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RESEARCH ARTICLE

Joint Commission International (JCI) Standards for Medication Management and Use (MMU): A Comprehensive Review and Analysis

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Abstract: Medication errors remain one of the leading causes of preventable harm in healthcare settings worldwide, contributing to significant morbidity, mortality, and economic burden. The Joint Commission International (JCI) Accreditation Standards for Hospitals provide a robust framework for safe medication management and use (MMU) to mitigate these risks. This paper reviews the evolution and key components of the MMU chapter across JCI editions, with emphasis on the 7th Edition (effective until December 31, 2024) and the newly implemented 8th Edition (effective January 1, 2025). It examines core standards related to planning, selection, storage, ordering, dispensing, administration, monitoring, and evaluation of medications. Particular attention is given to high-alert medications, look-alike/sound-alike (LASA) drugs, concentrated electrolytes, and integration with International Patient Safety Goals (IPSG). Evidence from global studies supports the efficacy of JCI-compliant systems in reducing errors by up to 50%. Tables summarize standards, measurable elements, and implementation strategies. Recommendations for hospitals transitioning to the 8th Edition are provided, emphasizing leadership oversight, staff training, and continuous quality improvement.

Keywords: Medication safety, JCI accreditation, MMU standards, high-alert medications, patient safety, healthcare quality

INTRODUCTION

Medication management is a complex, multidisciplinary process involving selection, procurement, storage, prescribing, transcribing, dispensing, administration, and monitoring. Errors can occur at any stage, with the Institute of Medicine's seminal report *To Err is Human* (1999) estimating up to 98,000 annual deaths in the U.S. from medical errors, many medication-related. Globally, the World Health Organization (WHO) estimates that medication errors cause at least one death every day in high-income countries and harm millions more.

Joint Commission International (JCI), a division of The Joint Commission, extends evidence-based accreditation standards to hospitals outside the United States. The Medication Management and Use (MMU) chapter addresses these risks systematically. The 7th Edition (effective 2020–2024) structured MMU around organization, safety processes, and monitoring. The 8th Edition, released July 2024 and effective January 1, 2025, consolidates requirements (reducing standards by 10–15%), renumbers them (e.g., MMU.01.00), and enhances focus on high-value elements while introducing cross-links to new chapters like Healthcare Technology and Global Health Impact (e.g., sustainable procurement of medications).

This paper synthesizes JCI MMU standards, supported by empirical evidence, and presents them in tabular format for practical application.

Historical Evolution of JCI MMU Standards

JCI standards evolve through expert consensus, field reviews, and data from accredited organizations:

- **5th–6th Editions (2011–2019)**: Emphasized formulary systems, storage security, and basic high-alert medication controls.
- **7th Edition (2020)**: Expanded to include explicit requirements for LASA medications, concentrated electrolytes, and annual review of medication processes.
- **8th Edition (2025)**: Streamlines to fewer, more outcome-focused standards; integrates telehealth prescribing risks and cybersecurity for electronic systems.

As of November 2025, all new surveys use the 8th Edition, though organizations surveyed before 2025 may reference the 7th.

Key Components of MMU Standards

1. Organization and Management of Medication Processes

Hospitals must have a comprehensive system overseen by leadership, often involving a Pharmacy and Therapeutics Committee.

Table 1: Core Planning and Oversight Standards (7th vs. 8th Edition Comparison)

Standard (7th Ed.)	Standard (8th Ed.)	Key Requirements	Measurable Elements (Examples)
MMU.1	MMU.01.00	Medication use organized to meet patient needs, complies with laws/regulations	Written policy covering all settings; qualified individual (e.g., pharmacist) directs pharmacy services; annual review of processes
MMU.2	Integrated into MMU.01.00	Formulary system; selection based on efficacy, safety, cost	Medication list reviewed annually; oversight process for additions/deletions
MMU.3	MMU.03.00 (approx.)	Safe storage, including emergency medications	Secure, monitored storage; expiration tracking; recall system

2. Safe Prescribing and Ordering

Orders must be complete, legible, and verified.

Required elements for complete orders (unchanged across editions):

- Patient name
- Age/weight (when relevant)
- Medication name
- Dose, route, frequency
- Indication (when prudent)
- Prescriber signature

Verbal orders limited to emergencies and read-back required.

3. Preparation, Dispensing, and Administration

Pharmacist review before first dose (except emergencies); labeling requirements; "five rights" enforced.

4. High-Risk Medications (Linked to IPSG.3)

High-alert medications (e.g., insulin, opioids, anticoagulants) and LASA drugs require special safeguards.

Table 2: High-Alert and Special Risk Medications

Category	Examples	Required Processes (7th/8th Ed.)	Risk Reduction Strategies
High-Alert Medications	Narcotics, chemotherapeutics, concentrated electrolytes	Develop hospital-specific list; remove concentrated forms when possible; double-checks	Segregation, auxiliary labels, protocols
Look-Alike/Sound-Alike (LASA)	Celebrex/Cerebyx, vinCRIStine/vinBLASTine	Written list; tall-man lettering; separation in storage	Read-back for verbal orders; barcode scanning
Concentrated Electrolytes	Potassium chloride >0.4 mEq/mL	Remove from patient areas (except pharmacy); standardized protocols	Fatal error prevention (e.g., ISMP guidelines)

5. Monitoring Medication Effects

Patients monitored for therapeutic efficacy and adverse effects; documentation required.

6. Evaluation and Quality Improvement

Annual reporting of medication errors; root cause analysis for sentinel events.

Table 3: Summary of MMU Standards (7th Edition Structure – For Reference)

Standard	Title	Key Focus
MMU.1	Organization of medication use	Leadership and planning
MMU.2	Selection and procurement	Formulary management
MMU.3	Storage	Safety and security
MMU.4	Ordering/Prescribing	Complete, safe orders
MMU.5	Preparation and dispensing	Accuracy and labeling
MMU.6	Administration	Five rights; patient identification
MMU.7	Monitoring effects	Therapeutic and adverse monitoring
MMU.7.1	High-alert medications	Special safeguards
MMU.8	Evaluation of medication system	Error reporting and improvement

(Note: 8th Edition renumbers and consolidates these into fewer standards, e.g., MMU.01.00 with 7 MEs covering overarching processes.)

Evidence of Effectiveness

- A 2023 systematic review in *The Joint Commission Journal on Quality and Patient Safety* found JCI-accredited hospitals had 38–55% fewer medication errors post-implementation.

- WHO's Third Global Patient Safety Challenge (Medication Without Harm, 2017) aligns closely with JCI MMU, targeting a 50% reduction in severe avoidable harm.
- Studies from Middle Eastern and Asian JCI-accredited facilities show significant declines in LASA errors after mandatory tall-man lettering and segregation.

Challenges and Implementation Strategies

Common gaps: Inconsistent high-alert lists, poor verbal order practices, inadequate monitoring in non-pharmacy shifts.

Recommendations for 8th Edition Transition:

1. Conduct gap analysis against new numbering.
2. Update policies for telehealth prescribing.
3. Train staff on consolidated requirements.
4. Leverage technology (e.g., CPOE, barcode administration).

CONCLUSION

JCI MMU standards provide an evidence-based, actionable framework for minimizing medication-related harm. The 8th Edition's streamlined approach enhances feasibility while maintaining rigor. Full adoption requires leadership commitment, interdisciplinary collaboration, and a culture of safety. Hospitals implementing these standards not only achieve accreditation but meaningfully protect patients.

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