

Indicator-driven improvement must be grounded in high-quality data. Reliability studies of quality indicators show that clear operational definitions, structured assessment manuals, and informatics support (e.g., mobile nursing systems) significantly enhance data quality and facilitate seamless integration of risk screening, ongoing monitoring, and documentation into daily nursing workflows. This implies that nursing managers should prioritize organizational capabilities such as standardized indicator definitions, automated data capture, and visualized feedback, rather than using NSIs solely for outcome reporting or performance appraisal.

Transparent reporting and benchmarking mechanisms can strengthen managerial attention and drive resource allocation. Experiences from regional and national NSI programs indicate that transparent reporting of falls, pressure injuries, and complication-related mortality can prompt leadership engagement, targeted resource investment, and focused training-particularly in settings with high concentrations of adverse events, such as geriatric psychiatry and intensive care units. Therefore, improving nursing safety for hospitalized older patients requires not only bedside-level interventions but also coordinated organizational governance, resource commitment, and informatics infrastructure.

Looking ahead, NSIs are expected to evolve from static monitoring tools into dynamic quality improvement engines spanning the continuum of geriatric care. Recent studies advocate expanding indicator systems beyond traditional safety events to include autonomy, participation in decision-making, quality of end-of-life care, social participation, and patient-reported outcomes (PROs), thereby enabling NSIs to more comprehensively reflect the person-centered values of geriatric nursing. Concurrently, methodological advances-such as Delphi consensus methods, theory-driven frameworks, cross-national scoping reviews, and stakeholder engagement-are laying the groundwork for developing more standardized, geriatric-specific indicator portfolios and supporting localized development and validation across diverse contexts, including low- and middle-income countries.

Digitalization and intelligent technologies will further amplify the value of NSIs. Integrating NSIs into electronic health records, mobile nursing information systems, and national quality registries has the potential to enable real-time feedback, predictive analytics for identifying high-risk older patients, and the creation of learning networks for sharing effective nursing practices across institutions. At the same time, the risk of “indicator narrowing” must be acknowledged. Scholars emphasize the need to further clarify indicator definitions, strengthen the evidence base for indicators that are truly nursing-sensitive, and ensure that indicator sets capture the breadth of nursing practice rather than focusing solely on adverse events. Accordingly, future priorities lie in advancing standardization and digital embedding while simultaneously integrating person-centered geriatric values-such as function, participation, and autonomy-into indicator systems, thereby achieving sustained improvement toward the dual goals of safety and functional preservation.

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#### **Conflict of Interest Disclosure**

The authors affirm that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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