



A high-alert medication is a medication that bears a heightened risk of causing significant harm when used in error.

This list is intended to assist care organizations in developing their own organization-specific high-alert medication list.

For further information about using this list refer to the [User Guide](#) and the [ISMP Canada Safety Bulletin](#).

SAFETY CONSIDERATIONS:

Anesthetic and sedation agents, inhaled and intravenous

(e.g., ketamine, propofol, sevoflurane)

Immediate and pronounced physiologic effects requiring continuous monitoring

Antithrombotic medications

Anticoagulants, injectable (e.g., heparin, low-molecular-weight heparin)

Risk of severe or catastrophic hemorrhage

Anticoagulants and coagulation factor inhibitors, oral (e.g., apixaban, rivaroxaban, warfarin)

Thrombolytics (e.g., alteplase)

Direct thrombin inhibitors (e.g., bivalirudin, dabigatran)

Cancer chemotherapy/antineoplastic medications *(can be considered as entire class or as individual subclasses)*

Alkylating agents (e.g., carmustine, cisplatin, cyclophosphamide)

Risk of toxic effects and organ/tissue damage

Antimetabolites (e.g., fluorouracil, gemcitabine, methotrexate)

Antitumour antibiotics (e.g., bleomycin, doxorubicin)

Topoisomerase inhibitors (e.g., etoposide, topotecan)

Mitotic inhibitors (e.g., paclitaxel, vincristine)

Immune-modulating therapies (e.g., rituximab, trastuzumab)

Other antineoplastic therapies (e.g., asparaginase, eribulin, procarbazine)

Electrolyte and related intravenous solutions

Calcium (all salts) at concentrations greater than or equal to 10%

Risk of serious electrolyte and fluid disturbances

Magnesium sulfate at concentrations greater than 20%

Potassium (all salts) at concentrations greater than or equal to 2 mmol/mL (2 mEq/mL)

Sodium acetate and sodium phosphate at concentrations greater than or equal to 4 mmol/mL

Sodium chloride at concentrations greater than 0.9%

Sterile water for injection in 1-litre bags

Dextrose at concentrations greater than 20%

Insulins

Risk of severe hypoglycemia

Neuromuscular blockers/paralyzing agents

(e.g., rocuronium, succinylcholine, vecuronium)

Risk of paralysis and respiratory compromise

Opioids

(e.g., buprenorphine/naloxone, fentanyl, hydrocodone, hydromorphone)

Risk of oversedation and respiratory depression

Medications with profound cardiovascular/physiologic effects

Adrenergic agonists, intravenous (e.g., dopamine, epinephrine)

Immediate and pronounced physiologic effects requiring continuous monitoring of physiologic parameters

Adrenergic antagonists, intravenous (e.g., labetalol, phentolamine)

Antiarrhythmic medications, intravenous (e.g., amiodarone, lidocaine)

Inotropic medications, intravenous (e.g., dopamine, milrinone)

Vasodilating medications, intravenous (e.g., epoprostenol, nitroprusside)

Vasoconstricting medications, intravenous (e.g., vasopressin)

Medications for specific circumstances

Medications given by epidural or intrathecal route

Risk of severe damage to tissues of the central nervous system

Medications known to be absolutely contraindicated in pregnancy (e.g., Drugs classified in FDA Pregnancy Category X, methotrexate, valproic acid)

Risk of teratogenicity, fetal demise

Injectable or depot medications with long-acting effects (e.g., denosumab, depot-progesterone, leuprolide)

Extended and nonreversible effects

Specific medications or therapies

Acetylcysteine, intravenous, when used as an antidote for acetaminophen overdose

Risk of acetylcysteine toxic effects and/or fluid and electrolyte effects

Benzodiazepines, injectable (e.g., lorazepam, midazolam)

Risk of oversedation

Cardioplegic solutions

Immediate and pronounced physiologic effects requiring continuous monitoring of physiologic parameters

Epinephrine, intramuscular or subcutaneous

Methotrexate, when used in non-oncologic indications

Risk of inadvertent daily administration, which may result in bone marrow toxic effects

Oxytocin and analogues, injectable (e.g., carbetocin, oxytocin)

Risk of maternal, fetal, and/or neonatal harm