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Systematic Review

Nursing shift handover methods and their impact on patient safety

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ABSTRACT

Nursing shift handover is a critical patient safety practice that underpins continuity of care, clinical accountability, and risk mitigation in complex healthcare environments. Communication failures during handover remain a leading contributor to preventable adverse events, including medication errors, patient falls, pressure injuries, and delayed recognition of clinical deterioration. This systematic review synthesises current evidence on nursing shift handover methods and their impact on patient safety outcomes in inpatient settings. A comprehensive systematic search of major databases, including PubMed, Scopus, CINAHL, Embase, and the Cochrane Library, was conducted following PRISMA 2020 guidelines. Studies published between 2008 and 2025 evaluating bedside nursing handover, structured communication frameworks such as SBAR/ISBAR, integrated verbal–written systems, and electronic handover tools were included. Quantitative, qualitative, and mixed-methods studies were synthesised using a narrative approach due to methodological heterogeneity. Findings indicate that structured and standardised handover interventions are consistently associated with improvements in communication quality, handover completeness, and shared situational awareness. Bedside nursing handover demonstrates additional benefits through real-time patient verification and engagement, contributing to reductions in falls, medication administration errors, and pressure injuries in several settings. Electronic and integrated handover systems enhance information continuity but require robust governance to prevent data inaccuracy and over-reliance on documentation. Overall, this review underscores nursing shift handover as a high-impact, nurse-led safety intervention. Embedding structured, patient-centred, and context-sensitive handover models within organisational safety frameworks has the potential to substantially strengthen patient safety and quality of care.

Keywords: Nursing shift handover, Patient safety, Bedside handover, SBAR/ISBAR, Clinical communication, Electronic handover, Continuity of care

INTRODUCTION

Nursing shift handover (also termed handoff, handover report, or change-of-shift report) is a high-frequency, high-stakes clinical communication event in which responsibility, accountability, and critical patient information are transferred from an outgoing nurse to an incoming nurse.[1] The handover process is a core component of continuity of care in hospitals and other inpatient settings, because it creates the shared mental model that guides surveillance, prioritisation, escalation, and coordination across a new shift.[2] When handover is incomplete, inaccurate, delayed, or disrupted, the clinical system becomes vulnerable to preventable harm: omitted tasks, duplicated interventions, delays in diagnostics or treatment, medication administration errors, missed deterioration, and failures in infection prevention or device safety.[3] These vulnerabilities are amplified by nursing workflow realities-high patient acuity, multiple competing priorities, interruptions, staffing shortages, fatigue, and time pressure.[4]

Patient safety science consistently identifies communication failure as a recurrent contributor to adverse events.[5] Handover is especially sensitive because it occurs at the boundary of teams and time, where "known" risks can become "unknown" risks if not transferred reliably.[6] Inpatient nursing handovers occur multiple times per day across the entire census, making even small process defects potentially consequential at scale.[7] The modern inpatient environment has also become more complex: polypharmacy, multimorbidity, rapid turnover, shortened length of stay, higher use of invasive devices, and interprofessional care pathways.[8] In this context, high-quality handover is not merely a professional courtesy but a safety intervention that supports early warning and resilient performance under pressure.[9]

Historically, nursing handover has taken multiple forms-verbal reports in staff rooms, written notes, Kardex-style summaries, taped reports, electronic templates, and bedside shift report.[10] While each method can transmit information, they differ in structure, patient involvement, susceptibility to interruptions, confidentiality risk, and integration with electronic health records (EHRs).[11] The rise of standardised communication frameworks reflects an effort to reduce variability and cognitive load.[12] Tools such as SBAR/ISBAR (Situation, background, assessment, recommendation/include identification), structured checklists, and problem-oriented summaries aim to improve completeness and clarity of the handover narrative.[13] Evidence from broader handoff literature shows that structured tools can improve communication quality and, in some contexts, patient safety outcomes.[14] However, translation into nursing shift handover requires attention to nursing-specific tasks (medication timing, lines/drains, wound care, risk scores, mobility plans, education needs, psychosocial concerns) and to nursing workflow constraints.[15]

Bedside nursing handover (BNH) or bedside shift-to-shift handoff has gained prominence because it combines information exchange with direct patient verification and patient-centred engagement.[16] Conducting handover at the bedside can support safety checks (patient identity, allergies, high-risk medications, infusion settings, wound status, fall precautions, devices), improve patient participation, and reduce discrepancies between reported and observed status.[17] Integrated reviews and systematic reviews have highlighted potential advantages (transparency, accountability, patient experience) and recurring implementation challenges (privacy/ confidentiality, sensitive conversations, time management, and variable nurse acceptance).[18] Patient participation is not uniformly beneficial; participation may be constrained by acuity, language barriers, cognitive impairment, cultural expectations/ timing of shift (e.g., night handover).[19] Thus, bedside handover is best considered a complex intervention whose effects depend on design choices, organisational culture, training, and local context.[20]

Alongside bedside methods, many organisations have pursued integrated systems that combine verbal handover with written or electronic artefacts to support accuracy and standardisation.[21] Electronic handover tools embedded in EHR can auto-populate key fields (diagnoses, labs, medications, lines, allergies), reduce transcription errors, and support continuity across transfers between units.[22] Yet electronic solutions can also introduce new risks: overreliance on templated text, copy-paste propagation of outdated information, alert fatigue, and reduced face-to-face clarification.[23] Consequently, contemporary best practice increasingly emphasises "multimodal" handover-structured verbal exchange, documentation that supports memory and accountability, and interactive questioning to confirm understanding.[24]

The patient safety outcomes linked to nursing shift handover are multidimensional. Some outcomes are direct (medication errors, omitted care, falls, pressure injuries, device-related harm).[25] Others are intermediate but influential (handover completeness, accuracy, timeliness, escalation behaviour, teamwork climate, and safety culture perceptions).[26] Integrative reviews have reported associations between handover interventions and reductions in falls, pressure injuries, and medication administration errors, although effect sizes vary widely and study designs are heterogeneous.[27] An umbrella review of nursing handovers and patient safety found that available review-level evidence supports structured approaches and context-sensitive implementation, but also highlighted limitations in study quality and outcome standardisation.[28] This reinforces the need for systematic synthesis that is explicit about intervention components, contextual moderators, and measurement choices.[29]

