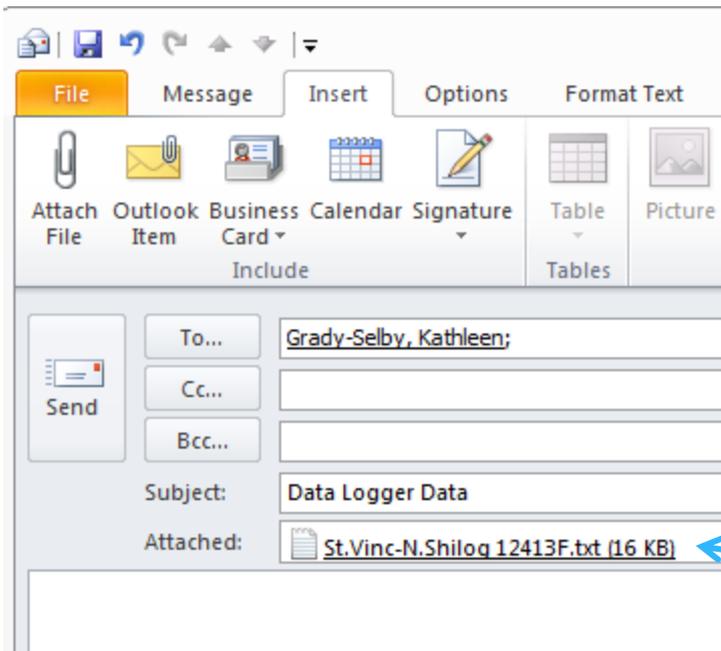
**After download,  
You must RESET  
the data logger.**



# Data Loggers

## • Emailing Data to the Immunization Program (Section 9 Data Logger Instruction Manual):

1. Open email and address to [hhsiz@mt.gov](mailto:hhsiz@mt.gov)
2. Click “Attach File”
3. Navigate to data files
4. Select file to attach
5. Send email



### DO NOT:

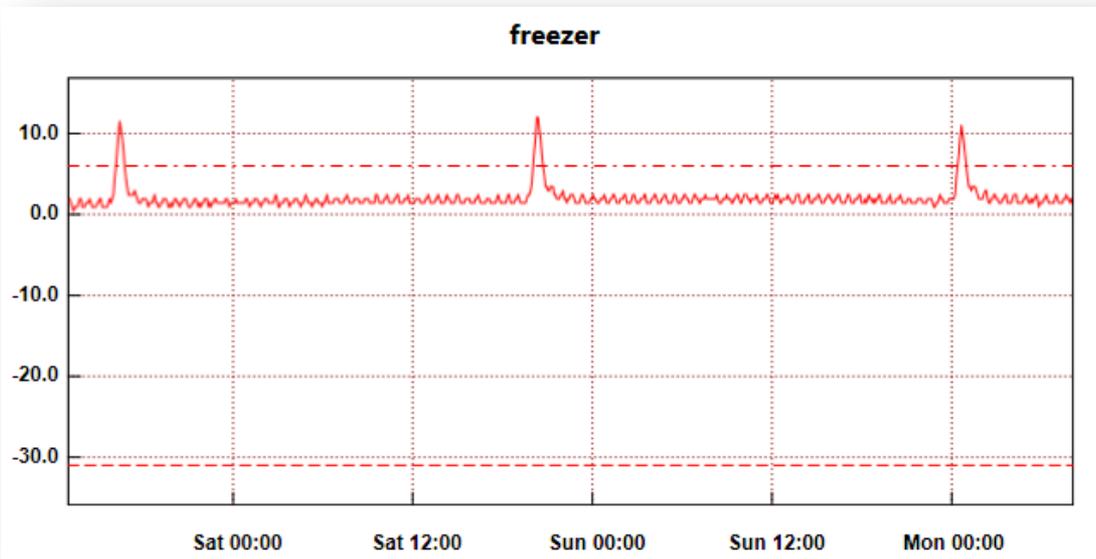
- “Export” from EasyLog software
- Print and fax graph

# Data Loggers

## Freezer Defrost Cycles (Section 5, page 6 Data Logger Instruction Manual):

### What does “Automatic Defrost” Mean?

Roughly once every 24 hours, your freezer warms up for about an hour. This prevents ice from accumulating on the inside of the chamber.



