

# ISMP List of *High-Alert Medications* in Long-Term Care (LTC) Settings

**H**igh-alert medications are drugs that bear a heightened risk of causing significant patient or resident harm when they are used **in error** (e.g., wrong drug, wrong dose, wrong route). Although mistakes may or may not be more common with these drugs, the consequences of an error with these medications are clearly more devastating to patients or residents. We hope you will use this list to determine which medications require special safeguards to reduce the risk of errors. This may include strategies such as standardizing the ordering, storage, preparation, and administration of these products; improving access to information about these drugs; limiting access to high-alert medications; using auxiliary labels and automated alerts; and employing redundancies such

as automated or independent double-checks when necessary. (Note: manual independent double-checks are not always the optimal error-reduction strategy and may not be practical for all of the medications on the list). Please note that long-term acute care (LTAC) facilities, and LTC facilities with subacute units or where a wide variety of intravenous medications are administered, should also use the *ISMP List of High-Alert Medications in Acute Care Settings*, which can be found at: [www.ismp.org/Tools/institutionalhighAlert.asp](http://www.ismp.org/Tools/institutionalhighAlert.asp). Facilities are also encouraged to use other resources, such as the Beers Criteria<sup>1</sup> and STOPP and START Criteria,<sup>2</sup> to identify and address medications that should be avoided in the elderly population, which are different from high-alert medications.

Classes/Categories of Medications
anticoagulants, parenteral and oral*
chemotherapeutic agents, parenteral and oral (excluding hormonal agents)
hypoglycemics, oral (including combination products with another drug)
insulins, all formulations and strengths (e.g., U-100, U-200, U-300, U-500)
parenteral nutrition preparations
opioids - parenteral, transdermal, and oral (including liquid concentrates, immediate- and sustained-release formulations, and combination products with another drug)

\* including warfarin and newer agents.

Specific Medications
digoxin, parenteral and oral
<b>EPINEPH</b> rine, parenteral
iron dextran, parenteral
methotrexate, oral, non-oncology use **
concentrated morphine solution, oral ***

\*\* All forms of chemotherapy are considered a class of high-alert medications. Oral methotrexate for non-oncology purposes has been singled out for special emphasis to bring attention to the need for distinct strategies to prevent wrong frequency errors that occur with this drug when used for non-oncology purposes that can result in death.

\*\*\* All forms of opioids are considered a class of high-alert medications. Concentrated morphine solution has been singled out for special emphasis to bring attention to the need for distinct strategies to prevent wrong frequency errors that occur with this drug that can result in death.

## Background

Based on error reports submitted to the ISMP National Medication Errors Reporting Program, reports of harmful errors in the literature, and input from practitioners and safety experts, ISMP created and will periodically update a list of potential high-alert medications in the long-term care setting. During March 2016, practitioners from LTC facilities responded to an ISMP survey designed to identify which medications were most frequently considered high-alert medications in this setting. Further, to assure relevance and completeness, the clinical staff at ISMP, members of our LTC Advisory Board, and safety experts throughout the US were asked to review the potential list. This list of specific medications and medication classes/categories reflects the collective thinking of all who provided input.

## REFERENCES

- 1) American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. *J Am Geriatr Soc.* 2015;63(11):2227-46. [www.ismp.org/sc?id=1752](http://www.ismp.org/sc?id=1752)
- 2) PL Detail - Document, STARTing and STOPPING medications in the elderly. *Pharmacist's Letter/Prescriber's Letter.* September 2011. [www.ismp.org/sc?id=1753](http://www.ismp.org/sc?id=1753)

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