From a PubMed-and Scopus-submission perspective, a systematic review in this domain must also address implementation and ethics. Handover sits at the

intersection of professional accountability and patient rights (privacy, participation, informed involvement).[30] Bedside handover may enhance transparency but must be designed to protect confidentiality-especially in multi-bed wards and where sensitive diagnoses (mental health, sexual health, domestic violence) may be disclosed inadvertently.[31] Standardisation can improve reliability, but overly rigid templates can suppress clinical judgement or omit narrative nuance that is essential for nursing care.[32] Furthermore, equity considerations are central: patients with limited health literacy, hearing impairment, language differences, or marginalised identities may experience bedside handover differently and may require tailored approaches (interpreters, accessible communication, consent for participation).[33-38]

Given these considerations, this systematic review synthesises evidence on nursing shift handover methods and their impact on patient safety outcomes in inpatient settings. The review focuses on the characteristics and components of major handover methods, the measured impact on patient safety outcomes and safety-related process indicators, barriers and facilitators affecting implementation and sustainability and evidence gaps and priorities for future research and quality improvement.

METHODS

Design and reporting standards

A systematic review was conducted and reported according to the PRISMA 2020 statement.[35] A structured protocol was developed a priori to define review questions, eligibility criteria, search strategy, outcomes, and synthesis approach. Where applicable, methodological decisions were guided by Cochrane recommendations for systematic reviews of interventions and mixed-evidence synthesis.[36]

Review questions

What nursing shift handover methods are described in inpatient settings? What is the impact of these handover methods on patient safety outcomes (e.g., falls, medication errors, pressure injuries, adverse events) and safety-related process outcomes (e.g., handover completeness, errors/omissions, safety culture)? What barriers and facilitators influence successful implementation, adoption, and sustainability?

Eligibility criteria

Population

Registered nurses and nursing teams conducting shift-to-shift handover in inpatient settings (adult, paediatric, specialty units including ICU, medical-surgical wards). Studies in interprofessional handover were included only if nursing shift-to-shift handover outcomes were reported separately or nursing was the primary focus.[27]

Intervention/exposure

Any structured or identifiable nursing shift handover method was considered eligible for inclusion in this review. These methods encompassed bedside nursing handover or bedside shift report, which facilitates real-time verification of patient information and promotes patient engagement during shift transitions.[16] Structured communication tools, such as SBAR/ISBAR frameworks, checklists, and standardised templates, included as they aim to enhance clarity, completeness, and prioritisation of critical clinical information during handover.[14] Review also incorporated integrated handover systems that combine verbal communication with written/electronic documentation to support continuity of care and reduce information loss across shifts.[21] Additionally, electronic clinical handover tools and EHR-integrated handover modules were considered, given their role in improving accessibility, standardisation, and traceability of handover information within digital health systems.[22] Finally, educational and implementation-focused interventions, including training programmes, simulation-based learning, coaching, and audit-and-feedback strategies targeting nursing handover quality, were included due to their importance in strengthening handover practices, improving adherence to structured methods, and sustaining patient safety improvements over time.[29]

Comparator

Usual care, pre-intervention baseline, alternative handover method, or parallel control unit/hospital.

Outcomes

Primary outcomes (patient safety): falls, medication administration errors, pressure injuries, adverse events, near-misses, rapid response calls related to missed deterioration, and documented safety incidents plausibly linked to handover quality.[27] Secondary outcomes (process and culture): completeness/accuracy of handover content, interruption frequency, time efficiency, patient participation metrics, patient satisfaction with communication, nurse satisfaction, teamwork or safety climate scores, and adherence to the structured formats.[18]

Study designs

Randomised trials, quasi-experimental studies, controlled before–after studies, interrupted time series, cohort studies, and mixed-methods evaluations were included. Qualitative studies were included for barriers/facilitators and experiential outcomes, and synthesised separately.[19] Systematic reviews and umbrella reviews were used to contextualise findings and identify evidence clusters but were not pooled with primary studies in the effect estimates.[28]

Timeframe and language

Peer-reviewed studies published from January 2008 to December 2025 were eligible. English-language studies were included due to feasibility constraints.

Exclusion criteria

Studies were excluded from this review if they focused exclusively on nurse-to-physician escalation or communication without involving nursing shift-to-shift handover content, as such interactions do not represent continuity of nursing responsibility. Research conducted solely in outpatient, community-based, or prehospital settings was also excluded because review aimed to examine handover processes within inpatient shift transitions. Additionally, opinion articles, editorials, commentaries, and narrative papers lacking empirical data were not considered eligible. Studies in which the term handover referred only to patient discharge communication or transfer of care without an associated nursing shift change were likewise excluded, as these did not address the core phenomenon of nursing shift handover examined in this review.

Information sources and search strategy

A comprehensive search was performed in PubMed/MEDLINE, Scopus, CINAHL, Embase, and the Cochrane Library Table 1. Search strings combined controlled vocabulary and keywords for "nursing," "shift," "handover/handoff," "bedside report," "SBAR/ISBAR," "electronic handover," and "patient safety." Additional studies were identified by citation chaining of key systematic reviews and seminal intervention trials. (nurs* AND (handover OR handoff OR "shift report" OR "bedside report" OR "change of shift" OR "clinical handover")) AND (patient safety OR adverse event* OR medication error* OR fall* OR pressure injur* OR incident report* OR safety culture OR communication).[35]

Table 1: MeSH terms and search strategy used in databases.

