

# Drug Concentration Standardization

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# Financial Disclosures

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- None

# Variance

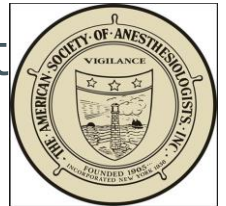
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- There is evidence that variance in medication concentrations has led to patient harm
- Several factors contribute to this variance
- Reduction of variance is the goal of the medication standardization effort

# Physician anesthesiologists

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- Trained to understand and act upon individual clinical needs
- Provide care to patients in a variety of settings and work collaboratively with surgeons and other physicians, nurses, nurse anesthetists, pharmacists, and other clinical and non-clinical staff
- As leaders within these facilities, anesthesiologists have a unique role to play in decreasing the risk of a patient experiencing adverse medication events



# Medication Errors

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- Frequency of medication errors in the perioperative environment: 1 out of 20 administrations
- Observed error rates are higher than self-reported rates
- Types of Errors: 1) incorrect dosing 2) substitution 3) contraindicated drug administration 4) timing errors
- Incorrect dosing was the most common type of error



# Drug Concentration Standardization

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- core set of actions that protect patients
- developing the fewest number of drug concentrations to provide safe clinical care
- Goal: Reduction of variance in concentrations in an effort to decrease medication errors

# Standardization

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- may include a limited, set of concentrations for medications that have been labeled as high-alert or known to have produced a significant number of adverse events

# Team Effort

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- Local facilities may seek to harmonize such concentrations with pharmacy services and other stakeholders and within their drug libraries
- Balance the objective of reducing the risk of patient harm with pragmatic considerations, such as strength and quality of evidence, feasibility and economic burden





# Ten Medications to Standardize

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National and local efforts should consider standardizing the following medications given intravenously in the perioperative environment

1. Insulin
2. Epinephrine
3. Norepinephrine
4. Phenylephrine
5. Heparin
6. Ketamine
7. Dexmedetomidine
8. Hydromorphone
9. Lidocaine
10. Remifentanyl

# Drug Shortages

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With the efforts of drug concentration standardization, federal agencies, manufacturers and other stakeholders should be vigilant and protect against drug shortages that may emerge from but not be limited to:

- pharmaceutical company consolidation
- vulnerable supply chains
- key supplies of drugs being limited to a single manufacturer with a lack of back-up production
- reliance on a single production facility



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