

CASE STUDY

Follett Upright Medical-Grade Refrigerators



Oklahoma State University
Medical Center

Cabinet-wide temperature consistency is a game-changer for critical pharmaceutical cold storage needs.



**John Bury, Pharm.D.,
BCPS, MBA**
Director of Pharmacy
Residency Program Director
~ Oklahoma State University
Medical Center

*“Another big benefit:
Even when you
are using the units
continuously and
going in and out,
they are able to get
back to temperature
right away.”*

John Bury, Pharm.D.
Director of Pharmacy
~ OSUMC

PRIMARY INTENDED OUTCOME(S)

Extreme temperatures and temperature changes can have negative effects on pharmaceutical products that range from reduced efficacy to toxicity, rendering the drugs unusable. Of particular concern to hospital pharmacy managers is the degradation of high-cost chemotherapeutics, biologics, and factor products.

Pharmacy managers have long relied on refrigerators to safely store temperature-sensitive medications. But even dedicated refrigeration units require vigilant monitoring, since swings in temperature can result from opening a door too frequently or for too long, and because different shelves in a particular unit may vary in degrees.

To answer the need for stable, reliable, and uniform temperature control, Follett, a leader in medical-grade refrigeration, has developed high-performance, plenum-cooled upright units designed specifically for pharmacy use.

THE CHALLENGE

Oklahoma State University Medical Center (OSUMC) is a 195-bed teaching hospital located in downtown Tulsa. When John Bury, Pharm.D., stepped into the OSUMC Director of Pharmacy role in 2014, the refrigeration equipment he inherited was functional, but clearly older.

“The units had been there probably 25 years or more. They were solid, but then one gave out,” Bury recalled. “I knew we could manage being down one refrigerator, but if we were to lose another – well, you’re talking about a lot of high-dollar items subject to loss.”

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VACCINES FOR CHILDREN (VFC)

In 2009, the Centers for Disease Control and Prevention (CDC) issued vaccine storage requirements to ensure that the low- or no-cost vaccines provided through the federally funded Vaccines for Children (VFC) program are properly managed and stored. In 2012, the CDC issued additional guidance regarding all vaccine handling and storage. The Oklahoma State University Medical Center is proud to be a VFC provider. Follett helps them easily comply with the requirements.

“One of the reasons we chose the medical-grade units is our involvement in VFC,” said pharmacy director John Bury. “They have certain requirements for storage including continuous temperature monitoring.” Follett refrigerators meet and exceed the CDC’s stipulations for participation in the program, including the use of:

- Stand-alone, dedicated vaccine-only refrigerators and freezers
- Temperature measurement with an accuracy of ± 1 °F (± 0.5 °C)
- Option for a detachable ISO 17025 calibrated product temperature probe with certificate of calibration testing

Constant internal monitoring records can be downloaded, and detailed data logs are automatically compiled for easy reference by date and time, making compliance with any regulatory standards a zero-effort endeavor.

THE DECISION

Bury thoroughly researched the available options on the market – as well as the practical matter of upkeep. “Early on, when we were doing the analysis, I talked to our maintenance group. They would be the ones servicing the units,” he said, “and Follett came up very high on their list.”

Other departments in the hospital had previously adopted Follett refrigerators. The OSUMC maintenance team, familiar with the brand, cited the ease of working on the units and their known longevity. A key feature that set Follett apart from a maintenance standpoint is the ability to remove the entire top-mounted refrigeration module for routine service or repair. This design allows a replacement module to be easily installed if needed, essentially eliminating unit downtime.

THE RESULTS

Beyond the maintenance and reliability pluses, choosing Follett resulted in notable upgrades to features that benefit the pharmacy every day.

Perhaps the most powerful advantage of the Follett units is their superior ability to maintain consistent and precise temperature control. “One of the things you notice looking at the older logs with staff tracking temperatures two times a day, is that you can see fluctuations,” Bury said. “With the Follett products, there is very little fluctuation.”

Temperature recovery is another strong advantage, particularly for a busy pharmacy department. “On the old units, you would grab your items and the unit would start to alarm because of temperature drop, and it would only slowly recover,” Bury said. “If I’m in the fridge now, and I’m batching, I don’t worry as much about temperature fluctuations as I know the unit is quick to recover.”

This caliber of temperature consistency and recovery doesn’t happen by accident. Follett upright refrigerators and freezers feature the industry’s most advanced airflow design, utilizing unique plenums that deliver cold air directly to each storage level. Multiple pathways for cool air ensure consistent temperature throughout the unit, regardless of loaded shelves, drawers, and large or odd-sized packaging.

Follett’s unique design places the cooling system external to the cabinet. Cooled air is distributed simultaneously to multiple levels and locations throughout the unit, as opposed to being pumped in via one primary entry point and reliance on dissipation. This comprehensive delivery of cool air to every point within the unit removes any concerns about temperature consistency, leaving more focus for other tasks.

