

WHY FRIDGES FAIL 2: RTM DATA FOR MAINTENANCE

Prepared by Mozambique Ministry of Health, Nexleaf Analytics, and VillageReach

Assessment Model: Technicians used Nexleaf Analytics' **ColdTrace** remote temperature monitoring (RTM) data to **remotely identify** every failing fridge in a province in **Mozambique**. They then visited or called those 27 clinics with failing fridges, diagnosed and attempted to fix the failures, verified repairs using the ColdTrace dashboard, and documented all of their findings and actions.

Temperature Data Signatures of 'Thermostat Adjustment Needed' and 'Flat Battery

Clear patterns in temperature data viewable on the ColdTrace dashboard can be used to remotely diagnose fridge failures due to **thermostat adjustment needed** and **flat battery** (Figures A and B). 11 solar fridges with flat batteries and 9 fridges with improperly adjusted thermostats were diagnosed in this assessment.

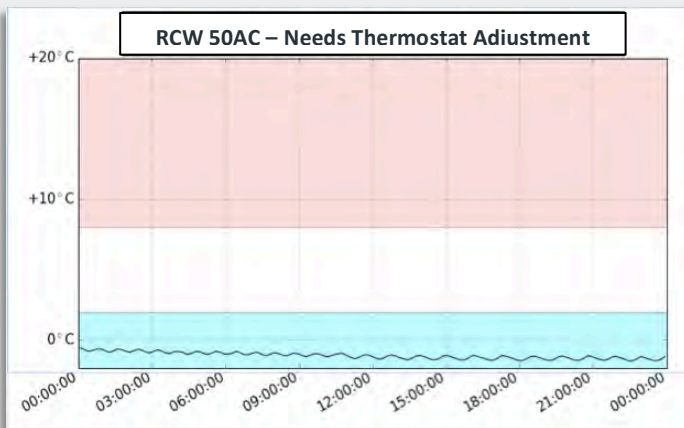


Figure A

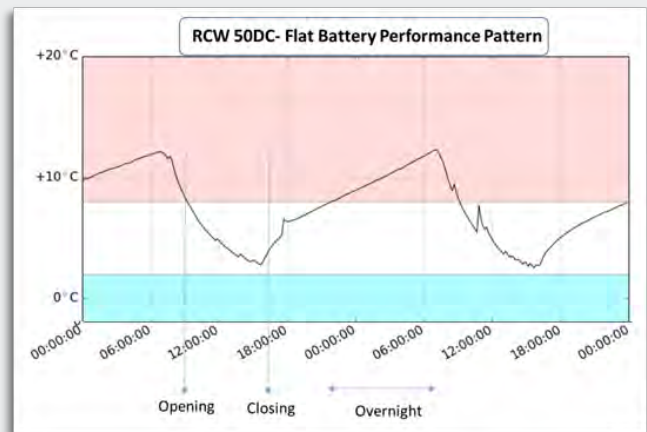


Figure B

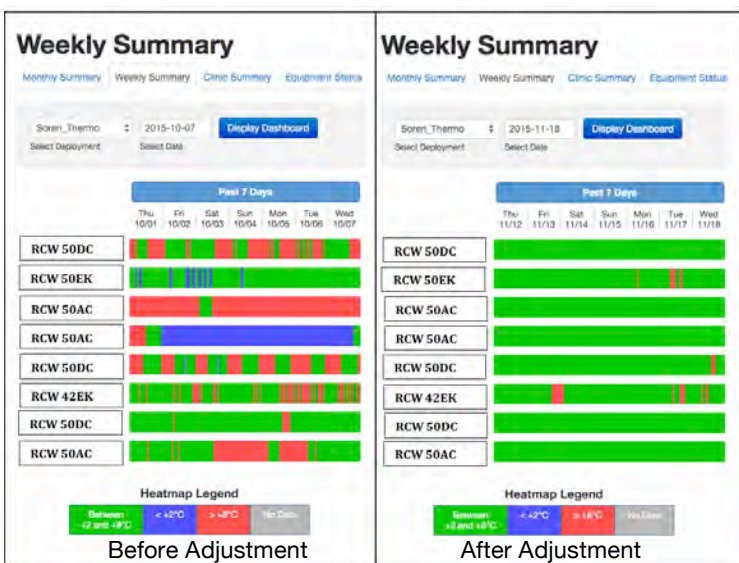


Figure C: Screenshot of ColdTrace dashboard showing fridge performance before and after thermostat adjustment.

Fixing Thermostat Adjustments Increased Fridge Uptime by 30%

Eight fridges were fixed through a **thermostat adjustment** to achieve the correct temperature range. One such facility was visited in person. **Seven were diagnosed and fixed remotely.** After reviewing temperature data on the ColdTrace dashboard, the MOH technician **contacted the 7 facilities over the phone** and provided instructions on how to adjust the thermostats. **After thermostat adjustment, fridge uptime at the 8 facilities was increased by 30%.** Heat exposure was reduced by 78%, and cold exposure was reduced by 60%.