



## CASE STUDY

# HOW STANDARDIZATION LED TO CONSISTENCY, VISIBILITY, AND LESS RISK

Improving your cold storage through standardization



*“Since switching, we have not experienced temperature excursions, and the units maintain their setpoint.”*

## THE FACILITY

The hospital facility is the flagship location of a widely-recognized integrated, not-for-profit healthcare system. This location boasts yearly net patient revenues of over \$2B and over 38,000 annual discharges.

As the main campus of a leading health system in medical research and patient care, the organization’s core values of innovation, excellence both for patients and staff, and stewardship of resources demanded this problem be addressed. Every temperature excursion was an opportunity for a drug to lose safety or viability, causing danger to patients and financial loss to the hospital.

## INTENDED OUTCOME

With over 1,000 staffed beds and several outpatient facilities to support, the pharmacy manager at this nationally-recognized research hospital was looking to streamline oversight of the eighty-five pieces of cold storage equipment responsible for storing and distributing life-saving vaccines and medications across her facility.

Her existing cold storage fleet included a collection of mismatched units from various vendors that required a staggering 1,000 manual log recordings per week. Recognizing the value of consistent monitoring and the immense burden of weekly manual temperature logs, the pharmacy director installed a remote-monitoring system to track cold storage performance in real time.

Not long after the installation of the new monitoring equipment, performance issues began to surface in the cold storage fleet. The facility was experiencing temperature excursions in some of their refrigerators multiple times per day. The pharmacy team spent weeks “chasing their tails” adjusting and readjusting units that had fallen out of acceptable temperature range.

*“These units are reliable and consistent, which is a huge relief for me and my team, as the previous units were a big point of stress and difficult to manage.”*

## THE CHALLENGES OF TEMPERATURE CONTROL

The problem of temperature-controlled transportation and storage is not new in the medical industry, however in recent years, particularly with the advent of biologic medications, the medical cold chain has become a critical and central component in the healthcare industry with manufacturers and health systems spending millions of dollars each year to produce, transport, and store temperature sensitive medications, vaccines, and other necessary patient care material.

Improper temperature storage can have potentially dangerous health risks to patients. Improper storage can reduce the effectiveness of vaccines, medications, and diagnostic tools. Exposure to improper storage can render some vaccines inert and can lead to a false sense of security with patients believing that they are protected from certain ailments, when they are not. Improper storage can also reduce the potency of medications, resulting in poor patient outcomes, and reagents and samples stored at improper temperatures can create testing inaccuracies that can lead to misdiagnosis.

Surprisingly, until recently, regulations on refrigerators for use in healthcare settings were relatively lax. Many patient care settings relied on food-grade refrigerators to store medications. However, recognizing the potential risk to patients, the CDC released the Vaccine Handling Toolkit with recommendations that vaccines be stored in purpose-built units both to protect temperature sensitive materials and to reduce the burden on staff for manual monitoring and adjustment.

## THE SOLUTION

Constant monitoring and adjustment of eighty-five refrigerators and freezers, many of which were non-medical-grade units, spread across the central pharmacy and throughout the nursing floors was an unsustainable arrangement for this respected hospital.

Every minute spent outside of proper storage temperature, hospital resources and patient health were at risk, and the overloaded staff struggled to keep up with the necessary adjustments each time a unit fell out of the acceptable temperature range.

It was clear that standardizing to medical-grade cold-storage would be imperative for this health system to maintain their commitment to delivering the best outcomes for patients and the best experiences for staff.

## THE BENEFITS

While standardization required significant upfront investment, the benefits were clear.

- Reduced clinical staff-hours spent adjusting out-of-range units
- Reduced biomedical staff-hours spent repairing low-quality units
- Reduced risk of material and reputation loss to the hospital
- Reduced health risk to the patient

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*“Having the peace of mind is priceless.”*

Given these benefits, the pharmacy manager decided to swap out all eighty-five of her cold storage units in favor of medical-grade, NSF/ANSI 456 certified GX Solutions cold storage units from Helmer Scientific.

After replacing her eighty-five mismatched units with GX solutions refrigerators, the pharmacy manager had this to say:

“Since switching, we have not experienced temperature excursions, and the units maintain their setpoint. They are reliable and consistent, which is a huge relief for me and my team, as the previous units were a big point of stress and difficult to manage.”

In addition to peace of mind and reduced staff burden, the hospital has experienced several unexpected benefits from standardizing.

- Reduction in noise output – At roughly the noise output of a quiet library, Helmer GX solutions reduce distractions and improve experience on patient floors.
- Efficiency from standardization – Staff need only learn the systems once and can successfully operate any cold storage unit in the hospital.
- Reduced down-time – As a bulwark for reliability in the medical-grade refrigeration industry, Helmer’s GX Solutions are designed and tested to perform under extreme conditions, providing performance and reliability for the long-term.
- Repair and maintenance efficiencies – Since all eighty-five units are Helmer units, the biomedical staff requires technical knowledge for fewer units, allowing for easier and faster repairs, more efficient preventative maintenance, and the ability to carry replacement parts on-hand.

When asked about the investment to standardize to Helmer GX Solutions cold storage units, the pharmacy manager replied, “Switching to Helmer refrigerators has been a night and day difference.”

The standardization process was so successful that the health system has now added Helmer cold storage units as a standard part of the blueprint for any facility expansion or renovation.

## CONCLUSION

Medical-grade cold storage is imperative for hospitals and health systems that value patient outcomes. Trends in diagnostics and medicine demand higher volume and higher levels of precision for temperature sensitive materials.

The increased demand for cold storage will add operational complexity for both clinical staff and biomedical teams. Investing in reliable cold storage across the care setting can reduce complexity by creating uniform processes for staff operators, reducing technical knowledge burden on biomedical teams, streamlining parts ordering and, as the pharmacy manager put it, “having the peace of mind is priceless”.



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risk for sensitive pharmaceuticals,  
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