Is the OK?

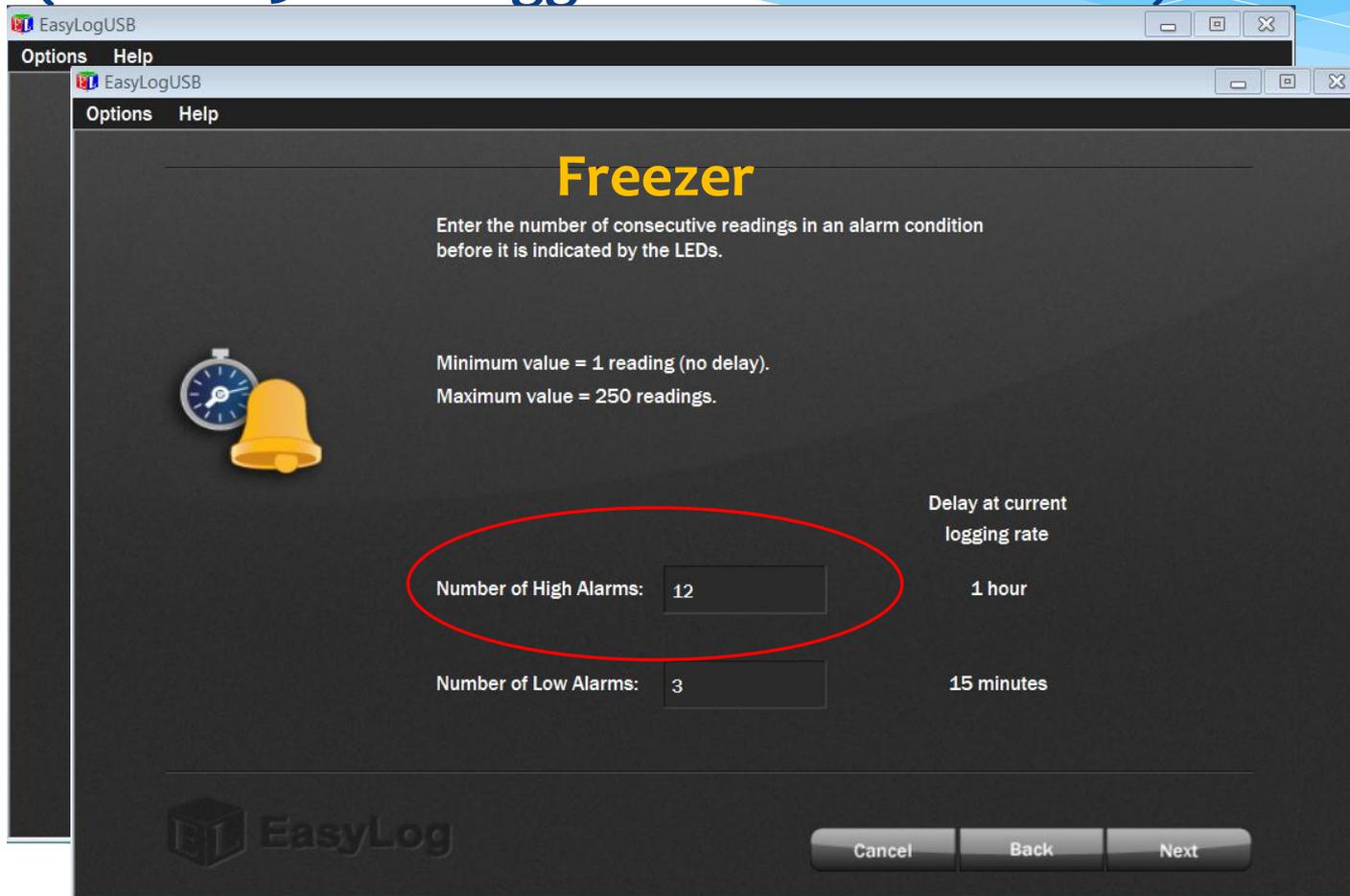
Yes within certain limits.

