RISK PROFILE

CARE – Medication Adverse Events

Medication adverse events may occur in any healthcare setting and may result in significant harm to patients. Medication adverse events may be a result of human error (e.g., knowledge deficit, lack of compliance with safety protocols), ineffective processes, physical environment.

This document contains information entered by HIROC subscriber healthcare organizations (acute and non-acute) in the Risk Register application to help you in your assessment of this risk.

Ranking / Ratings[1]

- Likelihood – average score 2.84
- Impact – average score 3.63

The Risk Register allows for risks to be assessed on a five-point likelihood and impact scale, with five being the highest.

Key Controls / Mitigation Strategies

- Key policies/procedures/processes
    - ✓ Safe medication practices and incident review committees
    - ✓ 8-rights of medication administration
    - ✓ Point-of-care patient identification and verification (i.e. scanning patient armbands – barcodes)
    - ✓ Allergy documentation and alerts in medical record, pharmacy system, and patient armband
    - ✓ Independent double checks
    - ✓ High-alert medication identification/list
    - ✓ Elimination of concentrated potassium solutions in clinical areas
    - ✓ 'Do Not Use' abbreviation list
    - ✓ Medication reconciliation (admission, transfer, discharge)
    - ✓ Best Patient Medication History (BPMH)
    - ✓ Management of patient's own medication (including storage separate from Pharmacy dispensed medications)
    - ✓ Standardized order sets and processes to develop and review
    - ✓ Pharmacy review and oversight of prescribing (i.e. dose/concentration/contraindications)
    - ✓ Pharmacy identification and notification to prescriber of need for therapeutic drug monitoring
    - ✓ Alignment of paper orders and electronic orders
    - ✓ Formulary review
    - ✓ Look alike and sound alike medications
    - ✓ Storage locations of drugs used for topical and injectable use
    - ✓ Limit concentrations of hydromorphone in clinical areas
    - ✓ Standardized IV solutions
    - ✓ Pre-mixed IV solutions; pre-filled syringes
    - ✓ Standardized medication labeling
    - ✓ Safe storage of medications
    - ✓ Management of narcotics and controlled substances
    - ✓ Management of neuromuscular blocking agents
        - Specialized labeling for neuromuscular blocking agents
        - Access to airway and resuscitation equipment and resources when using neuromuscular blocking agents

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- Management of cytotoxic and non-cytotoxic hazardous drugs
  - Limit location where chemotherapy agents can be administered
  - Compounding worksheets outlining PPE requirements (pharmacy-specific)
  - Make available Intravenous (IV) monographs outlining handling requirements
  - Auxiliary labels indicating cytotoxic status
  - Medical order clear identification of route for administration of chemotherapy
  - Dispensing of medication that avoids any direct handling outside of the pharmacy
  - Limit administration of intrathecal chemotherapy to hematologists
    - Limit where intrathecal chemotherapy can be administered

- Equipment and technology
  - Smart pump technology
    - Patient Profile Capability Error Messaging
    - Maintenance of Smart Pump Drug Libraries
  - Closed-loop medication management systems (including bar code packaging)
  - Preventative maintenance program for all IV pumps
  - Dedicated vaccine refrigerator with temperature monitoring log
  - Medication dispensing systems (with automated storage and retrieval)
  - Automated warning on Omnicell for high alert/high concentration medications
  - Hazardous medications secure storage containers
  - Optimize usage of electronic solutions intended to improve medication safety
    - Computerized Physician Order Entry (CPOE)
    - Electronic medical record (EMR) allergy alerts
  - Proactive monitoring of drug shortages, alerts and recalls

- Education/Training/Resources
  - Nursing orientation/annual medication safety education/in-services
    - Medication safety, knowledge and testing
    - Drug calculation knowledge and testing
    - IV smart pump knowledge and training yearly
    - High alert medication knowledge and testing
    - Oxytocin knowledge and testing
    - Patient controlled analgesia (PCA) pain management knowledge and testing
    - Independent double check for high-risk medication knowledge and testing
    - eFormulary knowledge and testing
    - comprehensive skills training related to intravenous (IV) fluid therapy including early detection of IV infiltration and management of
  - Drug-related information resources available and accessible
  - Hard copy drug formulary available for downtime procedures
  - eFormulary on organization website and mobile applications

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- ✓ IV drug monograph instructions available and accessible
- ✓ Up to date listing of all cytotoxic/biologic agents in formulary
  - Management of
  - Safe handling and disposal of
- ✓ Pharmacist on-call afterhours and on-site weekend coverage
- ✓ Pharmacy order entry staff are regulated health care providers
- ✓ Pharmacy technicians with specialized knowledge for sterile compounding
- ✓ Aseptic technique training for staff in compounding room
- ✓ Code Brown/management of hazardous cytotoxic medication spills education
- ✓ College of Pharmacy – standards of practice (i.e. Schedule II and III drugs)
- ✓ College of Nurses – medication practice standards
- ✓ College of Physicians and Surgeons – medication management
- ✓ Accreditation Canada – medication management and prevention of adverse medication events

Monitoring / Indicators

- Medication incident reports/reviews/trends (including near misses)
- Monitor mandatory reporting of adverse drug events
- Monitor maintenance of shortage lists
- Narcotic utilization and losses
- Hazardous drug spills and safety incidents to occupational health and risk department
- Reviews of incidents and current processes
- Independent double check/high alert medications audits
- IV solution concentration and volumes audits
- Electronic medication management audits
- Education logs
- Audits to assess compliance with policies and processes e.g. narcotic count process and records
- Documentation audits
- Computerized Physician Order Entry (CPOE) audits
- Number of patient complaints related to IV insertion, drug errors
- Surveillance cameras in medication rooms where narcotics are dispensed
- Smart pump errors investigations
  - Review of smart pump logs
- Reports to MAC, Quality and other Governance committees

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