Practical examples - Addressing medication safety in high-risk situations at the organizational level

Dr Michael Hamilton

BSc, BEd, MD, MPH
Medical Director
ISMP Canada

17 May 2022
Addressing high-alert medication safety at the organizational level

Michael Hamilton BSc, BEd, MD, MPH
Medical Director, ISMP Canada

17 May 2022, Webinar #4
WHO Global Patient Safety Challenge: *Medication Without Harm*
A Trusted Partner

Strengthening medication safety through timely learning, sharing, and acting to improve health care.

ISMP Canada is a national, independent, not-for-profit organization that purposefully partners with organizations, practitioners, consumers, and caregivers to advance medication safety in all healthcare settings.

For over 20 years...

Learn
We synthesize knowledge by collecting, aggregating, and analyzing data on medication safety from practitioners, consumers, caregivers, and others.

Act
We partner to implement, sustain, and evaluate medication safety improvements in practice.

Share
We disseminate lessons learned with compelling, actionable, evidence-informed recommendations across the health system.
High-Alert and High Risk

Know your High-Alert Medications
Know your High-Alert Situations
Know your High-Alert Populations
High-Alert Medications

Your list of High Alert/High Risk Medicines

• Create your organization’s list based on your context
• Raise awareness
• Update regularly
High-Alert Medications

Health Care Settings % of Harm Reports

Community Pharmacy
- Methadone 6.3%
- Levothyroxine 2.9%
- Metformin 2.6%

Home and Community Care
- HYDROMorphine 6.3%
- Methotrexate 6.3%
- Bisoprolol 4.7%

Hospital
- HYDROMorphine 6.8%
- Morphine 3.3%

Long-term Care
- HYDROMorphine 12.3%
- Fentanyl 10.5%
- Insulin 8.1%

ISMP Canada Safety Bulletin 2020 Dec 20
Your High-Risk/High-Alert Medication List is only a list of your High-Risk/High Alert medications.
High-Alert Medications

Your High-Alert Medication List—Relatively Useless Without Associated Risk-Reduction Strategies

April 4, 2013

**Problem:** Have you ever watched the 1993 movie, *Groundhog Day*? Bill Murray plays Phil Conners, a television news reporter who finds himself reliving the same day over and over again—a much-hated assignment covering the annual Groundhog Day event in Punxsutawney, PA. Well, at times it feels like “Groundhog Day” when we hear about the same types of errors happening over and over again. Another patient with diabetes receives a 5-fold overdose.
To build effective strategies, you must understand why errors occur with these medications.
The interventions must be effective and impactful
High-Alert Medication Safeguards

You need multiple overlapping safeguards throughout the medication use process

Upstream – Prevent error and harm

Downstream – Detect error and mitigate harm
High-Alert Medication Actions

- Safe Design
  - Forcing functions and fail safes
  - Barriers to mis-use
  - Limitation of access or use
  - Organizational factors
- Standardization
- Simplification
- Redundancies
- Checking procedures

- Reminders and alerts
- Person Centered
  - Training and practice
  - Situational awareness
  - Maintenance of competency
  - Performance factors
- Error Mitigation
  - Error detection
  - Error recovery
- Safety Culture Development
High-Alert Medications
High-Alert Medication IV Opioids

Intravenous Opioids

- Intrinsic potency and effects of medication
- Often used in high alert situations
- Often used in high alert populations
Potential Interventions

• Purchase in ready to use form
• Store safely
• Prescribe according to guidelines and standards
• Review by clinical pharmacist
• Independent double check at dispensing
• Provided to nurse in single-patient unit-dose
• Independent double check at administration
• Robust monitoring protocols
• Safe and timely disposal of waste
• Availability of naloxone and rescue team
High-Alert Medications

- Procurement
- Storage
- Prescribing
- Transcribing
- Preparation
- Dispensing
- Administration
- Monitoring
- Safe storage
- Prescribing guidelines
- Safe disposal of waste
- Ready to use format
- Review by clinical pharmacist
- Effective monitoring
- Single patient dose
- Naloxone rescue

Double check

Double check

Double check
High-Alert Medications

International Medication Safety Network (IMSN)

Global Targeted Medication Safety Best Practices

Global Targeted Medication Safety Best Practice 3

Prevent inadvertent daily dosing of oral methotrexate for non-oncologic conditions.

Background

Methotrexate is a folate antimitabolite used in the treatment of neoplastic diseases and non-oncological conditions such as psoriasis, rheumatoid arthritis, and other conditions. When used to treat disorders such as psoriasis and rheumatoid arthritis, low doses are administered weekly by the oral route. However, for some cancer types, a more frequent or higher dose is used (1). At high doses, oral methotrexate is known to be associated with serious and sometimes fatal blood dyscrasias, but similar adverse outcomes have been associated with the
High-Alert Medications

**Insulin**
- Purchase in ready to use format
- Institute prescribing guidance
- Warning for duplicate therapies
- Dispense in smaller quantities
- Independent double checks during preparation, dispensing, and administration
- Ensure access to monitoring (capillary glucose, serum glucose)
- Ensure access to reversal agents (glucagon, dextrose, simple sugars)
Anticoagulants

- Purchase in ready to use format
- Institute prescribing guidance
- Warning for duplicate therapies
- Dispense in smaller quantities
- Independent double checks during preparation, dispensing, and administration
- Ensure access to monitoring (INR)
- Ensure access to reversal agents
High-Alert Medications Key Points

• Start with a High-Alert Medication list - do not end with a list
• Implement enhanced safeguards
  • Meaningful, impactful
  • Multiple, overlapping points in the process
• Evaluate, learn, and share
High-Alert Medications

Thank you!