- $\leq$  One hour or less
- $\leq$  4 times per day
- $\leq$  14°F.

Won't this trigger **RED LIGHTS**?

# Data Loggers

- \* Freezer Defrost Cycles – Alarm Delay  
(Section 5 Data Logger Instruction Manual):



# Data Loggers

## Freezer Defrost Cycles (Section 5, page 6 Data Logger Instruction Manual):

If you have an automatic defrost freezer:

Max temperature will always be out-of-range (consistently)

OK, if no **RED** light

Respond immediately to **RED** light.

Day of Month	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15			
Time of Day	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm		
Staff Initials																																
LED Green?																																
≥11°	DO NOT USE vaccine that has been stored at these temperatures (shaded grey). See instructions at top of page.																															
10°																																
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-15°																																
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-18°																																
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-21°																																
-6°																																
-7°																																
-22°																																
-8°																																

← **RED-Respond**

← **High Max - OK**

# Data Loggers Basics

## Recap

### What you need:

- Proper storage units
- Data loggers
- Paper temperature logs
- Vaccine Incident Report
- Trained, competent staff

### Get set up:

- Load vaccine properly
- Install and secure probe vial
- Set-up data logger with EasyLog software
- Attach wire, push button

### Day-to-Day Management:

- AM – Check LED status, log min, max, and current temperatures
- PM – Check LED status, log current temperature
- Respond immediately to **RED** lights and out-of-range temperatures.

### Monthly:

- Download, review, and archive data at least monthly
- Uniquely name files (append date)
- There should be no surprises.

# Data Loggers Basics

## Resource Links

### **Montana VFC Program:**

<http://www.dphhs.mt.gov/publichealth/immunization/vaccinesforchildren.shtml>

**VFC Provider Handbook**

**Data Logger Instruction Manual**

**EasyLog Software Download**

**Paper Temperature Logs**

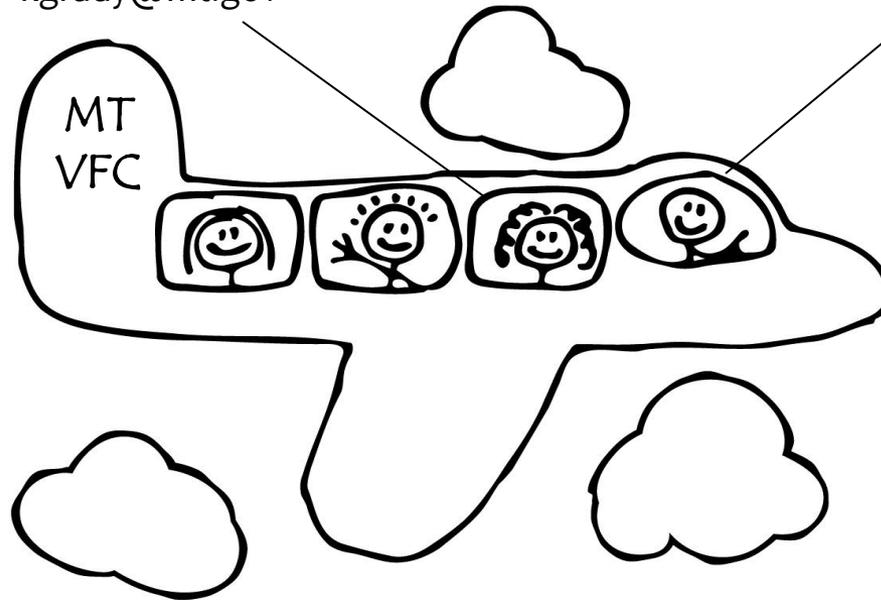
**Vaccine Incident Reports**

### **CDC Vaccine Storage and Handling Toolkit:**

<http://www.cdc.gov/vaccines/recs/storage/toolkit/>

Katie Grady-Selby  
VFC Quality Specialist  
444-1613  
kgrady@mt.gov

Lori Hutchinson  
Vaccine Manager  
444-0277  
lhutchinson@mt.gov



# Questions?

Montana Immunization  
Program  
444-5580  
hhsiz@mt.gov