Food Safety in Schools

A Closer Look at How One Public School System Strengthened Its Food Safety Program with **ComplianceMate™**

When the Food and Nutrition Program at one of the largest public-school districts in the Mid-Atlantic region decided to uplevel its food safety efforts, it hit the target – and then some.

In just 30 days at only three schools, the school district, which serves meals to well over 75,000 students daily, saved over $3,000 worth of food inventory and reduced labor spent on food safety while simultaneously improving food safety performance – all after a series of storms knocked out power at multiple schools storing food, juice, and milk in walk-in refrigerators and freezers. That's thanks to a simple food safety technology investment whose costs averaged out to only around $2 per day and required no infrastructural changes to install.

Those are the findings from an Impact Report of a 30-day pilot test of the **ComplianceMate™** (formerly TouchBlock™) remote temperature sensing system at three schools.[1] Like all the best school systems, this school district is always looking for innovative and forward-looking ways to produce better outcomes for its students, staff, teachers, and parents. To that end, they put ComplianceMate™ to the test and were able to:

1. Identify which cold-holding units maintained safe temperatures through a power outage, so they could save inventory – including over $3,000 worth of inventory saved in just the 30-day pilot test period.

2. Identify cold-holding units where inventory had been exposed to unsafe temperatures, so they could discard food product prior to consumption and prevent potential foodborne illness outbreaks.

3. Reduce staff labor and time spent on temperature monitoring tasks.

More than merely delivering impressive cost savings, ComplianceMate™ thus became a powerful tool in their arsenal for creating a solid track record of food safety excellence that schools still reliant on manual temperature logging simply can't beat. Here's how it worked.

[1] Full Impact Report available upon request.

How This Public School System Tested the ComplianceMate™ System

The pilot test began shortly before summer session, with the schools each storing about a week's supply of food, milk, and juice in the equipment being monitored in walk-in refrigerators, walk-in freezers, and milk coolers.

Prior to ComplianceMate™, the school district personnel measured equipment temperatures via handheld thermometer or by reading the temperature indicator on the cold-holding unit itself. They then recorded the results into a paper log.

The ComplianceMate™ system (formerly known as Touchblock™) **completely replaced that manual process with automated monitoring**. Installation was essentially "plug and plug." They simply placed the wireless sensors in each cold-holding unit they wished to monitor and connected them to an associated internet gateway that had Wi-Fi and cellular connectivity capabilities. No new wiring or infrastructural accommodations were required.

Once installed, each ComplianceMate™ sensor began logging time and temperature data every five minutes, generating a record of 288 data points daily per sensor. The sensors would then securely relay the data via the nearby internet gateway to an online dashboard that could be accessed via phone, laptop, or desktop computer by authorized school personnel.

That dashboard gave the school system a complete, real-time view of all data from all equipment, with the added ability to drill down into any location or even any single piece of equipment. Figure 1 (next page) shows an example dataset in chart form of one piece of equipment.

The school district didn't have to wait long for the system to be stress-tested. Within a few days of installation, a major storm system with 60+ mph winds roared through, felling trees and power lines across the city and resulting in a power outage that affected over one million residents. Two of the schools in the pilot test lost power – leaving their cold-holding units off.

What *is* ComplianceMate™?

Today, most foodservice operations don't know about temperature issues until after the problems strike.

According to standard food safety guidelines, refrigerated product cannot exceed 41°F (5°C) for more than 4 hours before it has to be returned to an acceptable temperature range that will suppress the proliferation of food pathogens. Unfortunately, most schools simply have no way of knowing when or how long equipment has been operating at unsafe temperatures, especially after unforeseen events like storms, power outages, and equipment failures.

Even if temperatures are back to normal by the time they check, they have no way of knowing if power was lost for more than 4 hours during the event and only restored later – in which case the inventory may be both cold or frozen and *still* ruined.

ComplianceMate™ deploys wireless temperature sensors that live inside freezers, refrigerators, and wet boxes used to store food inventory. These sensors generate a continuous record of temperatures that authorized users can then access in real-time from any web-enabled device through a central dashboard. Altogether, the system provides actionable data while minimizing the inconsistencies that result from human error when collecting, recording, and storing temperature data, and enabling faster responses to potential food safety issues.

