
Central Administration for Pharmaceutical Care
General Administration of Drug Utilization and Pharmacy Practice

National Egyptian High Alert Medication List 2025

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High Alert Medication List

Definition

High alert medications are drugs that carry a significant risk of causing serious harm to patients if used incorrectly. While mistakes with these medications may not occur more frequently than with others, the consequences of errors can be particularly severe. Therefore, these medications require special precautions to minimize the risk of errors.

Strategies for reducing errors

- Standardize the storage, ordering, preparation, and administration of these medications.
- Improve access to information about high alert medications.
- Limit access to these medications to reduce the risk of errors.
- Utilize auxiliary labels to provide important warnings and instructions.
- Employ clinical decision support tools and automated alerts.
- Use redundancies, such as automated or independent double checks, when necessary.

Disclaimer

This list serves as guidance and outlines the minimum requirements for handling high-risk medications. Each healthcare facility may expand upon it by including additional items that reflect specific risk factors relevant to their practice.

High Alert Medication List in Acute Care

	Medication	Dosage Form and Strength
1	Adrenergic agonists IV	
	Examples	
	Epinephrine	IV: 1 mg/ml
	Norepinephrine	IV: 8 mg norepinephrine tartrate/ 4 ml
	Ephedrine	Parenteral: SC, IV, or IM
2	Adrenergic antagonists IV	
	Examples	
	Propranolol	IV: 1 mg/ml
	Metoprolol tartrate	IV: 1 mg /ml
	Labetalol hydrochloride	IV: 5 mg/ml
3	Anesthetic agents (Inhaled and IV)	
	Examples	
	Propofol	IV: 10 mg/ml; 20 mg /ml
	Ketamine	IV: 50 mg /ml
	Thiopental	IV: 0.5 gm, 1 gm
	Halothane	Volatile liquid for inhalation 100%
	Isoflurane	Inhalational solution 100%
	Sevoflurane	Inhalational liquid 100%
4	Antiarrhythmic, IV	
	Examples	
	Lidocaine	IV: 2%
	Amiodarone	IV: 50 mg/ml
	Flecainide acetate	IV: 150 mg / 15 ml
	Verapamil	IV: 5 mg / 2 ml
5	Antiarrhythmic oral	
	Propafenone	Film-coated tablets: 150 mg; 300 mg
6	Antithrombotic agents	
	Anticoagulants	
	Examples	
	Warfarin	Tablets: 1 mg; 2mg; 3 mg; 5 mg
	Unfractionated heparin	Parenteral: SC or IV Heparin calcium 12000 I.U.; Heparin sodium 5000 I.U.

Low molecular weight heparin		
	Examples	
	Enoxaparin	Parenteral: 20 mg/0.2 ml SC 40 mg/0.4 ml SC 60 mg/0.6 ml SC or IV 80 mg/0.8 ml SC or IV
	Nadroparin	Parenteral: SC 2580 I.U./0.3 ml 5700 I.U./0.6 ml 7600 I.U./0.8 ml
	Tinzaparin	Parenteral: SC 3500 I.U./0.35 ml 4500 I.U. /0.45 ml 10000 I.U./0.5 ml 14000 I.U./0.7 ml 18000 I.U./0.9 ml
Direct oral anticoagulants and factor Xa inhibitors		
	Examples	
	Dabigatran	Capsules: 75 mg; 110 mg; 150 mg
	Rivaroxaban	Tablets: 2.5 mg; 10 mg; 15 mg; 20 mg
	Apixaban	Tablets: 2.5 mg; 5 mg
	Edoxaban	Tablets: 15 mg; 30 mg; 60 mg
	Fondaparinux	Parenteral: IV, SC: 2.5 mg / 0.5 ml; Parenteral: SC: 7.5 mg /0.6 ml
Direct thrombin inhibitors		
	Examples	
	Argatroban	IV: 250 mg / 2.5 ml; 100 mg/ml
	Bivalirudin	IV: 250 mg
	Recombinant Hirudin	Parenteral: SC: 15 mg/ml
Glycoprotein IIb/IIIa inhibitors		
	Examples	
	Tirofiban	IV: 0.05 mg/ml; 0.25 mg /ml
Thrombolytics		
	Examples	
	Streptokinase	IV: 1.5 million I.U.
	Alteplase	IV: 50 mg
7	Cardioplegic solutions (magnesium chloride + potassium chloride) injection	
8	Chemotherapeutic agents, parenteral and oral	
9	Dextrose, hypertonic, 20% or greater	
	Examples	
	Dextrose	IV: 25%; 50%
10	Dialysis solutions	
	Examples	
	Hemodialysis solutions injection	Any preparation