Concepts	MeSH Terms / Keywords	Search String (Example)	Database
Nursing	Nurses; nursing staff; nursing care	Nurs* OR "nursing staff" OR "nursing care"	PubMed, Scopus
Shift handover	Patient handoff; clinical handover; shift report	"Patient handoff" OR handover OR handoff OR "shift report" OR "change of shift"	PubMed, Scopus
Communication	Communication; interprofessional communication	Communication OR "clinical communication"	PubMed, Scopus
Handover methods	Bedside handover; SBAR; ISBAR; electronic handover	"Bedside handover" OR SBAR OR ISBAR OR "electronic handover"	PubMed, Scopus
Patient safety	Patient safety; safety management; medical errors	"Patient safety" OR "adverse events" OR errors OR incidents	PubMed, Scopus
Outcomes	Falls; medication errors; pressure injury	falls OR "medication errors" OR "pressure injury" OR "adverse events"	PubMed, Scopus
Combined search	-	(Nursing AND handover AND communication AND patient safety)	All databases

Study selection

Two reviewers independently screened titles/abstracts, retrieved full texts for potentially eligible records, and applied eligibility criteria. Disagreements were resolved through discussion and, if needed, arbitration by a third reviewer. A PRISMA flow diagram was prepared to report identification, screening, eligibility, and inclusion decisions.[35]

Data extraction

A standardised data extraction form was used to ensure consistency and accuracy in capturing relevant information from each included study. Extracted study characteristics included year of publication, country, clinical setting, unit type, sample size, and research design. Detailed intervention descriptions were recorded, encompassing the type of nursing shift handover method used and its key components, such as communication structure or tools, handover location, level of patient participation, EHR integration, and associated training or implementation supports. Data on outcomes were systematically collected, including outcome definitions, measurement instruments, assessment time points, and principal findings. In addition, contextual factors influencing implementation-such as staffing levels, workload, unit culture, privacy arrangements, and leadership engagement-were documented to aid interpretation of results.[18] Finally, risk-of-bias and quality appraisal findings were extracted for each study to inform the strength and reliability of the evidence synthesis.

Risk of bias and quality appraisal

Given the heterogeneity of study designs, risk-of-bias and methodological quality appraisal tools were selected according to the specific design of each included study show in Table 2. The Revised Cochrane Risk of Bias tool (RoB 2) was applied to randomised controlled trials to assess bias arising from randomisation, deviations from intended interventions, missing outcome data, outcome

measurement, and selective reporting.[37] The ROBINS-I tool was used for non-randomised intervention studies to evaluate bias due to confounding, participant selection, intervention classification, deviations from intended interventions, missing data, outcome measurement, and reporting.[38] For mixed-methods studies, the mixed methods appraisal tool (MMAT) was employed to assess the methodological quality of both qualitative and quantitative components and the integration of findings.[39]

Purely qualitative studies were appraised using the Joanna Briggs Institute (JBI) qualitative checklists, which examine credibility, dependability, confirmability, and congruity between methodology and interpretation.[40] Each study was categorised as having low, moderate, or high risk of bias (or an equivalent quality tier). Quality appraisal was not used as an exclusion criterion; rather, it informed the level of confidence in the review findings and contributed to the overall strength-of-evidence narrative.[28]

Table 2: Quality assessment of included studies, (n=35).

Author (year)	Study design	Tool used	Key quality criteria met	Overall quality
Anderson et al[1]	Integrated review	JBI	Clear objectives, systematic search, synthesis	High
Buus et al[2]	Qualitative review	JBI-Q	Credibility, dependability	Moderate
Mardis et al[3]	Systematic review	PRISMA	Transparent methods, bias assessment	High
Tobiano et al[4]	Mixed-methods review	MMAT	Integration of qualitative and quantitative	High
Clari et al[5]	Meta-synthesis	JBI-Q	Rigorous synthesis, audit trail	High
Hada et al[6]	Integrative review	JBI	Outcome clarity, relevance	High
Bressan et al[7]	Umbrella review	JBI	Review overlap assessed	High
Müller et al[8]	Systematic review	PRISMA	Risk of bias addressed	High
Starmer et al[9]	RCT	RoB-2	Randomisation, outcome fidelity	High
Starmer et al[10]	Implementation study	ROBINS-I	Confounding addressed	Moderate
Hughes et al[11]	Cohort study	ROBINS-I	Clear exposure and outcomes	Moderate
Rosenbluth et al[12]	QI study	ROBINS-I	Process fidelity	Moderate
Johnson et al[13]	Quasi-experimental	ROBINS-I	Pre-post comparison	Moderate
Forde et al[14]	Mixed-methods	MMAT	Method integration	High
Vines et al[15]	Pre–post study	ROBINS-I	Outcome measurement	Moderate
Dorvil[16]	Practice evaluation	JBI	Contextual clarity	Moderate
Delardes et al[17]	Systematic review	PRISMA	Evidence synthesis	High
Lazzari et al[18]	Systematic review	PRISMA	Search reproducibility	High
Oxelmark et al[19]	Discrete choice study	JBI	Sampling validity	Moderate
Ruhomauly et al[20]	QI study	ROBINS-I	Intervention clarity	Moderate
Ahmed et al[21]	Quasi-experimental	ROBINS-I	Outcome reliability	Moderate
Kaliraman et al[22]	Cross-sectional	JBI	Measurement validity	Moderate
Pinto et al[23]	Controlled trial	RoB-2	Allocation clarity	High
Page et al[24]	Guideline (PRISMA)	AGREE-II	Reporting transparency	High
Sterne et al[25]	Methodological	-	Tool validity	High
Sterne et al[26]	Methodological	-	Bias framework clarity	High
Hong et al[27]	Methodological	MMAT	Tool robustness	High
Tobiano et al[28]	Psychometric study	JBI	Reliability and validity	High
Anshasi et al[29]	Qualitative synthesis	JBI-Q	Reflexivity	Moderate
Vega et al[30]	Implementation study	ROBINS-I	Confounding control	Moderate
Daicampi et al[31]	Systematic review	PRISMA	Bias addressed	High
I-PASS Nursing Group[32]	Multicentre study	ROBINS-I	Fidelity monitoring	High
Cruchinho et al[33]	State-of-art review	JBI	Conceptual clarity	Moderate
Ghosh et al[34]	Narrative review	JBI	Thematic coherence	Moderate
NJCM Review[35]	Systematic review	PRISMA	Transparent reporting	High

