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ISMP Canada Safety Bulletin

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Innovative Medication Safety Improvements in Ontario Long-Term Care Homes

The *Strengthening Medication Safety in Long-Term Care* initiative, funded by the Ontario Ministry of Long-Term Care,* was established in partnership with ISMP Canada to address the medication safety-related recommendations in Justice Gillese's Long-Term Care Homes Public Inquiry Report.[1] Specifically, the 3-year initiative is designed to improve medication management processes, including those intended to deter and detect intentional and unintentional harm in long-term care (LTC) homes across the province of Ontario. This bulletin provides an overview of the initiative and highlights selected examples of improvement projects completed in the first phase.

OVERVIEW

The complexity and risk inherent in the management of medications for LTC residents has increased over the years as residents are now more physically frail and are often in the later stages of cognitive and physical impairment.[2,3] To ensure that the *Strengthening Medication Safety in Long-Term Care* initiative would be effective, relevant, and inclusive, a provincial advisory committee, with representation from LTC residents/families, the Ministry of Long-Term Care, LTC-related associations and councils, pharmacy service providers, and care leaders from individual LTC homes, was established to provide feedback and recommendations to ISMP Canada.

In the first phase of this initiative, in addition to offering a variety of educational resources to the whole Ontario LTC sector, ISMP Canada worked closely with 10 LTC homes, identified as Champion Homes (Box 1). The Champion Homes were selected from homes that volunteered to participate, and reflect diverse resident needs, geographic locations, sizes, and ownership models. ISMP Canada Faculty supported each Champion Home by providing mentoring and education in 5 key areas of medication safety (Figure 1):[4] tools and support, resident and family engagement, quality improvement, incident analysis, and measuring and evaluating.

Box 1. Champion Homes
(listed alphabetically, with location)

Bendale Acres (Scarborough)
Cedarvale Terrace (Toronto)
Extendicare York (Sudbury)
Fairview Lodge (Whitby)
Iroquois Lodge (Ohsweken)
peopleCare Hilltop Manor (Cambridge)
St. Patrick's Home of Ottawa (Ottawa)
Southbridge Pinewood (Thunder Bay)
Upper Canada Lodge (Niagara-on-the-Lake)
Woodingford Lodge (Ingersoll)

Strengthening Med Safety in Long-Term Care

* Funding provided by the Ministry of Long-Term Care in Ontario is gratefully acknowledged. The views expressed in the publication are the views of ISMP Canada and do not necessarily reflect those of the Province.

Figure 1. Five key areas of medication safety with targeted coaching, education, and tools in the *Strengthening Medication Safety in Long-Term Care* initiative.

TOOLS AND SUPPORT

A key tool offered through the initiative was an updated version of ISMP Canada's Medication Safety Self-Assessment for Long-Term Care (MSSA-LTC),[5] which was informed by a literature review and synthesis conducted by the Canadian Agency for Drugs and Technologies in Health (CADTH). The MSSA-LTC, Canadian Version III was completed by all Ontario LTC homes in the first year of the initiative to evaluate the safety of their respective medication systems and to establish a baseline against which to compare future results. Use of this tool enabled individual LTC homes to evaluate and prioritize their potential safety vulnerabilities and opportunities for improvement. The MSSA-LTC findings were supplemented by pilot testing of medication safety indicators. Candidate indicators related to long-term care practices were selected through a literature search augmented by expert opinion and tested by the Champion Homes. The metrics were intended to help LTC homes monitor the safety of their medication processes and to identify areas for improvement.

After reviewing their MSSA-LTC results, **Fairview Lodge** identified an opportunity to improve their management of emergency medications by upgrading their emergency medication lockbox to an automated dispensing cabinet (ADC). The ADC is designed to provide a safer and more reliable mechanism for the storage, distribution, and documentation of medications for emergency use. To reduce the risk of incorrect product selection, all medications in the ADC, including narcotics and other controlled substances, are stored separately in individual unit-dose packages within the cabinet. Following implementation of the ADC, the team at Fairview Lodge (Figure 2) found that staff members were able to access urgently needed medications more efficiently, with a new process that required 4 fewer steps and less time (as determined by pre- and post-intervention measurements). It was also determined that this initiative resulted in improved safety related to selection of emergency medications. Learning from Fairview Lodge was incorporated into a model policy for ADC use that was developed by ISMP Canada Faculty.[6]

Figure 2. Fairview Lodge Team with their new automated dispensing cabinet.

