

Canadian Medication Safety Network

Consumers and Providers Sharing and Learning About Medication Safety Together

The Impact of Technology on Medication Safety Summary of Webinar Participant Feedback

October 16, 2024



Institute for Safe Medication Practices Canada



The Institute for Safe Medication Practices Canada (ISMP Canada) is a national, independent, and not-for-profit organization that purposefully partners with organizations, practitioners, consumers, and caregivers to advance medication safety in all healthcare settings. Our team of experts analyze reports of medication errors from across the country and provide resources, education, and consulting services to improve medication safety.

We analyze reports of medication errors and other issues so we can learn about the risks related to medications and collaboratively develop strategies to address them. We share lessons learned, including compelling actionable, evidence-informed recommendations that organizations, practitioners, consumers, and caregivers can use to reduce the risks related to medications. We partner to implement, sustain, and evaluate medication safety improvements in practice.

Additional information about ISMP Canada, and its products and services, is available at www.ismpcanada.ca



Purposeful Partnerships



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A Key Partner in the Canadian Medication Incident Reporting and Prevention System

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Executive Summary

The Canadian Medication Safety Network was created by the Institute for Safe Medication Practices Canada (ISMP Canada) to:

- Create a community to exchange medication safety information between healthcare providers and consumers,
- Obtain information and advice from participants on specific topics and then to have dialogue and learn together,
- Provide participants with valuable Canadian medication safety information,
- Use the information/advice from participants to more effectively develop and implement strategies for reducing preventable harm from medications.

The network engages with participants and the broader public in a variety of ways, such as interactive webinars, social media, and through dissemination and feedback of ISMP Canada materials. This report focuses on the findings from the third webinar which was held on October 16, 2024, from 12 – 1 PM EST. There were 47 attendees from across Canada.

The topic of the webinar was “The Impact of Technology on Medication Safety” and the agenda included: Opening remarks, keynote speaker, breakout room discussions and closing remarks.

Attendees participated enthusiastically and there was a positive response to the flow and the content of the webinar, based on a survey that was sent afterwards (see a summary of the results in Appendix 1).

One of the main goals is to obtain information about issues, risks and strategies in medication safety from health care providers and people with lived experience and this was achieved. A facilitator and note taker in each breakout room captured the ideas and information that were shared. The feedback has been compiled in this report for public distribution and use by ISMP Canada to advance medication safety across the country.

As one of the main goals is to listen to the needs and ideas of the network participants, there was also a specific focus on learning what topics were important to integrate into future webinars. The impact of technology on medication safety was most frequently suggested by webinar participants that completed a post webinar survey after a previous webinar on May 8, 2024.

1. Purpose and Scope of the Network

One of the goals of the Canadian Medication Safety Network is to provide opportunities for participants to engage in a community to exchange information and ideas. People that interact with medications are invited to come together and learn from each other (including healthcare professionals and people with lived experience).

Developing a webinar with a format to carry this out was an important step in furthering the network activities. Three webinars have been hosted in 2024.

2. Methodology

An e-mail invitation for this webinar was sent to the approximately 900 network registrants. They were asked to complete a Zoom registration form that included a request to select one of 5 topic options under the theme of ***The Impact of Technology on Medication Safety***. Based on their selection, participants were assigned to that small group discussion (breakout room) during the webinar.

1. Artificial Intelligence
2. Hospital Technology Systems
3. Emergency Preparedness
4. Technology Systems
5. Open Dialogue: Emerging Issues (discussion open to all medication safety topics based on the initiative of the participants).

When the webinar began, introductory information was provided, and several polls were launched for voluntary and anonymous completion by participants.

The polls asked the following questions and selected response rates are also provided.