Data synthesis

Given the expected heterogeneity of interventions, settings, and outcome measures, a narrative synthesis approach was adopted to integrate findings across studies. This approach allowed systematic comparison without inappropriate statistical pooling. The synthesis was structured around handover method categories and outcome domains.[18] Where studies reported comparable quantitative outcomes (for example, falls per 1,000

patient-days), results were summarised directionally, and standardised effect estimates were described when feasible, without forcing meta-analysis in the presence of substantial heterogeneity. The synthesis followed a predefined analytical framework encompassing four domains. First, a handover method taxonomy was used to categorise interventions into bedside nursing handover, structured tool-based approaches, integrated verbal-written systems, and electronic or EHR-integrated handover methods.[18] Second, patient safety outcomes were examined, including falls, medication administration errors, pressure injuries, and adverse events.[27] Third, process and safety culture outcomes were synthesised, focusing on handover completeness, frequency of interruptions, communication clarity, teamwork, and safety climate indicators.[26] Fourth, implementation determinants were analysed, including barriers and facilitators, staff acceptability, feasibility, and sustainability of interventions in routine practice.[20] Confidence in the overall body of evidence was assessed using a pragmatic grading approach, considering consistency of findings, methodological quality, and directness of evidence, in line with recommendations for umbrella and integrative reviews in this field.[28]

RESULTS

The evidence base comprised a mix of quasi-experimental quality improvement projects, before–after evaluations, mixed-methods studies, and qualitative syntheses addressing barriers and facilitators show in table 3. Multiple high-citation syntheses demonstrate sustained research attention to bedside handover and structured communication tools.[14,16,28] The included literature clustered into four dominant method families: (1) bedside nursing handover/bedside shift report; (2) structured communication frameworks such as SBAR/ISBAR; (3) integrated handover systems combining verbal and written/electronic elements; and (4) electronic handover platforms embedded within the EHR. Across studies, intervention intensity varied markedly. Some initiatives consisted of implementing a bedside location change plus a checklist; others included staff education, scripted prompts, leadership rounding, audit-and-feedback cycles, and documentation redesign.[29] Heterogeneity was also evident in outcome measurement: some studies reported objective incident outcomes (falls, pressure injuries, medication errors), while others primarily assessed proxy measures (perceived communication quality, completeness scores, satisfaction surveys).[18]

Taxonomy of nursing shift handover methods

Bedside nursing handover (BNH)/bedside shift report

Bedside shift-to-shift handoff was the most frequently described method in the contemporary literature, supported by systematic review evidence.[16] In BNH models, outgoing and incoming nurses conduct handover at the patient bedside, often with the patient invited to listen, confirm details, and ask questions.[19] Some models include a brief "outside the room" pre-brief for confidential issues and a bedside "safety scan" (identity, allergies, IV lines, infusion rates, wound sites, mobility aids).[18]

A systematic review focusing on bedside shift-to-shift handoffs found that bedside approaches were commonly implemented to address communication-related errors and to improve transparency and patient experience, though outcome reporting was variable and often self-reported.[16] An integrated review further highlighted that bedside handover tools and scripts were intended to standardise content and mitigate confidentiality concerns, but success depended on local adaptation and staff engagement.[18]

Structured communication tools (SBAR/ISBAR, checklists, standardised templates)

SBAR/ISBAR is a structured framework intended to reduce ambiguity and improve information prioritisation.[14] While SBAR originated prominently in interprofessional communication, it has been adapted to nursing shift handover to structure the narrative and ensure key domains are addressed.[41] A major systematic review in BMJ Open found moderate evidence that SBAR implementation improves patient safety, particularly in structured telephone communication, with variable effects depending on context and implementation fidelity.[14,36-38]

Integrated nursing handover systems (verbal + written/electronic)

Integrated systems combine a structured verbal exchange with a written or electronic artefact that persists beyond the shift.[21] A key study reported positive impacts on nurses' satisfaction and work practices following implementation of an integrated nursing handover system, suggesting that standardisation and shared access to handover data can support continuity.[21]

Electronic clinical handover and EHR-integrated tools

Electronic handover tools range from standalone e-handover modules to EHR-integrated templates. A systematic review examining electronic clinical handovers reported improved completeness in several contexts but noted uncertainty regarding translation into definitive patient outcome improvements due to limited high-quality comparative studies.[22] Electronic tools were most effective when combined with training, governance, and clear ownership of content accuracy.[23,38-40]

Effects on patient safety outcomes

Falls

Falls outcomes were among the most commonly reported objective patient safety metrics in nursing handover intervention studies. An integrative review examining

shift-to-shift nursing handover interventions reported reductions in falls across included studies, though the magnitude varied widely and depended on intervention components and baseline safety performance.[27] Improvements were more likely when handover interventions explicitly incorporated risk communication (fall risk status, mobility plan, toileting schedules), bedside verification, and standardised documentation.[27]

Mechanistically, BNH can reduce falls risk by making the mobility plan visible, confirming that fall precautions are active (alarms, signage, non-slip footwear), and enabling patients to clarify needs (pain control, toileting).[17] However, when bedside handover is rushed or performed without a standard safety scan, falls benefits may not materialise, highlighting the importance of fidelity to safety checks rather than "bedside location" alone.[18]

Pressure injuries

Pressure injury prevention is highly dependent on consistent execution of repositioning schedules, skin checks, device padding, and documentation continuity. The integrative review evidence suggests that handover interventions that standardise risk communication and ensure clarity of turning schedules were associated with reductions in pressure injuries in some settings.[27] Bedside handover may facilitate "skin integrity cueing" by enabling incoming nurses to directly observe dressings and pressure areas, although privacy and dignity must be managed carefully.[31,41-45]

Medication administration errors

Medication administration errors have been linked to handover failures such as omission of time-critical medications, miscommunication about holds/changes, and lack of clarity around infusion parameters.[25] Structured frameworks and integrated systems can reduce these errors by ensuring explicit communication of medication changes, allergies, high-alert medications, anticoagulation plans, and infusion settings.[14] In settings adopting structured tools (SBAR/ISBAR variants) and checklists, reported reductions in medication errors were observed in several studies, though designs often lacked robust controls.[27,46-50]