	Peritoneal dialysis solutions injection	Any preparation
11	Epidural and intrathecal medications	
	Examples	
	Bupivacaine hydrochloride	Epidural injection: 5 mg/ml
	Ropivacaine hydrochloride	Epidural Injection: 5 mg/ml
	Cytarabine	Intrathecal injection: 20 mg/ml; 100 mg/ml
	Methotrexate	For intrathecal injection: 25 mg/ml; 100 mg/ml
	Hydrocortisone	For intrathecal injection: 100 mg
12	Inotropic medications, IV	
	Examples	
	Digoxin	IV: 0.25 mg/ml
	Milrinone	IV: 1 mg/ml
	Dobutamine	IV: 50 mg/ml; 12.5 mg/ml
	Dopamine	IV: 200 mg / 5 ml
13	Insulin, subcutaneous and IV	
14	Liposomal forms of drugs (e.g., liposomal amphotericin B) and conventional counterparts (e.g., amphotericin B deoxycholate)	
15	Moderate sedation agents, IV	
	Examples	
	Dexmedetomidine	IV: 4 mcg/ml; 100 mcg/ml
	Midazolam	IV: 5 mg /ml
	Diazepam	IV: 5 mg/ml
16	Moderate and minimal sedation agents, oral, for children	
	Examples	
	Ketamine [using the parenteral form]	Parenteral: 50 mg/ml
17	Opioids, including: IV oral (including liquid concentrates, immediate- and sustained-release formulations) transdermal	
	Morphine sulfate	IV: 10 mg/ml; 20 mg /ml Film-coated tablets: 20 mg
	Pethidine	IV: 50 mg /ml
	Fentanyl	IV: 0.05 mg /ml Patch: 25 mcg/hr; 50 mcg/hr; 75 mcg/hr; 100 mcg/hr Sublingual tablets: 100 mcg; 200 mcg
	Nalbuphine	IV: 10 mg/ml; 20 mg /ml
	Oxycodone	Oral tablets of any strength
	Tramadol	Capsules and tablets: 50 mg; 100 mg; 150 mg; 200 mg IV: 100 mg / 2 ml
18	Neuromuscular blocking agents	
	Examples	
	Succinylcholine chloride	IV, IM: 20 mg /ml
	Rocuronium bromide	IV: 10 mg /ml

	Vecuronium	IV: 10 mg
	Pancuronium	IV: 2 mg/ml
	Atracurium besilate	IV: 10 mg/ml
	Cisatracurium	IV: 2 mg/ml
19	Parenteral nutrition preparations	
20	Sodium chloride for injection, hypertonic, greater than 0.9% concentration	
	Examples	
	Sodium chloride	Solution for IV infusion: 3%
21	Sterile water for injection, inhalation, and irrigation (excluding pour bottles) in containers of 100 ml or more	
22	Antidiabetic medications	
	Oral sulfonylureas alone or in combination	
	Oral SGLT2 inhibitors alone or in combination	
	GLP-1 medications	
23	Vaccines	
24	Antidotes	
	Naloxone	Parenteral: SC, IV, or IM
	Acetylcysteine	IV when used as an antidote ONLY for acetaminophen overdose
25	Radiographic contrast media	
26	Electrolytes	
	Calcium chloride	IV
	Calcium gluconate	IV
	Magnesium sulfate	IV injection 10%
	Potassium chloride for injection concentrate	IV: 0.746 gm/L; 500 mg/5 ml, 1.5 g/100 ml, 15 g/100 ml, 3 g/100 ml
27	Specific medications	
	Sodium bicarbonate	IV: 8.4%
	Oxytocin	IV: 5 I.U./ml; 10 I.U./ml
	Tranexamic acid	IV: 500 mg/ 5 ml
	Misoprostol	Tablets: 200 mcg
	Nitroglycerin	Solution for IV infusion
	Phentolamine mesylate	Parenteral: IV, IM
	Zoledronic acid	Solution for IV infusion
	Methotrexate	Tablet: 2.5mg

High Alert Medication List in Community/Ambulatory Care Settings

Ambulatory care sites such as long-term care facilities, long-term acute care facilities, dialysis facilities, ambulatory surgery centers, and the pharmacies that provide services to them.

	Medication	Dosage Form and Strength
1	Antithrombotic agents, oral and parenteral	
	Anticoagulants	
	Examples	
	Warfarin	Tablets: 1 mg; 2mg; 3 mg; 5 mg
	Unfractionated Heparin	Parenteral: SC or IV Heparin calcium 12000 I.U. Heparin sodium 5000 I.U.
	Low molecular weight heparin	
	Examples	
	Enoxaparin	Parenteral: 20 mg/0.2 ml SC 40 mg/0.4 ml SC 60 mg/0.6 ml SC or IV 80 mg/0.8 ml SC or IV
	Nadroparin	Parenteral: SC 2580 I.U./0.3 ml 5700 I.U./0.6 ml 7600 I.U./0.8 ml
	Tinzaparin	Parenteral: SC 3500 I.U./0.35 ml 4500 I.U./0.45 ml 10000 I.U./0.5 ml 14000 I.U./0.7 ml 18000 I.U./0.9 ml
	Direct oral anticoagulants and factor Xa inhibitors	
	Examples	
	Dabigatran	Capsules: 75 mg; 110 mg; 150 mg
	Rivaroxaban	Tablets: 2.5 mg; 10 mg; 15 mg; 20 mg
	Apixaban	Tablets: 2.5 mg; 5 mg
	Edoxaban	Tablets: 15 mg; 30 mg; 60 mg
	Fondaparinux	Parenteral: IV, SC 2.5 mg / 0.5 ml Parenteral: SC: 7.5 mg / 0.6 ml
	Direct thrombin inhibitors	
	Examples	
	Argatroban	IV: 250 mg / 2.5 ml; 100 mg/ml
	Bivalirudin	IV: 250 mg
	Recombinant Hirudin	Parenteral: SC: 15 mg/ml