- What is your primary role in health care? N=22
 - Pharmacy Team Member 45%
 - Nurse 32%
 - Person with Lived Experience 0%
 - Quality Improvement or Patient Safety Professional 23%
 - Other Experts 0%
- Have you or someone you know experienced an issue with the safety of medications?
 - Yes: 77% No: 23%
- Is this your first network webinar? No 73% Yes 27%

Keynote Speakers

Susan Karakashian-Simao, Director, Pharmacy & Medication Management at Mackenzie Health and Deema Nuseir, Manager, Quality and Patient Safety at Mackenzie Health prepared and delivered a presentation called *Leveraging Technology as Medication*

Safeguards. They shared the journey of Mackenzie Health over the past 13 years, the use of technology as they transitioned from one hospital to two sites. They also shared their strategic plan and a medication management framework. They have been on a journey to become a high reliability organization and have applied the ISMP Canada Hierarchy of Effectiveness to all stages of management the medication process. Strategies for improvement included implementing technology components such as automatic dispensing units, barcoding scanning and infusion pump interoperability. The full presentation can be heard in the recording found here: <https://youtu.be/Rv79ezMt1w4>

The next stage of the webinar was the small group sessions where participants spent 30 minutes sharing their perspective. They chose their preferred topic when they registered for the webinar.

Small Group Discussion Topics

- Artificial Intelligence
- Hospital Technology Systems
- Emergency Preparedness
- Technology Solutions
- Open Dialogue: Emerging Issues (discussion open to all medication safety topics based on the initiative of the participants).

Each breakout room was facilitated, and feedback recorded (through written notes) by an ISMP Canada staff member. Facilitators and note takers were prepared for this role by receiving targeted facilitation documents as well as their previous experience in these roles during the previous network webinar. Also, each room had prompt questions developed for the facilitators to help support the conversation. Breakout rooms were not digitally recorded so the notetaker's role was critical to ensure the main points were captured.

Once the breakout rooms were finished, all members returned to the large group and some facilitators shared one gem of information from their discussion with all participants.

At the end of the webinar, another poll was launched:

What would you like to share or learn about at the next webinar? Choose your top 3.
(n=16)

- Medication safety during times of medication shortages (63%)
- Look Alike/Sound Alike; High Alert Medications; Opioids (56%)
- How to give and share effective feedback for reported incidents (44%)
- Advocacy 101: What does it look like and how do you do it? (44%)
- Labelling and Packaging Issues (44%)
- Overprescribing of medications (31%)

Finally, a post webinar survey link was shared, and members were asked to complete it. Results of the survey are in Appendix 1.

3. Findings and Next Steps

Findings

The recorded notes from each small group discussion were analyzed and themes identified then formalized. They are listed below according to the topic of the discussion.

Artificial Intelligence (AI)

Summary: Insights on AI Usefulness and Challenges

1. **Data Analysis for Error Reporting:**
 - a. AI can be helpful in sifting through data related to errors, identifying relevant cases, and generating reports for incident analysis. While some results are irrelevant, overall efficiency and speed should improve.
2. **Real-Life Use Cases in Healthcare Settings Shared by Participants:**
 - a. Detecting breast cancer with greater speed and accuracy.
 - b. Identifying medication errors by detecting deviations in prescribing patterns.
 - c. AI tool diagnosing a condition correctly when healthcare professionals could not.
 - d. Speech-to-text software for physicians, though prone to mistranslations (e.g., drug dosages or names).
 - e. AI tools aid in composing detailed medical notes, saving time, and providing references.
 - f. AI detecting drug diversion among staff, enabling corrective actions.

Challenges Organizations Face with AI Implementation:

1. **Costs:** potential high expenses for acquiring and maintaining AI systems.
2. **Suspicion and Bias:**
 - a. Distrust due to lack of familiarity with AI.
 - b. Potential for AI to inherit biases from human-trained models.
3. **Data and System Limitations:**
 - a. Privacy concerns and ensuring content accuracy.
 - b. Issues with "garbage in, garbage out" when data quality is poor.
 - c. Lack of critical thinking skills in AI, necessitating human oversight.
 - d. Current reporting systems in hospitals are outdated and inconsistent.
4. **Organizational Barriers:**
 - a. Fear among staff about reporting incidents, often seen as punitive.
 - b. Absence of standardized reporting models across healthcare facilities.
 - c. Weak safety cultures hinder AI integration.