RESIDENT AND FAMILY ENGAGEMENT

Residents and families are key partners in medication management and safety. Their health goals and perspectives about medication safety must be considered when care providers are making decisions that affect the medication-use process. Throughout the initiative, residents and family members from the participating Champion Homes took part in discussions to share their perspectives and provide feedback. As a result, the homes were able to identify gaps, inefficiencies, and areas for improvement.

Following implementation of a resident/family engagement survey, **peopleCare Hilltop Manor** (Figure 3) determined that residents/families were not typically proactively involved in discussions about medications and often did not receive adequate follow-up after medication changes. They implemented practice changes, including nurses following up with the resident/family within one week of any medication change to assess the impact and to monitor for adverse effects. To enhance resident and family engagement, their team dedicated a section of their monthly newsletter to topics related to medication safety. Through this monthly column, residents and families gained a better understanding of medication safety projects in the home. A pre- and post-survey to residents/families indicated that respondents felt that their understanding of the medication-use processes had increased, and they were more confident discussing medications with nurses. The home plans to repeat the survey periodically and will use the results to develop strategies for greater resident involvement.

Figure 3. Working group for resident engagement at peopleCare Hilltop Manor.

QUALITY IMPROVEMENT

Upper Canada Lodge undertook a project that applied the 5S method of quality improvement in their medication room to achieve better workplace organization (Figure 4). The 5S approach involves a sequence of activities to **s**ort, **s**et in order, **s**hine, **s**tandardize, and **s**ustain improvements in the work environment. This systematic approach can be used to organize the environment and remove unneeded supplies by designating a specific, marked location for each item. This makes it simpler for staff to locate what is needed and to safely complete tasks during the medication administration process. The nursing staff at Upper Canada Lodge responded positively to the improved organization of the cabinet, indicating that it allowed for more timely administration during medication passes.

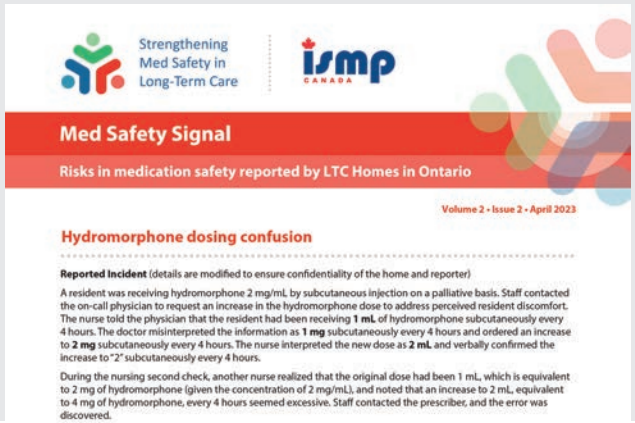
Figure 4. Organization of the cabinet in medication room at Upper Canada Lodge before (left) and after (right) application of the 5S approach.

INCIDENT REPORTING AND ANALYSIS

Representatives from all Champion Homes participated in live online interactive workshops facilitated by ISMP Canada Faculty. One of the workshops engaged participants in learning about developing a Just Culture, conducting an incident analysis, and applying the methodology outlined in the Canadian Incident Analysis Framework.[7] Participants also learned about the importance of reporting incidents to the Canadian Institute for Health Information's (CIHI's) National System for Incident Reporting (NSIR)[8] or to ISMP Canada's Practitioner and Consumer reporting programs, which are all components of the Canadian Medication Incident Reporting and Prevention System (CMIRPS).[9]

Woodingford Lodge identified a need to improve their paper-based medication incident reporting system. The team at Woodingford Lodge mapped their process to identify challenges in the manual reporting process. Examples of these challenges included reliance on paper forms, lack of understanding of the incident reporting process, and lack of a standard location to store documents. Through this work, the home was able to develop a business case to support the purchase and implementation of an electronic incident reporting and analysis system. Use of the new system has yielded several benefits, including centralized data collection, reduced time to report and review incidents with staff, and access to an increased number of actionable learning points for continuous quality improvement.