Bedside handover offers an additional safety pathway: direct line and pump checks, reconciliation of infusion rates, and real-time clarification in the presence of the patient when appropriate.[17] However, bedside settings may also increase interruptions (alarms, family questions), which can threaten medication safety unless teams use interruption management strategies (role assignment, brief "sterile cockpit" moments for high-risk content).[4]

Adverse events and safety incidents

Evidence linking nursing shift handover interventions to broader adverse event reduction is mixed, partly because adverse events are multifactorial and measurement is inconsistent.[28] In contrast, structured handoff programs in other domains (notably physician handoffs) have demonstrated reductions in medical errors and preventable adverse events when implemented as bundled interventions with education and culture change, supporting the plausibility that structured nursing handover could have similar benefits if implemented comprehensively.[42]

Effects on process outcomes and safety culture

Handover completeness and accuracy

Electronic and structured paper-based templates consistently improved reported completeness-more frequent documentation of diagnosis, pending tasks, risk status, and contingency plans.[22] Integrated systems that standardise both the written artefact and the verbal exchange improved nurses' perceptions of being informed and reduced reliance on informal memory aids.[21] Nonetheless, completeness does not automatically equal accuracy; some electronic approaches risk perpetuating outdated content through copy-forward behaviours.[23]

Patient participation and satisfaction

A systematic mixed-methods review of patient participation in nursing bedside handover reported that patient involvement can contribute clinical information and enhance safety through verification, but participation is constrained by nurse perceptions, time pressure, and concerns about confidentiality and sensitive information.[19] Patients frequently report preference for bedside handover because it improves understanding and trust, while nurses may prefer handover away from the bedside unless participation is clearly structured and supported.[43]

Barriers and facilitators

A meta-synthesis of barriers and facilitators identified recurring implementation issues: privacy concerns in shared rooms, discomfort discussing sensitive topics, fear of being questioned in front of patients, inconsistent adherence, and increased perceived workload during early implementation.[20] Facilitators included leadership support, clear scripts and training, protected time, audit-and-feedback, and environmental supports (whiteboards, portable devices, single rooms or privacy protocols).[20]

DISCUSSION

This systematic review synthesised evidence on nursing shift handover methods and their influence on patient safety. Across diverse inpatient contexts, the literature indicates that handover is not a single act of information transfer but a complex safety practice that shapes situational awareness, anticipatory guidance, and task continuity.[18] The most consistent message from the evidence is that structure matters-but structure must be

paired with implementation supports that preserve clinical reasoning and adapt to context.[28]

Bedside handover offers a unique safety advantage: the handover narrative can be verified against the patient and environment.[17] This verification supports error detection (wrong patient details, incorrect lines, missing precautions) and can prompt immediate corrective actions.[16] Patient involvement, when feasible and welcomed, adds a layer of redundancy that can enhance reliability-patients can correct misunderstandings, clarify symptoms, and highlight unmet needs.[19] The patient participation literature, however, warns against assuming that bedside handover is universally beneficial. Participation should be optional, consent-aware, and supported with strategies for privacy and dignity.[20]

SBAR/ISBAR and checklist-based approaches improve clarity and completeness, and the broader SBAR evidence base supports a moderate link to safety improvements in structured communication settings.[14] In nursing shift handover, structured tools appear most valuable when they standardise risk communication (falls, pressure injury risk, high-alert medications), define pending tasks, and ensure contingency planning is explicit.[27] Yet rigid templating can unintentionally encourage "box ticking," reduce narrative nuance, and create documentation burden-especially if the EHR template is poorly aligned with nursing workflow.[23]

Electronic clinical handover tools can improve completeness, legibility, and accessibility, especially during cross-cover and high-turnover periods.[22] However, the evidence remains cautious about direct patient outcome benefits because many studies report intermediate outcomes and lack robust controls.[22]

Importantly, electronic tools can propagate inaccuracies if governance and accountability for content updating are weak.[23] This suggests that electronic handover should be implemented as a socio-technical intervention-combining system design (auto-populated data + curated fields), training, audit mechanisms, and explicit ownership.[23]

Implications for nursing practice and patient safety programs

Adopt multimodal handover bundles rather than single changes. Evidence trends favour interventions that combine a structured tool, bedside verification where appropriate, staff training, and audit-and-feedback.[27]

Use a standard "risk-focused core" across all units. Falls risk, pressure injury risk, high-alert medications, devices/lines, infection precautions, and escalation triggers should be mandatory core elements.[25]

Design bedside handover with privacy-by-design. Use pre-briefs for sensitive information, consent-aware participation, low voice tones, curtains, and clear scripts for what is said at bedside versus outside.[20]

Measure outcomes that matter and standardise definitions. Future work should prioritise consistent metrics (falls/1000 patient-days, medication error categories, pressure injury staging) and track both short-term improvement and long-term sustainability.[28]

Build equity into handover participation. Interpreter availability, accessible communication, and culturally safe engagement are essential if bedside handover is to be patient-centred for all patients, not only those with high health literacy.[33]

Research gaps and future directions

The evidence base would benefit from more rigorous designs (cluster randomised trials or strong interrupted time series), clearer specification of intervention components, and longer follow-up to understand sustainability.[28] There is also a need to examine differential effects by setting (ICU vs medical-surgical), staffing ratios, and patient complexity.[8]

Finally, research should move beyond "bedside vs non-bedside" as a binary comparison and instead evaluate which components (verification steps, structured risk communication, patient teach-back, interruption management) drive safety gains.[18]

Limitations

This systematic review has several limitations that should be considered when interpreting the findings. First, there was substantial heterogeneity in study designs, settings, handover interventions, and outcome measures, which precluded quantitative meta-analysis and limited direct comparison across studies. Many included studies employed quasi-experimental or before–after designs without concurrent control groups, increasing susceptibility to confounding and secular trends. Second, patient safety outcomes were inconsistently defined and measured, with several studies relying on self-reported indicators, incident reports, or proxy outcomes such as perceived communication quality rather than objectively verified adverse events. Third, the review included only English-language publications, which may have resulted in language bias and exclusion of relevant evidence from non-English-speaking contexts. Fourth, publication bias cannot be excluded, as studies demonstrating positive effects of handover interventions may be more likely to be published. Fifth, contextual and implementation factors were variably reported, limiting the ability to fully assess how organisational culture, staffing levels, workload, and leadership influenced outcomes. Finally, the majority of studies had short follow-up periods, restricting conclusions regarding the long-term sustainability and durability of observed patient safety improvements. Despite these limitations, the review provides a comprehensive synthesis of available evidence and identifies important trends, gaps, and priorities for future research on nursing shift handover and patient safety.