Key Insights and Recommendations:

- AI can handle vast data volumes, but human critical thinking is essential to validate and interpret results.
- Building AI tools for error analysis must adhere to **high-reliability principles** to ensure trust and effectiveness.
- Collaboration with healthcare professionals is vital for developing effective AI models.
- Promoting standardized, non-punitive reporting frameworks could enhance data collection and foster safety culture.
- Providing education on AI (e.g., through courses or networks) is critical to address knowledge gaps and build trust.

Hospital Technology Systems

The integration of advanced technology into healthcare, particularly medication management systems (MMS), presents both significant opportunities and challenges.

Nurses and pharmacists highlighted the need for robust training, maintenance, and resources to manage discrepancies and automatic dispensing cabinet failures effectively. Despite expectations that technology would reduce workload, initial implementation often increases it due to steep learning curves and the need for ongoing support. Challenges like interoperability between systems—such as electronic medical records (EMRs), automated dispensing units, and infusion pumps—hinder seamless workflows. Standardization across healthcare entities and better communication between hospitals and community pharmacies remain critical areas for improvement.

Resistance to change, high costs, and the need for constant updates add to the complexities of adopting new technologies. Effective implementation requires organizational prioritization, adequate funding, and alignment of efforts across departments. Addressing apprehension about technology and ensuring staff buy-in, including pharmacy students whose curricula often lack a focus on technology, are essential for successful adoption. While challenges exist, healthcare professionals agree that when managed effectively, technology plays a pivotal role in enhancing medication safety and streamlining workflows.

Emergency Preparedness/Open Dialogue

Due to low enrollment into each of these breakout rooms, these two topics were combined.

Emergency preparedness requires addressing diverse scenarios, including external events (e.g., wildfires, power outages) and internal disruptions (e.g., various technology failures). Some emergencies can be mitigated by organizational actions, while others, like natural disasters, are beyond local control and require strategies for mediating the risks.

Participants from Alberta and British Columbia highlight the importance of wildfire preparedness, with Alberta leveraging a provincial clinical information system to standardize and share data. In emergencies, downtime and patient movement become critical, requiring collaboration across organizations, backup plans, and regional simulations to enhance readiness.

Post-incident debrief analysis is vital but inconsistently conducted, missing opportunities to share learnings. Emotional and physical challenges during emergencies affect patients and staff, compounded by personal losses like the evacuation of their homes in wildfires. Examples from British Columbia underscore the need for coordinated evacuation plans and preparedness for prolonged travel and medication management. Key takeaways include emphasizing the importance of simulations, collaboration, and learning how to improve future responses while acknowledging the emotional toll emergencies have on all involved.

Technology Solutions

Effective Strategies and Tools:

Electronic Health Records (EHRs), such as Alberta's provincial system, have strengthened medication tracking, supported appropriate prescribing, and facilitated compliance monitoring. Tools like barcode scanning, smart pumps, [TALLman lettering](#), and medication databases improve accuracy and reduce errors. High-alert and hazardous medication alerts, along with medication reviews within EHRs, are also valuable. Incident reporting systems help identify and address issues, while new standards from the Alberta College of Pharmacy will require regulated members to have [access to Alberta Netcare](#), the provincial EHR system, by 2026. This requirement will ensure regulated members can submit and receive patient record information from the Alberta Netcare EHR system using real time integration with the pharmacy system. However, challenges remain, particularly in integrating community and hospital systems, and transitioning to new technology often results in functionality losses that take time to address.

Supporting Medication Processes and Overcoming Challenges:

Better support involves teaching students and staff to report incidents, conduct safety learning, and prepare for system downtimes through simulations. Common challenges include cyberattacks, alert fatigue from automated systems, and barriers like lack of access to barcode scanning in community settings. Overcoming these issues requires comprehensive training, building resilience against technology failures, and maintaining functionality, for example hard stops, in new systems. Enhancing interoperability across healthcare entities and engaging community pharmacies in integrated systems are critical to achieving seamless workflows and improving patient safety.