St. Patrick's Home of Ottawa also identified an opportunity to improve their medication incident reporting and learning processes. One of the changes implemented was the introduction of NSIR for online completion and tracking of medication incidents. Through the use of NSIR, their deidentified medication incidents are now submitted to CMIRPS and available for analysis by ISMP Canada and for shared learning with the LTC sector. Such reported incidents contribute to the shared learning in the Med Safety Signal for LTC (Figure 5), launched by ISMP Canada in collaboration with the Champion Homes as part of this initiative.[10]


Strengthening Med Safety in Long-Term Care

ismp CANADA

Med Safety Signal

Risks in medication safety reported by LTC Homes in Ontario

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Hydromorphone dosing confusion

Reported Incident (details are modified to ensure confidentiality of the home and reporter)

A resident was receiving hydromorphone 2 mg/mL by subcutaneous injection on a palliative basis. Staff contacted the on-call physician to request an increase in the hydromorphone dose to address perceived resident discomfort. The nurse told the physician that the resident had been receiving **1 mL** of hydromorphone subcutaneously every 4 hours. The doctor misinterpreted the information as **1 mg** subcutaneously every 4 hours and ordered an increase to **2 mg** subcutaneously every 4 hours. The nurse interpreted the new dose as **2 mL** and verbally confirmed the increase to "2" subcutaneously every 4 hours.

During the nursing second check, another nurse realized that the original dose had been 1 mL, which is equivalent to 2 mg of hydromorphone (given the concentration of 2 mg/mL), and noted that an increase to 2 mL, equivalent to 4 mg of hydromorphone, every 4 hours seemed excessive. Staff contacted the prescriber, and the error was discovered.

Figure 5. The April 2023 Med Safety Signal for LTC regarding HYDROmorphone dosing confusion.

MEASURING AND EVALUATING

Throughout the initiative, the Champion Homes engaged in projects to evaluate their medication-use processes and to assess opportunities for improvement through relevant metrics. **Cedarvale Terrace** recognized that standardizing the medication carts throughout their facility could reduce the time spent completing the morning medication pass. The team at Cedarvale Terrace developed an agreed-upon standard for the organization of all medication carts (Figure 6). This standard enabled nurses working on any unit to

Figure 6. Standardized organization of medications in carts at Cedarvale Terrace (with resident names concealed).

find needed medications in any drug cart in a timely manner, while reducing the risk for errors by reducing variation. The initiative also provided valuable information on interruptions and opportunities to reduce distractions during medication passes. By measuring the medication pass times before and after implementation, this LTC home was able to demonstrate a reduction in the morning medication pass time of approximately 20 minutes.

CONCLUSION

The *Strengthening Medication Safety in Long-Term Care* initiative supported 10 Champion Homes to undertake the following activities:

- Collect data for medication safety through completion of the MSSA-LTC and for medication safety indicators.
- Participate in incident analysis, medication reconciliation, and quality improvement workshops, and then apply the tools in their homes.
- Obtain specialized coaching and facilitation from ISMP Canada Faculty.
- Complete at least one medication management improvement project based on their local priorities.

Through these activities, the Champion Homes improved their expertise, capabilities, and capacity to continue improving medication safety locally. They were also instrumental in helping the ISMP Canada Faculty learn about the unique challenges associated with working on an initiative of this type within the LTC sector. This learning was used to adapt the incident analysis and quality improvement tools to enhance their applicability. The experience of, and feedback from, Champion Homes throughout the project was also invaluable in understanding the perceptions of health care workers, including prescribers, related to their participation in quality and safety improvement initiatives.

The second phase of the *Strengthening Medication Safety in Long-Term Care* initiative was launched in November 2022. A group of 52 homes, referred to as the Trailblazer Homes, are now accessing the tools, workshops, coaching, and facilitation developed and refined by ISMP Canada Faculty.

The work undertaken with the Champion and Trailblazer Homes has enhanced the applicability and effectiveness of the tools and resources developed through this initiative. LTC homes across Canada are encouraged to access and use the resources to inform improvements in their homes. Further information and related tools are available at the ISMP Canada website: https://ismpcanada.ca/ltc/

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