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THE PLENUM AIRFLOW DIFFERENCE

Cold-air pathways located throughout Follett refrigerators deliver superior temperature performance by:

- Eliminating the need to carefully load product to protect air circulation
- Increasing true storage by eliminating hanging evaporator designs
- Holding ± 1 C (± 1.8 F) temperature at all levels in the cabinet

“Now, the temperature that the unit is set for is the temperature throughout the cabinet. I’m able to trust my equipment.”

John Bury, Pharm.D.
Director of Pharmacy
~ OSUMC

“The temperature that [the Follett unit] says it is, is the temperature throughout the whole machine,” Bury said. “This offers peace of mind more than anything. When [a refrigeration unit] is working like it should, it just makes your life so much easier. When you have a system that doesn’t work, you have to spend a lot of time trying to mitigate fluctuations.”

Other Follett features include modern technological functionality. Intuitive, full-color, 7-inch touchscreens allow users easy access to programmable tools and settings, such as temperature alarming. Some Follett units also offer WiFi connectivity, which allows for easy remote monitoring. The 24/7 visibility of temperature excursions gives pharmacy managers the ability to make any necessary corrections before sensitive inventory is affected.

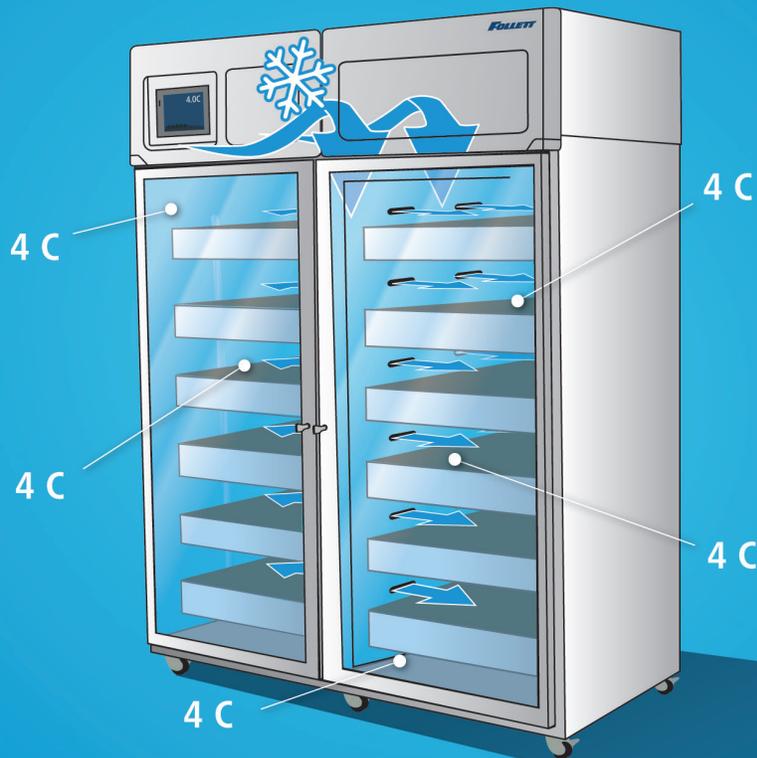
THE CONCLUSION

OSUMC ended up replacing all of their pharmacy-dedicated refrigerators, including three upright 25-cubic-foot units and 19 smaller units. “All of the units that store medications in our hospital are now medical-grade,” Bury said, “and, specifically, they are all Follett units.”

New practice and quality standards for handling hazardous drugs in healthcare settings, known as USP 800, are slated for official implementation on December 1, 2019. These standards require dedicated storage for hazardous medications in order to promote patient safety, worker safety, and environmental protection. “We don’t do a ton of chemo, but enough to need a stock on hand,” Bury said. OSUMC now has a 5-cubic-foot undercounter Follett unit on site, already addressing the new requirement for secure, separate storage.

The medical center is also participating in beta testing of Follett’s newest double-door refrigerators. The double-door units are larger, providing more flexibility for storing expanded inventory without sacrificing efficiency. The plenum airflow feature is just as reliable in the larger units. “Even though the double-door unit is bigger, it’s still excellent at maintaining consistent temperatures,” Bury said.

Temperature consistency on every level



New
Double door models
follettice.com/double



Ever see shelves loaded heavily or unevenly? Blocked airflow in other manufacturers' refrigerators and freezers could leave areas out-of-temperature.

Protect your valuable temperature-critical items with Follett's industry-exclusive plenum air delivery system, which distributes air evenly at every level to keep the entire cabinet in-temperature.

FOLLETT[®]

See our full line at follettice.com/upright
or call 800.523.9361 for more information