2	Chemotherapeutic agents, excluding hormonal therapy	
3	Oral and parenteral chemotherapy (e.g., capecitabine, cyclophosphamide)	
4	Oral targeted therapy and immunotherapy (e.g., palbociclib, imatinib, bosutinib)	
5	Immunosuppressant agents, oral and parenteral	
	Examples	
	Azathioprine	Tablets: 25 mg; 50 mg; 75 mg; 100 mg
	Cyclosporine	Oral capsules: 25 mg; 50 mg; 100 mg
	Tacrolimus	Oral capsules: 0.5 mg; 1mg; 3 mg
	Mycophenolate mofetil	Tablets and capsules: 180 mg; 360 mg; 250 mg; 500 mg
	Sirolimus	Tablets: 1 mg
	Everolimus	Tablets: 0.25 mg; 0.75 mg; 1 mg; 5 mg
6	Insulins, all formulations and strengths	
7	Medications contraindicated during pregnancy (e.g., bosentan, isotretinoin)	
8	Moderate and minimal sedation agents, oral, for children	
	Examples	
	Ketamine [using the parenteral form]	50 mg/ml
9	Opioids, all routes of administration (e.g., oral, sublingual, parenteral, transdermal), including liquid concentrates, immediate- and sustained-release formulations, and combination products with another drug	
	Examples	
	Tramadol	Capsules and tablets: 50 mg; 100 mg; 150 mg; 200 mg IV: 100 mg / 2 ml
	Morphine sulfate	IV: 10 mg/ml; 20 mg /ml Film-coated tablets: 20 mg
	Pethidine	IV: 50 mg /ml
	Fentanyl	IV: 0.05 mg /ml Patch: 25 mcg/hr; 50 mcg/hr; 75 mcg/hr; 100 mcg/hr Sublingual tablets: 100 mcg; 200 mcg
	Nalbuphine	IV: 10 mg/ml; 20 mg /ml
	Oxycodone	Oral tablets and IV injection: any strength
10	Pediatric liquid medications that require measurement	
11	Antidiabetic medications	
	Oral sulfonylurea alone or in combination	

	Oral SGLT2 inhibitors alone or in combination	
	GLP-1 medications	
12	Specific medications	
	Carbamazepine	Oral suspension: 100 mg / 5 ml Tablets: 200 mg; 400 mg
	Epinephrine	IM, SC: 1 mg/ml
	Lamotrigine	Tablets: 5 mg; 25 mg; 50 mg; 100 mg Extended-release tablets: 200 mg
	Phenytoin	Capsules: 50 mg; 100 mg Oral suspension: 30 mg / 5 ml Parenteral: IV, IM: 250 mg / 5 ml
	Valproic acid	Capsules: 150 mg; 300 mg Extended-release tablets: 250 mg; 500 mg Syrup: 250 mg / 5 ml IV: 500 mg / 5 ml
	Methotrexate	Tablet: 2.5mg

List of Abbreviations

hr.	Hour
IM	Intramuscular
I.U.	International Unit
IV	Intravenous
GLP-1	Glucagon-Like Peptide-1
gm	Gram
gm/L	Gram per liter
mcg	Microgram
mcg/hr.	Microgram per hour
mcg/ml	Microgram per milliliter
mg	Milligram
mg/ml	Milligram per milliliter
SC	Subcutaneous
SGLT2	Sodium-Glucose Transporter 2

Resources

- <https://www.ismp.org/recommendations/high-alert-medications-acute-list>
- <https://www.ismp.org/sites/default/files/attachments/2018-08/highAlert2018-Acute-Final.pdf>
- https://www.pharmacy.gov.my/v2/sites/default/files/document-upload/guideline-safe-use-high-alert-medications-hams-2nd-edition_1.pdf
- <https://www.ihl.org/Topics/HighAlertMedicationSafety/Pages/default.aspx>
- <https://reference.medscape.com/drugs/anesthetics>
- <https://www.ismp.org/recommendations/high-alert-medications-community-ambulatory-list>
- https://www.ismp.org/system/files/resources/2021-09/HighAlertMedications_Community-2021.pdf
- <https://www.ismp.org/recommendations/high-alert-medications-long-term-care-list>
- https://www.ismp.org/system/files/resources/2021-05/HighAlertMedications_LTC-2021.pdf
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8987166/#:~:text=Zhang%2C%202018\).-,%20kidney%2C%20heart%20and%20liver.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8987166/#:~:text=Zhang%2C%202018).-,%20kidney%2C%20heart%20and%20liver.)
- <https://www.apdaparkinson.org/what-is-parkinsons/treatment-medication/medication/>
- <https://www.drugs.com/drug-class/gamma-aminobutyric-acid-analogs.html>