

A second prominent issue concerns the limited alignment between existing indicator systems and the complex needs of older patients. Review studies highlight that inconsistent NSI definitions, heterogeneous data collection methods, and insufficient evidence of “nursing sensitivity” for some commonly used indicators constrain effective benchmarking and interpretation in geriatric populations. National NSI programs often prioritize a small set of complications while inadequately covering cognitive, psychosocial, and functional outcomes—dimensions that are central to safety and experience in older adults. Furthermore, research on care transitions suggests that adverse events occurring after discharge to nursing facilities are poorly explained by existing institution-level quality scores, implying that critical nursing processes and contextual factors are not fully captured by current quality measurement tools. Overall, although NSIs are powerful management instruments, their potential remains constrained by measurement gaps, reporting culture barriers, and the lack of geriatric-specific, practice-oriented indicators and a supportive safety culture.

5 Development and Implementation of Nursing Quality Improvement Interventions

5.1 Establishing an NSI-oriented quality management mechanism

Building a nursing quality management mechanism centered on nursing-sensitive indicators (NSIs) represents a key pathway for driving continuous improvement in adverse events among hospitalized older patients. Concept analyses and studies on indicator application indicate that, for NSIs to fulfill a true governance function, they must be supported by standardized definitions, robust health information systems, and formal reporting linkages to management, thereby enabling routine extraction of nursing performance data, trend analysis, and cross-ward or cross-institutional comparison. In terms of indicator configuration, research from long-term care and residential aged care settings internationally suggests that structured NSI portfolios—such as falls, pressure injuries, infections, dehydration, medication-related problems, pain, and functional decline—can highlight high-risk domains and guide prioritization of quality improvement efforts, demonstrating strong transferability and governance potential (Tevik et al., 2023; Caughey et al., 2025). Accordingly, in the hospital geriatric inpatient context, it is recommended that NSIs closely related to patient safety be incorporated into nursing quality management systems, with explicit definitions, numerators and denominators, data sources, and evaluation cycles specified. This enables the formation of institutionalized and auditable management processes and supports continuous improvement through a closed-loop cycle of “indicator monitoring-problem identification-intervention implementation-outcome evaluation”.

With respect to governance structures and operational mechanisms, a mature NSI-oriented system also requires scientifically grounded indicator selection, risk adjustment, and root cause analysis (RCA) processes. Reviews of quality improvement in long-term care note that existing indicators often emphasize safety and effectiveness but may insufficiently capture the breadth of older adults’ needs; therefore, expert consensus methods are needed to optimize indicator sensitivity and interpretability (Caughey et al., 2025). Modified Delphi studies demonstrate that expert panels comprising clinicians, researchers, and family members or caregivers can help prioritize indicators that are genuinely nursing-sensitive, high-incidence or high-risk, and responsive to changes in nursing quality (Tevik et al., 2023). In parallel, governance structures such as multidisciplinary quality committees and dedicated risk management or infection control leads should be established to interpret NSI trends, organize RCAs, and ensure that evidence is translated into revisions of nursing workflows, staffing decisions, and targeted quality improvement (QI) initiatives, rather than remaining at the level of passive reporting.

Informatics support is a critical enabler of effective NSI-oriented management. Embedding NSIs within electronic health record systems and deploying visual dashboards can facilitate real-time or periodic monitoring of adverse events in older patients, enable inter-institutional benchmarking, and provide transparent feedback, thereby reducing bias associated with manual data collection and improving data usability (Caughey et al., 2025). In management practice, NSI results can be integrated into unit-level goal management, with regular feedback to nursing teams on trends and benchmarking positions, and intensified monitoring and resource allocation for high-risk units or indicators to enhance the precision and efficiency of improvement efforts (Tevik et al., 2023).