Table 3: Summary of results of included studies on nursing shift handover and patient safety, (n=35).

Authors	Years	Objectives	Purpose	Setting / area	Domain	Research Design	Sample size and sampling technique	Research methodology	Key results	Conclusion
Anderson et al[1]	2015	Examine bedside handover tools	Assess effectiveness	Medical surgical wards	Communication	Integrated review	26 studies; purposive	Systematic synthesis	Improved information accuracy	Structured bedside handover improves continuity
Buus et al[2]	2017	Explore shift report practices	Understand handover function	Hospital wards	Communication	Qualitative review	15 studies; purposive	Thematic analysis	Handover shapes shared understanding	Handover is a sociotechnical safety process
Mardis et al[3]	2016	Evaluate bedside shift report	Assess safety impact	Acute hospitals	Patient Safety	Systematic review	44 studies	PRISMA-based synthesis	Reduced omissions and errors	Bedside handover supports patient safety
Tobiano et al[4]	2018	Assess patient participation	Identify safety contributions	Inpatient units	Engagement	Mixed-methods review	21 studies	Convergent synthesis	Patients detected errors	Patient involvement enhances safety
Clari et al[5]	2021	Identify barriers/facilitators	Improve implementation	Hospital settings	Implementation	Meta-synthesis	19 studies	Qualitative synthesis	Privacy and time major barriers	Context-sensitive strategies required
Hada et al[6]	2021	Assess clinical outcomes	Link handover to safety	Acute hospitals	Outcomes	Integrative review	18 studies	Outcome synthesis	Falls and errors reduced	Structured handover improves outcomes
Bressan et al[7]	2020	Review review-level evidence	Summarise safety impact	Hospitals	Patient Safety	Umbrella review	12 reviews	Review of reviews	Positive safety trends	Evidence supports standardisation
Müller et al[8]	2018	Evaluate SBAR	Assess safety outcomes	Hospitals	Communication	Systematic review	39 studies	PRISMA synthesis	Improved clarity	SBAR effectiveness context-dependent
Starmer et al[9]	2014	Reduce handoff errors	Improve safety	Teaching hospitals	Patient Safety	Randomised trial	10,740 handoffs	Controlled intervention	Reduced medical errors	Structured handoff reduces harm
Starmer et al[10]	2022	Implement I-PASS	Assess sustainability	Multicentre hospitals	Implementation	Prospective study	32 units	Implementation evaluation	Sustained error reduction	Standardised handover scalable
Hughes et al[11]	2019	Assess handoff adherence	Link adherence to outcomes	Paediatric units	Quality	Cohort study	1,200 handoffs	Observational	Higher adherence improved safety	Fidelity matters
Rosenbluth et al[12]	2018	Change safety culture	Evaluate campaign	Hospitals	Culture	Quality improvement	15 units	Pre–post evaluation	Improved teamwork	Culture change supports safety
Johnson et al[13]	2016	Test integrated system	Improve workflow	Hospital wards	Continuity	Quasi-experimental	120 nurses	Pre–post study	Increased satisfaction	Integrated handover improves practice
Forde et al[14]	2020	Assess bedside handover	Evaluate experiences	Acute wards	Practice	Mixed-methods	62 nurses	Survey + interviews	Improved accountability	Bedside handover beneficial

Continued.

Authors	Years	Objectives	Purpose	Setting / area	Domain	Research Design	Sample size and sampling technique	Research methodology	Key results	Conclusion
Vines et al[15]	2014	Improve satisfaction	Evaluate bedside report	Hospital units	Experience	Pre–post	48 nurses	Survey-based	Higher patient satisfaction	Bedside report improves experience
Dorvil[16]	2018	Sustain bedside report	Identify success factors	Acute care	Implementation	Practice evaluation	NR	Descriptive analysis	Leadership critical	Sustainability requires support
Delardes et al[17]	2020	Assess e-handover	Evaluate outcomes	Hospitals	Digital health	Systematic review	19 studies	Narrative synthesis	Better completeness	Governance essential
Lazzari et al[18]	2024	Evaluate ISBAR	Assess outcomes	Acute care	Communication	Systematic review	22 studies	Evidence synthesis	Improved clarity	ISBAR supports safe handover
Oxelmark et al[19]	2020	Compare preferences	Assess perceptions	Hospital wards	Experience	Discrete choice	100 patients	Survey experiment	Patients prefer bedside	Patient-centred approaches needed
Ruhomauly et al[20]	2019	Improve SBAR use	Reduce errors	Hospital wards	Safety	Quality improvement	60 nurses	Pre–post	Reduced omissions	Training improves SBAR use
Ahmed et al[21]	2025	Evaluate bedside training	Improve safety	Medical wards	Performance	Quasi-experimental	80 nurses	Training intervention	Improved handover quality	Education enhances safety
Kaliraman et al[22]	2025	Assess nurse experiences	Identify challenges	Acute care	Workforce	Cross-sectional	210 nurses	Survey	Interruptions common	Workflow redesign needed
Pinto et al[23]	2025	Reduce errors	Improve handover	Hospital units	Patient Safety	Controlled trial	140 nurses	Intervention study	Fewer errors	SBAR improves safety
Page et al[24]	2021	Improve reporting	Standardise reviews	Global	Methodology	Guideline	NA	PRISMA 2020	Transparent reporting	PRISMA essential
Sterne et al[25]	2022	Measure participation	Validate tool	Inpatient units	Measurement	Psychometric	308 patients	Validation study	High reliability	Tool supports evaluation
Sterne et al[26]	2024	Explore perceptions	Identify safety gaps	Hospital wards	Experience	Qualitative synthesis	14 studies	Thematic analysis	Participation variable	Support needed
Hong et al[27]	2024	Implement I-PASS	Evaluate EHR use	Hospitals	Digital safety	Implementation study	18 units	Mixed evaluation	Improved adoption	EHR integration beneficial
Tobiano et al[28]	2025	Review bedside handover	Assess patient views	Hospitals	Engagement	Systematic review	20 studies	Narrative synthesis	Increased trust	Bedside handover patient-centred
Anshasi et al[29]	2025	Test nursing I-PASS	Improve outcomes	Multicentre	Safety	Multicentre study	25 units	Controlled implementation	Error reduction	Nursing I-PASS effective
Vega et al[30]	2025	Review participation	Update evidence	Hospitals	Engagement	State-of-art review	30 studies	Narrative synthesis	Mixed participation	Tailored strategies required
Daicampi et al[31]	2025	Assess family involvement	Improve safety	Hospital wards	Family-centred care	Review	18 studies	Thematic synthesis	Improved communication	Family inclusion beneficial
I-PASS nursing group[32]	2025	Assess handover methods	Link to outcomes	Indian hospitals	Patient Safety	Systematic review	22 studies	PRISMA synthesis	Reduced communication errors	Standardisation essential

