

CASE STUDY

Refrigerator Eliminates Medication Waste, Saves Clinical Staff Time



Dave Bowers
Lead Biomed Technician
~ Lehigh Valley Physicians
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PRIMARY INTENDED OUTCOME(S)

Our goal was to prevent refrigeration failures and inefficiencies that potentially result in decreased productivity, troubleshooting costs, product waste, and suboptimal medication effectiveness, which compromise patient safety.

THE CHALLENGE

Mechanical failures and uneven cooling of medical refrigerators — a major pain point for staff at Lehigh Valley Physicians Group (LVPG) — increased product waste, revenue losses, labor, and down-production while delaying patient contact.

“The refrigeration units we were using were malfunctioning on us. We had many issues with the refrigeration and the way they delivered cold air inside the unit,” said Dave Bowers, Lead Biomed Technician at LVPG, who services all the equipment in the nurse-supported physicians’ offices within the network.

With more than 140 practices and 47 specialties serving eastern Pennsylvania’s Bethlehem-Allentown-Easton metroplex, LVPG, a subsidiary of Lehigh Valley Health Network (LVHN), needed to find a reliable solution — and fast.

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THE DECISION

A stable temperature is critical to maintaining product efficacy when storing high-dollar biologics and other medical products that require refrigeration.

However, certain variables can threaten temperature uniformity and product stability — one of the most crucial being the delivery of cold air into a concentrated area. Uneven or inconsistent air distribution decreases the potential for temperature homogeneity throughout refrigeration unit's internal casing. Such fluctuations in air flow increase the likelihood for out-of-range readings, which could jeopardize product effectiveness — regardless of their shelf level.

Temperature instability always demands immediate attention. A temperature excursion often pulls clinical staff away from patient care in order to follow specific protocols necessary to ensure product quality and efficacy. As a result, refrigerator failures prove as critical as inconsistent temperatures.

In the instance of an out-of-temperature reading, mechanical malfunction, or process failure, the integrity and potency of vaccines and other biologics could be compromised.

"Either way, your vaccine could be weak. You might have to discard everything in your refrigerator," explains Julie Kaszuba, RN, Clinical Procedure and Products Nurse.

The cabinets in LVPG's existing refrigerators employed top-mounted hanging evaporators inside the storage cabinet, which concentrated cold air at the top. Bowers and his biomedical team explored a variety of options capable of sustaining cold chain specification requirements. However, each option utilized a similar hanging evaporator air distribution system. Fearing similar mechanics might create all-too-familiar challenges with temperature instability, they continued their search for a solution.

Bowers and Kaszuba were then introduced to Follett's medical grade upright refrigerators. They found these refrigerators to offer several unique features that best addressed LVPG's needs including:

- Back-plenum air distribution — an industry-exclusive feature
- Convenient installation
- Similar floor space
- Comparable pricing (within \$200)
- A multi-device compatible alarm
- Client product customization

For Bowers and Kaszuba, their customer experience with Follett — which included product demos and the company's reception to consumer feedback — also helped to seal their decision.

Kaszuba found Follett's receptivity helpful in finalizing the team's product selection. "They are very customer-oriented and very open to feedback: 'What did you like about the product?' 'What could you improve in time?' They listen to recommendations to make the product better."

So receptive are the manufacturers to feedback, in fact, that Follett will be implementing one of Bowers' suggestions to offer larger units bearing the same controls as the manufacturer's smaller, under-the-counter refrigerators to make the units more user-friendly for smaller practices.

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THE RESULTS

Bowers noticed an immediate difference in temperature stability after the Follett units were installed. The medications remained within temperature regardless of shelf level. Follett’s unique back-plenum air distribution circulated air more evenly to multiple levels within the cabinet, providing temperature uniformity that ensured product efficacy.

An additional feature Bowers’ team found useful is Follett’s compatibility with third party external alarm systems that send alerts to the user’s email or phone. The simple installation process proved to be another major time and money-saver.

The benefit is two- fold: “Nurses don’t have to spend time worrying about having to check failures or checking to see whether the product is stored properly,” Bowers noted.

“The modular refrigeration unit can be unbolted, swapped, and unplugged within an hour by a mechanical person, but it doesn’t have to be a refrigeration specialist,” Bowers pointed out. He also noted that the unit installation does not require a refrigeration specialist, which makes the setup process more user-friendly.