After the Webinar

A survey was sent to all participants and results are summarized in Appendix 1.

A follow up email will be sent to all Network registrants, including a link to this summary report.

In addition, applicable resources suggested at the webinar will be added to the website page on ismpcanada.ca.

These resources will include the following.

- The Zoom recording of the main presentation: <https://youtu.be/Rv79ezMt1w4>
- A copy of this report.

Next Steps

Based on the feedback in the breakout rooms, the polls during the webinar and the post webinar survey, the following actions will be implemented by ISMP Canada.

1. Continue to use the webinar format, including the use of the facilitated small group sessions in breakout rooms.
2. Schedule the next webinar for Spring 2025, using a similar format and approach as the previous Network webinars.
3. Based on participant feedback, the theme and breakout room subthemes for the next webinar will be decided upon in early 2025.

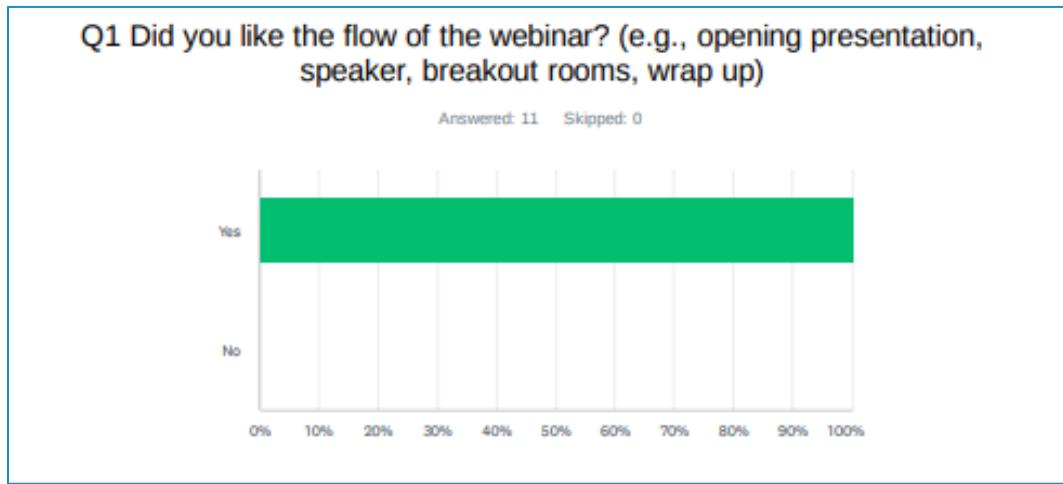
Conclusion

This Canadian Medication Safety Network webinar was successful in achieving its goals. The true value of this network will be to continue to facilitate dialogue with consumers and health care providers about their needs and interests. ISMP Canada will continue to listen to these voices and integrate the findings into new products and services. Through this process, network participants will help shape the future of medication safety across the country.

Appendix 1: Post Webinar Survey Results

A short survey was given to all attendees the end of the webinar, and they were asked to complete it with their feedback. A total of 11 people (20% of attendees) completed the survey, results are below.

Question 1



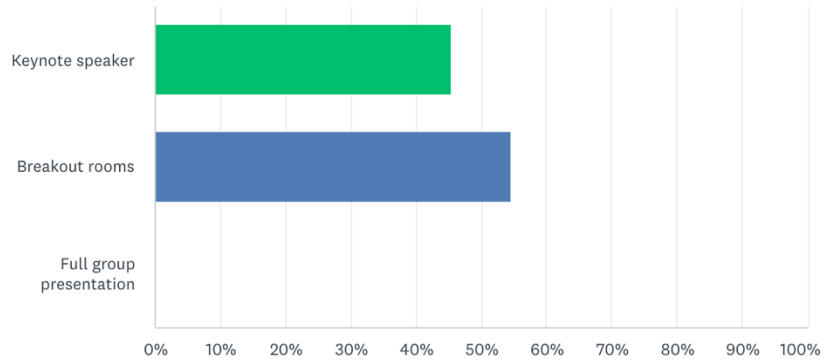
Comments:

- We needed more time for the AI session. Suggest a follow-up session on this topic - we didn't scratch the surface on the potential role of AI
10/16/2024 01:01 PM [View respondent's answers](#) [Add tags](#)▼
- Enjoyed the breakout rooms
10/16/2024 01:00 PM [View respondent's answers](#) [Add tags](#)▼
- Good timing of this webinar
10/16/2024 01:00 PM [View respondent's answers](#) [Add tags](#)▼

Question 2

Tell us your preferred section of the webinar.

Answered: 11 Skipped: 0



Comments:

enjoyed all

10/16/2024 01:00 PM

[View respondent's answers](#) [Add tags ▼](#)

Both were helpful

10/16/2024 01:00 PM

[View respondent's answers](#) [Add tags ▼](#)

Question 3

Q3 Please indicate your level of agreement by checking the appropriate column.

Answered: 11 Skipped: 0

	STRONGLY AGREE	AGREE	NEUTRAL	DISGEE	STRONGLY DISAGREE	TOTAL
▼ The quality of the content was relevant to my interests.	63.64% 7	36.36% 4	0.00% 0	0.00% 0	0.00% 0	11
▼ The keynote speaker was engaging.	45.45% 5	45.45% 5	9.09% 1	0.00% 0	0.00% 0	11
▼ The time in the breakout rooms was well used.	45.45% 5	45.45% 5	9.09% 1	0.00% 0	0.00% 0	11
▼ The conversation in the breakout room was meaningful.	54.55% 6	36.36% 4	9.09% 1	0.00% 0	0.00% 0	11


Comments:


- I liked the small group!
 10/17/2024 07:11 PM [View respondent's answers](#) [Add tags▼](#)
- Unfortunately a guest was sharing a personal story and was interrupted by returning to the main group. Is it possible for future webinars for the breakout rooms to rejoin on their own, so that we can be more sensitive to someone sharing.
 10/16/2024 01:05 PM [View respondent's answers](#) [Add tags▼](#)
- The webinar would be better at 90 mins - allow for Q&A for speaker and more breakout discussion time
 10/16/2024 01:03 PM [View respondent's answers](#) [Add tags▼](#)
- I wish the breakout room time was a bit longer.
 10/16/2024 01:00 PM [View respondent's answers](#) [Add tags▼](#)

Question 4:

What topics would you like to see addressed in future webinars?

Answered: 6 Skipped: 5

RESPONSES (6) **WORD CLOUD** **TAGS (0)** 

  Filter: by tag ▼

Showing 6 responses

Managing drug shortages - identifying safety issues nationally when we bring in foreign products - rather than each site doing it on their own
10/17/2024 07:11 PM [View respondent's answers](#) [Add tags ▼](#)

I would like to discuss how to give effective feedback regarding medication incidents within a just culture framework and without creating second victims. Effective incident and safety feedback should be kept separate from any disciplinary action, if disciplinary action is required.
10/16/2024 01:07 PM [View respondent's answers](#) [Add tags ▼](#)


Planning for future pandemics
10/16/2024 01:05 PM [View respondent's answers](#) [Add tags ▼](#)


Promoting safety while preserving therapeutics

Question 5:

Any other suggestions?

Answered: 2 Skipped: 9

RESPONSES (2) **WORD CLOUD** **TAGS (0)** 

  Filter: by tag ▼

Showing 2 responses

how are sites across Canada managing the change in Accreditation ROPs; how to advocate nationally to manufacturers for GTIN barcodes
10/17/2024 07:11 PM [View respondent's answers](#) [Add tags ▼](#)

methods to promote/support med incident reporting
10/16/2024 01:00 PM [View respondent's answers](#) [Add tags ▼](#)