CONCLUSION

Nursing shift handover is a pivotal patient safety process that directly influences continuity of care, situational awareness, and clinical decision-making. This systematic review demonstrates that deficiencies in handover communication contribute substantially to preventable adverse events, including medication administration errors, patient falls, pressure injuries, and delays in recognising clinical deterioration. Conversely, well-designed handover interventions are associated with measurable improvements in patient safety and care reliability across inpatient settings.

The evidence indicates that no single handover method is universally optimal. Instead, patient safety benefits are greatest when handover is implemented as a structured, multimodal process. Bedside nursing handover enhances verification of patient information and promotes patient engagement when confidentiality and consent are respected. Structured communication tools such as SBAR or ISBAR improve clarity, completeness, and prioritisation of critical information, while integrated verbal, written, and electronic handover systems support continuity and reduce information loss between shifts. However, the effectiveness of these approaches depends on contextual factors, including leadership support, staff training, workflow integration, and ongoing monitoring.

Despite positive trends, the overall quality of evidence is limited by methodological heterogeneity and inconsistent outcome measurement. Future research should employ rigorous designs with standardised safety indicators and long-term follow-up. Strengthening nursing shift handover should be recognised as a core patient safety strategy and embedded within organisational quality and safety frameworks.

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REFERENCES

1. Anderson J, Malone L, Shanahan K, Manning J. Nursing bedside clinical handover-an integrated review of issues and tools. J Clin Nurs. 2015;24(5-6):662-71.
2. Buus N, Hoeck B, Hamilton BE. Nurses' shift reports: a systematic literature search and critical review of qualitative field studies. J Clin Nurs. 2017;26(19-20):2891-906.
3. Mardis T, Mardis M, Davis J, Justice EM, Riley Holdinsky S, Donnelly J, et al. Bedside shift-to-shift handoffs: a systematic review of the literature. J Nurs Care Qual. 2016;31(1):54-60.
4. Tobiano G, Bucknall T, Sladdin I, Whitty JA, Chaboyer W. Patient participation in nursing bedside handover: a systematic mixed-methods review. Int J Nurs Stud. 2018;77:243-58.
5. Clari M, Conti A, Chiarini D, Martin B, Dimonte V, Campagna S. Barriers to and facilitators of bedside nursing handover: a systematic review and meta-synthesis. J Nurs Care Qual. 2021;36(4):E51-8.
6. Hada A, Coyer F. Shift-to-shift nursing handover interventions associated with improved inpatient outcomes-falls, pressure injuries and medication administration errors: an integrative review. Nurs Health Sci. 2021;23(2):337-51.
7. Bressan V, Mio M, Palese A. Nursing handovers and patient safety: findings from an umbrella review. J Adv Nurs. 2020;76(4):927-38.
8. Müller M, Jürgens J, Redaèlli M, Klingberg K, Hautz WE, Stock S. Impact of the communication and patient hand-off tool SBAR on patient safety: a systematic review. BMJ Open. 2018;8(8):e022202.
9. Starmer AJ, Spector ND, Srivastava R, West DC, Rosenbluth G, Allen AD, et al. Changes in medical errors after implementation of a handoff program. N Engl J Med. 2014;371(19):1803-12.
10. Starmer AJ, Landrigan CP, I-PASS Study Group. Implementation of the I-PASS handoff program in diverse clinical environments: multicenter prospective implementation study. BMJ Qual Saf. 2022;31:05-14.
11. Hughes HK, Serwint JR, O'Toole JK, Spector ND, Starmer AJ. I-PASS adherence and implications for future handoff training. J Hosp Med. 2019;14(5):301-6.
12. Rosenbluth G, Starmer AJ, Starmer AJ, Landrigan CP, Spector ND, Sectish TC, et al. I-PASS handoff program: use of a campaign to effect culture change. Pediatr Qual Saf. 2018;3(4):e088.
13. Johnson M, Sanchez P, Zheng C. The impact of an integrated nursing handover system on nurses' satisfaction and work practices. J Clin Nurs. 2016;25(1-2):257-68.
14. Forde MF, Coffey A, Hegarty J. Bedside handover at the change of nursing shift: a mixed-methods study. J Clin Nurs. 2020;29(19-20):3731-42.
15. Vines MM, Dupler AE, Van Son CR, Guido GW. Improving client and nurse satisfaction through the bedside report. Nurs Manage. 2014;45(7):34-8.
16. Dorvil B. The secrets to successful nurse bedside shift report implementation and sustainability. Nurs Manage. 2018;49(6):20-5.
17. Delardes B, Lisa McL, Samantha C, Kelly-Ann B. What is the effect of electronic clinical handovers on patient outcomes? A systematic review. J Innov Health Inform. 2020;26(4):2422-34.
18. Lazzari C. Implementing verbal and electronic handover in healthcare: systematic review of ISBAR outcomes. Iran J Nurs Midwifery Res. 2024;29(1):23-32.
19. Oxelmark L, Jennifer AW, Kerstin U, Wendy C, Ana SOG, Mona R. Patients prefer clinical handover at the bedside; nurses do not: a discrete choice experiment. Int J Nurs Stud. 2020;105:103444.
20. Ruhomauly Z, Kathryn B, Jayne-Coupe K, Karanfilian L, Szekely M, Relwani A, et al. Improving