Bowers summarized the results, stating, “Now we have few breakdowns, less product waste. In fact, we haven’t had any breakdowns with the new Follett units since we’ve been using them over the last two years. It saves nurses and other clinical staff time.”

THE CONCLUSION

Having a product that supports best practice plays a significant role in providing quality care. Follett’s industry-exclusive back-plenum air distribution helps ensure temperature stability and medication efficacy while the external alarm system gives users additional assurance that the cold chain remains in spec. As a result, the reliability of Follett’s medical grade upright refrigerators helps improve patient care while elevating the user’s experience.

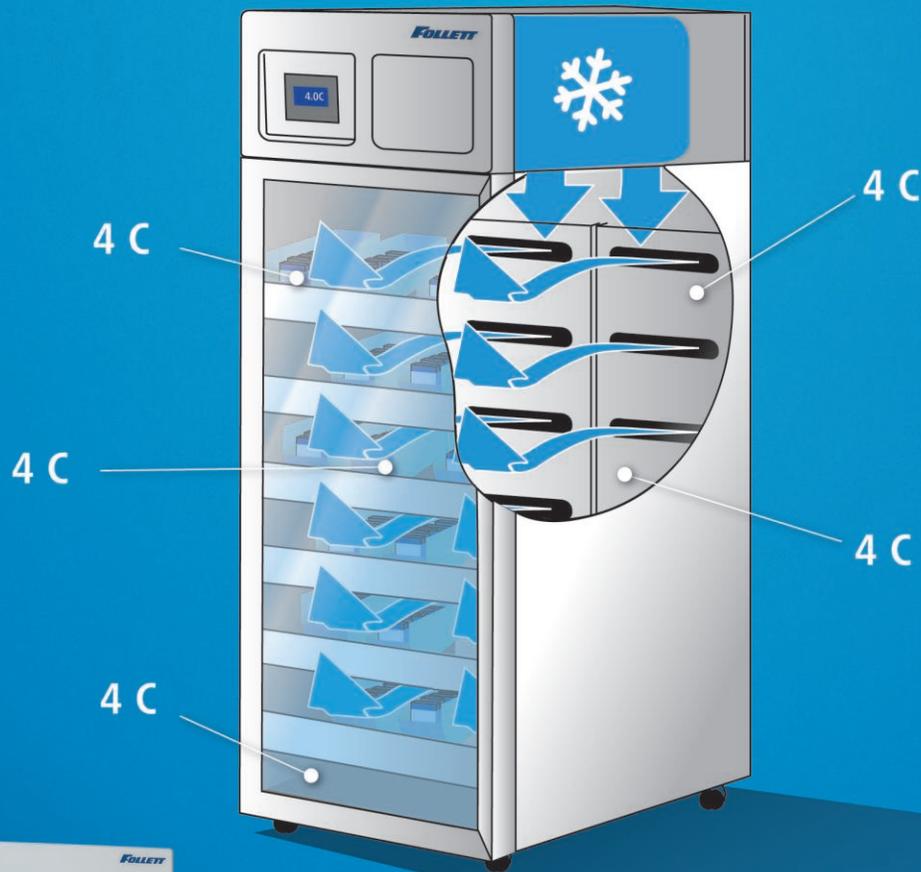
For a seamless roll-out, Bowers aims to make sure LVPG incorporates renovations and upgrades planning for floor space to accommodate Follett’s slightly larger refrigerator. Although no exact timeline has been established, Bowers eventually plans to replace all older refrigerator models with Follett units throughout the LVPG system.

“Any time we add a new practice or renovate a practice, if they don’t have it, we make sure it gets put in as part of the budget,” Bowers stressed. “Also, the external alarm system allows us to monitor the temperature closely and make recommendations to management to swap out systems sooner. If we see a pattern of out-of-range temperatures, we try to get the old units changed out to Follett.”

“Generally speaking, any time that there is not waste, there is a win. Any time waste is avoided, it’s speaking to a level of quality and following a best practice,” Bowers concluded.

Kaszuba echoed Bowers’ sentiments on quality, stating, “I think clinically, it’s about safety, so your medications are only as good as maintaining the efficacy of your products.”

Temperature consistency on every level



Ever see shelves loaded heavily or unevenly?
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and freezers could leave areas out-of-temperature.

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with Follett's patented dual-duct air delivery system,
which distributes air evenly at every level to keep
the entire cabinet in-temperature.

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