

RECOGNIZING LEADERSHIP IN PHARMACY SUSTAINABILITY

Humber River Health - Pharmacy Green Sustainability and Inventory Team



**Humber River
Health**

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Team members

- Shreena Amin – Former Drug Utilization Evaluation (DUE) Pharmacist and Pharmacy Services' Green Sustainability Leader
- Sharold Maharaj – Senior Technician and Inventory Technician, Green Team Member
- Andrew Messiha – Pharmacy Manager, Green Team Member
- Mojgan Khosravi – ICU pharmacist, Green Team Member
- Margaret Chan – Clinical Pharmacist, Green Team Member
- Nair Cardozo – Former Automation Supervisor, Green Team Member
- Albert Karas – Former Director of Pharmacy Services, Green Team Member
- Kayla Denis – Former Inventory Technician, Green Team Member
- Tania Fonseca – Inventory Technician
- Diana Oliveira – Automated Dispensing Unit (Omniceil) Administrator and Crash Cart Lead Technician
- Raneen Bahnam – Automated Dispensing Unit (Omniceil) Administrator
- Maryam Masroor – IV compounding Supervisor
- Annie Xiao and Saptha Navaratnam – Informatics Pharmacist
- Annie Chuang – Inventory Technician
- Anna Piro – Swisslog Automation Administrator and Crash Cart Lead Technician
- Kadaajah Johnson – Louis and Victoria Fung – Antimicrobial Stewardship Pharmacists, Green Team Members
- Apoorva Kelkar – Program Director, Pharmacy Services

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WHY

At Humber River Health (HRH), reducing medication waste and improving inventory management have been key initiatives aimed at enhancing operational efficiency and minimizing the department's carbon footprint.

HOW

Monitoring and Auditing: HRH conducts monthly tracking of wasted or expired medications, including intravenous compounds, non-formulary items, over-ordered drugs, and medications procured to address shortages. Formulary reviews are essential to sustainability. Additionally, we identify underutilized medications by leveraging data from automated dispensing units (ADUs) and data from tagged drugs with Radio Frequency Identification (RFID) in drug trays such as anesthetic kits.

Collaborators and Champions: The Analytics and Business Insight team supplies data on wasted and expired stock. Clinicians help assess medication utilization and workflow to identify opportunities for improvement.

Identifying the Root Cause: Audits identify controllable and uncontrollable factors of waste. Controllable factors include prescribing patterns, medication preparation methods (batch or patient-specific), and ordering processes. Uncontrollable factors, such as packaging sizes or market-driven changes, can lead to overordering, requiring better inventory management practices.

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Streamlining and Standardizing: Following audits, we focus on interventions that eliminate inefficiencies by reducing ordering quantities, adjusting restocking triggers, using appropriate pack sizes, and modifying stock amounts. These efforts reduce delivery frequency and minimize product packaging waste, further reducing the carbon footprint. Pharmacy automation is updated with post-audits to ensure sustained improvements.

Collaborators and Champions: Inventory team, Informatics teams and healthcare vendors, such as manufacturers, assist in these efforts.

WHAT

Some successful initiatives include:

- **Crash Cart Day:** Technicians proactively remove medications approaching expiration, four months in advance, and reallocate them to high-use areas. In January 2024, 568 drugs were reallocated, resulting in a savings of \$7,700
- **ADU Yearly Review:** Floor pharmacists annually review stock levels (minimum and maximum) in ADUs to streamline and reduce waste.
- **Monthly Wastage/Expiry Meetings:** Regular audits allow for continuous monitoring of usage and wastage. Stock levels are adjusted to avoid duplicate inventory ordering and receiving, which reduces machine energy consumption and transportation-related emissions. As a result, HRH saw a 41% reduction in the dollar value of wasted or expired medications from the first half of 2024 to the second half, translating to \$35,000 in savings.

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NOW

Retrospective audits were insightful for inventory stewardship. In 2025-2026, we plan to:

1. Shift to prospective models.
2. Make pharmacist-led formulary reviews more comprehensive, focusing not only on what medications are stocked but also how they are utilized, including evaluating wasted stock and orderset reviews. This approach will include proactive strategies, similar to the Crash Cart Day, to anticipate expiries months ahead and flag issues for follow-up by pharmacists
3. Incorporate automation into our inventory management practices
4. This eliminates the need for manual counting, tracking, waste, and auditing of medications.

Integrating green initiatives into existing processes and quality improvement programs can enhance both environmental sustainability and operational excellence. A multi-faceted approach encompassing cost reduction, workload optimization, improved practices and streamlined formularies, ensures sustainable operations while maintaining the highest standards of patient care.