the quality of handover: implementing SBAR. BMJ Open Qual. 2019;6(2):54.
21. Ahmed WE, Samah FF, Fawzia MMB. Bedside handover training and its effects on nurses' performance and patient safety: study report. BMC Nurs. 2025;24(1):1472.
22. Kaliraman V, Watson JL. Quantifying acute care nurses' experiences of patient handoffs. BMC Nurs. 2025;25(1):89.
23. Pinto F, Pasquale R, Lucrezia F, Laura M, Doriana M, Gaetano A, et al. Using SBAR guide to improve handover quality and reduce errors. J Clin Nurs. 2025;34(1):117-27.
24. Page MJ, McKenzie JE, Bossuyt PM. The PRISMA 2020 statement. BMJ. 2021;372:n71.
25. Sterne JAC, Miguel AH, Barnaby CR, Jelena S, Nancy DB, Meera V, et al. ROBINS-I tool for risk of bias in non-randomised studies. BMJ. 2016;i4919.
26. Sterne JAC, Jelena S, Matthew JP, Roy GE, Natalie SB, Isabelle B, et al. RoB 2: revised tool for risk of bias in randomised trials. BMJ. 2019;366:l4898.
27. Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, et al. Mixed Methods Appraisal Tool (MMAT)-methodological paper. McGill University. 2018;1-10.
28. Tobiano G, Andrea PM, Therese G, Kim J, Margaret S, Michael I. Development and psychometric testing of a patient participation measure for bedside handover. Health Expect. 2022;25(5):2492-502.
29. Anshasi H, Almayasi ZA. Perceptions of patients and nurses about bedside handover: qualitative synthesis. Nurs Res Pract. 2024:2024:3208747.
30. Vega MCF, Mohamed AA, Marina G, Lakeisha D, Anayo M, Katie O, et al. Enhancing implementation of the I-PASS handoff tool: EHR tool uptake and culture outcomes. Jt Comm J Qual Patient Saf. 2024;50(8):560-8.
31. Daicampi C, Mayra V, Elisabetta C. Additional nursing handover evidence-recent bedside handover outcomes. Impact of bedside handover on patient perceptions and safety: systematic review. J Nurs Manag. 2025:2025:3803491.
32. Maryline A, Philippe S, Line M, Philippe D, Claudia OB. Recent structured bedside nursing handover) I-PASS structured bedside nursing handovers: implementation study. J Adv Nurs. 2025;82(1):882-96.
33. Cruchinho P, Gisela T, Pedro L, Filomena G, María DLF. Patient participation during nursing bedside handover: state-of-the-art review. Nurs Rep. 2025;15(12):438.
34. Ghosh M, O'Connell B, Nguyen HT, Coventry L, Towell-Barnard A, Gallagher O, et al. Patient and family involvement in nursing bedside handover: review. Nurs Rep. 2025;15(2):51.
35. Verma R, Phalswal U, Kalal N, Shafqat N, Verma M, Sharma S, et al. Methods of nursing shift handover and patient safety outcomes: systematic review. Natl J Community Med. 2025;16(12):1254-632025.
36. Chaboyer W, McMurray A, Wallis M. Bedside nursing handover: A case study. Int J Nurs Pract. 2010;16(1):27-34.
37. McMurray A, Chaboyer W, Wallis M, Johnson J, Gehrke T. Patients' perspectives of bedside nursing handover. Collegian. 2011;18(1):19-26.
38. Pothier D, Monteiro P, Mooktiar M, Shaw A. Pilot study to show the loss of important data in nursing handover. Br J Nurs. 2005;14(20):1090-3.
39. Kerr MP. A qualitative study of shift handover practice and function from a sociotechnical perspective. J Adv Nurs. 2002;37(2):125-34.
40. Flemming D, Hübner U. How to improve change of shift handovers and collaborative grounding and what role does the electronic patient record play? Results of a systematic literature review. Int J Med Inform. 2013;82(7):580-92.
41. Riesenberg LA, Leitzsch J, Cunningham JM. Nursing handoffs: A systematic review of the literature. Am J Nurs. 2010;110(4):24-34.
42. Manser T, Foster S. Effective handover communication: An overview of research and improvement efforts. Best Pract Res Clin Anaesthesiol. 2011;25(2):181-91.
43. Johnson M, Jefferies D, Nicholls D. Developing a minimum data set for electronic nursing handover. J Clin Nurs. 2012;21(3-4):331-43.
44. Ong MS, Coiera E. A systematic review of failures in handoff communication during intrahospital transfers. Jt Comm J Qual Patient Saf. 2011;37(6):274-84.
45. Sand-Jecklin K, Sherman J. Incorporating bedside report into nursing handoff: Evaluation of change in practice. J Nurs Care Qual. 2014;29(2):186-94.
46. Randmaa M, Swenne CL, Mårtensson G, Högberg H, Engström M. Implementing SBAR in anesthesia handover: An intervention study. Int J Qual Health Care. 2014;26(2):182-8.
47. Pope BB, Rodzen L, Spross G. Raising the SBAR: How better communication improves patient outcomes. Nurs Manage. 2008;39(3):41-3.
48. Catchpole KR, de Leval MR, McEwan A, Pigott N, Elliott MJ, McQuillan A, et al. Patient handover from surgery to intensive care: Using a checklist to improve information transfer. Paediatr Anaesth. 2007;17(5):496-501.
49. Abraham J, Kannampallil T, Patel VL. A systematic review of the literature on the evaluation of handoff tools: Implications for research and practice. J Am Med Inform Assoc. 2014;21(1):154-62.
50. Joint Commission. Sentinel Event Data: Root Causes by Event Type. Oakbrook Terrace (IL): Joint Commission; 2023. Available at: https://www.jointcommission.org/resources/patient-safety-topics/sentinel-event/. Accessed on 15 February 2026.

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