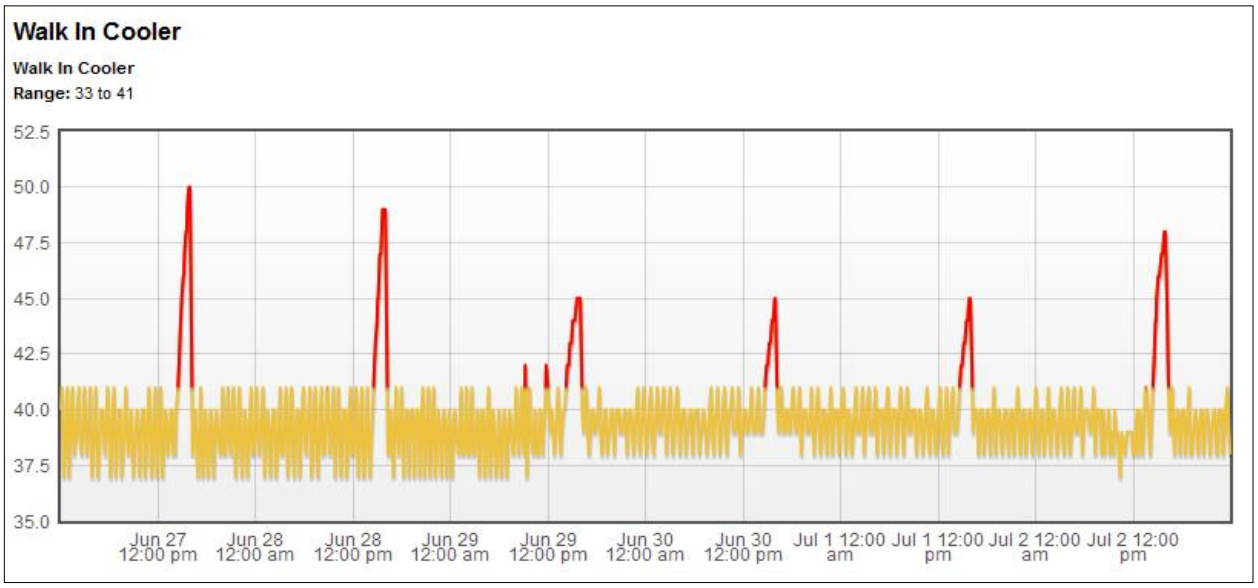

Figure 1. Normal operation of a walk-in cooler at Location A, targeting temperatures between 33° F and 41° F. The red lines, showing temperature exceptions, reflect normal short duration defrost cycles.

Complicating the situation, the storm was immediately followed by a high-pressure front and heat wave that left the area facing temperatures in excess of 100° F for several days.

Through ComplianceMate™, the school district officials were able to see that some foods had been held at temperatures as high as 78° F (see Figure 2, next page). As a result, they knew to discard that inventory due to potential contamination.

Elsewhere, they were able to demonstrate that cold-holding equipment temperatures had held within safe ranges below 40° F throughout the storm and its aftermath. Because officials were able to certify *that* inventory had never been exposed to unsafe temperatures, they did *not* have to discard those foods or beverages out of an abundance of caution, so the school system was able to save $3,200 in frozen breakfast and lunch foods and $270 in dairy products from unnecessary disposal.

All this in just 30 days, and the total estimated cost to the school district was less than about $2 per day over a multiyear contract period.

1. Data collection never stopped. Sensors at the location that retained power continued to relay temperature data as normal.
2. Even at the locations that lost power, the battery-powered sensors continued to collect time-stamped temperature data.
3. Those sensors' store of collected data was automatically uploaded online as soon as power was restored.
4. The sensors' continuous operation thus generated a complete record of equipment performance throughout the power outage.
5. Operators could then determine exactly how long temps exceeded the safe zone to determine which inventory remained safe.
6. Simultaneously, the system generated automated alerts anytime sensors reported temps exceeding pre-set thresholds.

