

CASE STUDY

DAMERON HOSPITAL'S DATA-DRIVEN TEMPERATURE MONITORING STRATEGY

Backed by Rees Scientific

DAMERON HOSPITAL

Leanne Gonigan

CPhT, Pharmacy Technician
~ Dameron Hospital



INTRODUCTION AND INTENDED OUTCOME

Located in Stockton, California, Dameron Hospital is a fully accredited non-profit community hospital. With more than 200 beds, the hospital – which recently became part of Adventist Health – provides general acute, emergency, and intensive care services to the people of San Joaquin County. In addition to being a top-rated joint replacement center and the county's leading orthopedic hospital, Dameron is also a designated STEMI (heart attack) receiving center and certified stroke center.

Like all busy hospitals, Dameron's priority is ensuring patient safety and positive outcomes. That's why as a part of their commitment to quality care, administrators are always looking for ways to enhance their facilities and improve efficiency in all areas of the hospital. This includes the hospital pharmacy, where the staff is focused on protecting the efficacy of the temperature-sensitive medications and vaccines they dispense.

When Dameron decided to automate its temperature monitoring protocols to streamline processes several years ago – they turned to Rees Scientific for help.

THE CHALLENGE

Various regulatory bodies and accreditation agencies – such as the FDA, CDC, WHO, USP, and more – have requirements and guidelines for monitoring the temperatures of medication and vaccines. To comply, hospitals have long had processes in place to make sure temperatures inside refrigerators, storage areas, and operating rooms stay in range, explains CPhT, Pharmacy Technician Leanne Gonigan, who is responsible for pharmacy operations at Dameron.

"For many years, we monitored temperatures manually," she says. Couriers who delivered medication throughout the hospital were tasked with checking and recording

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ZIGBEE WIRELESS & WIFI TEMPERATURE MONITORING

Benefits At-a-Glance

- Fully GxP, FDA, CDC, and WHO compliant
- Instant alarm notification
- Automated daily printouts
- Ad hoc report
- Audit trails
- Data encryption

temperatures four times a day. This process became more and more time-consuming as the regulatory environment around storing and monitoring pharmaceuticals was evolving to be increasingly stringent. "If a regulatory body came in and wanted historical temperature monitoring information about a specific refrigerator or an OR, for example, I would have to look through the manual records to find the information they wanted," Leanne says. "It wasn't efficient for anyone — the regulators or me." The manual nature of the process also lacked consistency, which meant a higher risk of human error.

Then one day, nearly ten years ago, a refrigerator stopped working and the hospital lost thousands of dollars' worth of vaccines. That's when Dameron administrators knew they needed a more reliable, systematic process to monitor medication and vaccine temperatures hospital-wide. "We did two things then," says Leanne. "We increased the number of refrigerators throughout the hospital and clinics, and we implemented the Rees Monitoring System more broadly."

THE SOLUTION

Dameron opted to expand its use of the Zigbee Wireless and WiFi continuous monitoring solution, which monitors both refrigerated and ambient temperatures 24 hours a day, seven days a week, 365 days a year. The system, which can easily be configured to meet a hospital pharmacy's specific needs, provides instant notification of equipment failures and temperature excursions. This is combined with a robust Rees Software, which displays the status of each data logging device in use.

"The first thing I do when I come in every morning is bring up the Rees Board (software) on my computer," says Leanne. "That way, I know right away if there's anything I need to address." Dameron also has a Rees Board (software) up in the pharmacy itself that gives real-time readings on close to 200 inputs across refrigerators, operating rooms, medication rooms, and dispensing machines throughout the hospital, as well as remote storage facilities. "That means everyone in the pharmacy can see when there's an alarm," she adds. In addition to visual cues on the Rees Board (software), real-time text and email notifications are also sent to key personnel when there's an event — so even if they aren't in the pharmacy, they can still respond instantly.

REGULATORY COMPLIANCE

What Leanne says she appreciates most about the Rees Monitoring System is how simple it is to access data. "There's nothing more worrisome than having a governing body walk in and say they need reporting on this OR or that refrigerator and feel like I'm scrambling to pull it together." Now, she says she never feels that way because the Rees Monitoring System is always on and collecting data.

"I run daily reports on all vaccine refrigerators and keep these in binders for easy access," Leanne explains. That way, if any regulatory body were to come in, she has the most critical information on hand. However, if they ask for information she doesn't have at her fingertips — she can generate a report right on the spot. "It's just a little added peace of mind for me because I can always give regulators exactly what they want quickly."

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DATA-DRIVEN DECISIONS

Leanne says they’ve found the Rees Monitoring System is vital for Installation Qualification (IQ) and Operational Qualification (OQ) as well. “We need to be able to collect data to not only monitor the temperatures of medication and vaccines – but also to ensure our refrigerators are operating as they should be.”

Right now, for instance, she says Dameron is in the process of evaluating hospital equipment. “We’ve had to repair some of our refrigerators recently, and the plant operations and maintenance director is using the information we’ve compiled to analyze whether it is more cost-effective to replace refrigerators entirely or continue to maintain them.”

ONGOING SERVICE AND VALIDATION

All systems will require occasional maintenance. That’s when Leanne says the IT and support staff at Rees really provide a value-based service. “Our service manager is very responsive. If I call, he calls me right back and walks me through solutions, so that if it’s possible – I can resolve issues on my own.” If not, Rees’ unique regional service model ensures sales and engineers can be on-site quickly.

Rees also conducts an annual validation of the system. The objective behind this is to ensure the Rees Monitoring System is operating at an optimum level. As a result of the 2021 validation, for instance, Dameron upgraded to Z3 wireless, which is designed to provide even greater security and flexibility.



TEMPERATURE



DIFFERENTIAL PRESSURE



HUMIDITY



PARTICLE COUNTS

COMPLIANT VACCINE MONITORING SOLUTIONS



Monitor temperature of any cold storage (refrigerators, freezers, ultra-low freezers) from +1300 to -196 °C



Continuous, real time monitoring rate exceeds requirements of CDC



Regional Sales and Service teams for superior support



Receive alarm notification via interactive phone, texts and e-mail



Meet compliance for FDA, WHO, USP <797>, USP <800>, VFC, GxP & more



Exceeds data logger capabilities



Local audio and visual (LED) alarm available



View sensor min/max conditions with the LCD display module



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