Annual maintenance of portable minimum/maximum thermometers

To be attended:

- At least once a year, or
- If the battery is running low. This may be indicated when the read out is flashing or dull in appearance.

Equipment needed:

- Minimum/maximum thermometer
- New battery
- Pen
- Label
- Foam cup with water
- Freezer

The annual maintenance consists of three stages:

1. Battery change and label accordingly.
2. Recalibrate the thermometer and label accordingly.
3. Place min/max thermometer probe in empty vaccine box. Then place the vaccine box into the vaccine fridge.

Stage 1: Battery change

Step 1
Remove the existing battery and place the new battery into the thermometer.

Stage 2: Recalibrate

Step 2
Fill a foam cup with \( \frac{2}{3} \) water.
Step 3
Place the foam cup in a freezer. Wait until a fine layer of ice forms on top of the water. This could take up to $2\frac{1}{2}$ hours.
Step 4
Place the minimum/maximum thermometer probe into the ice slurry. Ensure that the probe does not touch the side.

Step 5
Leave the minimum/maximum thermometer probe in the ice slurry until it reaches 0°C or -1°C / +1°C. Once it reaches this temperature, reset the thermometer and leave in ice slurry for 2 minutes. Refer to your thermometer instructions on how to do this.

Note: If 0°C or -1°C / +1°C is not achieved, replace the battery with a new battery and repeat the ice slurry test (you may need to freeze the water again). If it fails to reach 0°C or -1°C / +1°C? discard the minimum/maximum thermometer and replace with a new minimum/maximum thermometer.

Step 6
Remove the probe from the ice slurry and dry it thoroughly.
Step 7
Label the back of thermometer with **NEW BATTERY & ICE SLURRY** followed by the current date as shown below.

NEW 9/3/2016

The date when the thermometer was first installed.
Do not remove this label.

NEW BATTERY & ICE SLURRY
9/3/2017

Label as shown with the current date
Stage 3: Setting up for the vaccine fridge

Step 1
Place the minimum/maximum thermometer probe into an empty vaccine tray insert. Then secure with sticky tape.

Step 2
Place the secured probe into the vaccine box along with the product information sheet. Storing the probe like this mimics the same environment as the vaccine.
Step 3
Label the outside of the vaccine box to ensure the probe is not removed.

Step 4
Reset the thermometer prior to placing the vaccine box with probe in the vaccine fridge.
Step 5
Place the vaccine box with probe, on the middle shelf and towards the back of the vaccine fridge. This is only needed:

- For domestic fridges, or
- If the purpose built fridge digital display is broken, or
- If there is a power failure.

Step 6
Document the battery change and recalibration (ice slurry test) on the reverse of the NSW Health Vaccine Refrigerator Temperature Chart (NH700227) or on a locally developed cold chain equipment register.
Setting up a NEW minimum/maximum portable thermometer

When to use: This procedure is only completed once when you first use a new minimum/maximum thermometer. Minimum/maximum thermometers must be replaced:

- If the minimum/maximum thermometer or probe or wire is damaged.
- If the minimum/maximum thermometer is malfunctioning and/or not calibrating.

Equipment needed:

- New minimum/maximum thermometer
- New battery (if not supplied with the new minimum/maximum thermometer)
- Pen
- Label

Step 1

If not already inserted, place a new battery inside the minimum/maximum thermometer. Some thermometers may have the battery already installed and require a plastic tab to be removed before the battery is activated.

Step 2

Record the date that the thermometer was first used. Place a label on the back of the thermometer and write ‘NEW’ followed by the date.

Record the date

NEW 9/3/2017
Step 3
Record the date that the battery was installed. Place another larger label on the back of the thermometer and document as shown below:

Step 4
Recalibrate (ice slurry test) the thermometer using the steps shown in this document.