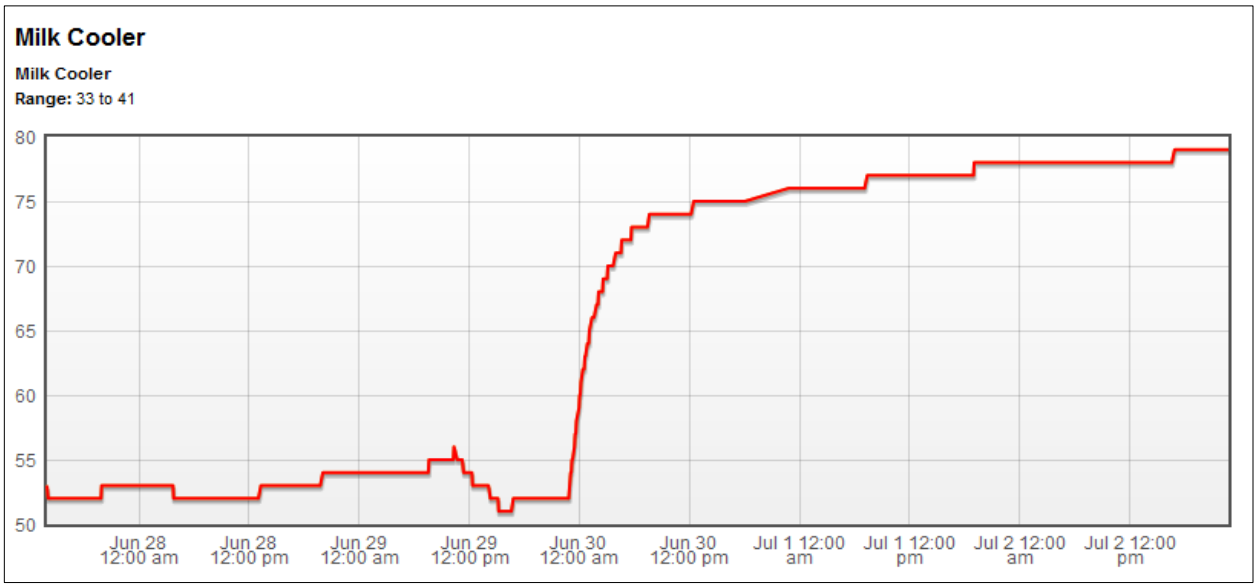

Figure 2. Location B reveals a massive outage that leaves food product at unsafe temperatures for an extended period.

Other Considerations

The Impact Report focused primarily on the temperature monitoring aspects of the ComplianceMate™ system and its effects over a 30-day period, but the system includes other components worth mentioning.

Automated Alerts

Though the automated alerts temperature alerts didn't feature heavily in the pilot test, these notifications have the potential to save both equipment and inventory. If equipment fails, the system will generate messages to designed personnel so they can take immediate action. That can prevent after-hours problems from turning into unpleasant surprises and financial losses the next morning. Over time, these kinds of savings can add up; one study found that for every $1 invested in reducing food loss and waste, organizations save $14.[i]

Reduced Labor Time & Cost

Because the automated temperature readings capture accurate temps without human intervention, the personnel who previously had to complete the task can be rededicated to other key priorities.

Reduced Facility Costs

ComplianceMate™ data can be used to better spot, identify, and triage potential problems with the cold-holding equipment itself. Equipped with more and better information, repair specialists can have a better understanding of issues and what's needed before they even arrive on site.

Smart Digital Checklists

ComplianceMate™ users often pair remote temperature monitoring with smart checklists that enable staff to work quickly through the variety of safety, quality, and operational checks they conduct daily. The checklist app can host any number of checklists, which can be customized nationwide, between regions, and down to individual sites. As with temperature monitoring, any anomalies or exceptions can automatically trigger alerts to multiple levels within the organization. Altogether, it adds incredible depth to any organization's food safety and operational reporting. As some school district staff told the Impact Report authors: "Food & Nutrition will love this system, because it is another way to keep an eye on the managers and to hold the employees accountable."

Building a Track Record of Excellence

It's no wonder that forward-looking school systems are turning to remote sensors and digital checklists. Digital food safety and quality technology offers these groups an opportunity to raise the standard to, and beyond, what other school systems are doing, in an environment in which labor costs as well as food costs are causing more and more pressure on annual budgets.

Much of the benefit comes down to eliminating uncertainty. Knowing exactly when, where, and for how long power has been lost or line checks have been completed, the organization can make better decisions about how to respond, how to allocate resources, and often how to prevent the problems in the first place.

In other words, with better information, schools can better triage problems and make more effective – and safer – use of its people and food product. In the end, ComplianceMate™ and remote temperature monitoring has the power to save money and labor, make operations easier, and reduce the risk of potential problems.

About ComplianceMate

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ComplianceMate™ provides the world's leading patented temperature sensor software system used to ensure regulatory compliance and operational efficiencies. The principal product offering has streamlined HACCP compliance checklists and cooler monitoring for all types of foodservice and related industries across multiple continents. With wireless temperature sensors and automated workflows, customers can view the certified data to make evidence-based decisions about operational processes. Organizations achieve improved audit scores and see a rapid ROI in just months.

References

[i] https://blog.revelsystems.com/blog/2017/05/19/the-true-cost-of-food-waste