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REVIEW

Barriers and Facilitators to Electronic Health Record Documentation Compliance in Multidisciplinary Hospital Settings: A Scoping Review

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Background: Electronic health records (EHRs) are intended to strengthen continuity of care by enabling shared access to clinical information across disciplines. In this review, documentation compliance refers to completing required clinical documentation in a timely, complete, structured, and retrievable manner to support multidisciplinary information use. However, documentation compliance remains inconsistent in multidisciplinary hospital workflows, limiting its usability for interprofessional coordination and safe decision-making.

Objective: To map barriers and facilitators influencing EHR documentation compliance in multidisciplinary acute care hospital settings using a sociotechnical lens.

Methods: This scoping review followed Joanna Briggs Institute guidance and was reported according to PRISMA-ScR. A systematic search was conducted in PubMed, ScienceDirect, and selected databases accessed through the EBSCOhost platform from database inception to 13 April 2026. English-language primary empirical studies examining barriers and/or facilitators to EHR documentation compliance in multidisciplinary acute care hospital workflows were included. Two reviewers independently screened studies and charted data. Findings were synthesized using descriptive thematic analysis.

Results: From 608 records, 22 studies met the inclusion criteria. The evidence base was limited and heterogeneous, with qualitative and implementation-focused studies predominating. Technological barriers included poor usability, access friction, fragmented information architecture, and limited team-level visibility. Individual and behavioral barriers included variable trust in digital information, selective documentation use, and reduced critical review linked to structured documentation and convenience functions. Organizational barriers included constrained workstation access, interruptions, inconsistent standards, staff turnover, and insufficient communication or training during system changes. Facilitators included workflow-aligned templates, automation, reminders, alerts, discipline-sensitive training, clinician-IT collaboration, and audit-and-feedback mechanisms.

Conclusion: EHR documentation compliance in multidisciplinary hospitals is shaped by interacting sociotechnical conditions. Evidence-informed improvement should prioritize workflow-aligned design, clear documentation standards, continuous training, change communication, and feedback mechanisms that support interprofessional coordination and patient safety.

Keywords: electronic health record, documentation compliance, multidisciplinary team, interprofessional communication, sociotechnical systems, scoping review, acute care hospital

Introduction

Electronic health records (EHRs) are widely implemented to improve continuity of care, information access, and care coordination across clinical disciplines.[1,2] In acute hospital settings, patient care depends on timely and coordinated contributions from nurses, physicians, pharmacists, and allied health professionals. When documentation is incomplete,

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delayed, inconsistently structured, or difficult to retrieve, the clinical record may become fragmented, limiting shared understanding of patient status, care plans, and clinical risks across the multidisciplinary team.[3]

In this review, documentation compliance refers to the extent to which required clinical documentation is completed in a timely, complete, structured, and retrievable manner, and can be used by other disciplines to support communication, coordination, and clinical decision-making. This definition includes completion of required documentation fields or templates, but also extends to documentation quality, retrievability, and interprofessional usability when these aspects influence multidisciplinary information flow.

EHRs may support documentation compliance by enabling shared access to patient information, co-located documentation, structured templates, reminders, alerts, and audit-and-feedback functions.[4,5] However, these systems may also create barriers when documentation workflows are poorly aligned with clinical work. In multidisciplinary acute care, documentation burden, complex interfaces, high screen burden, information overload, fragmented documentation locations, and heterogeneous documentation formats can reduce the timeliness, completeness, and usability of clinical documentation. These problems matter because documentation is not only a legal or administrative record. It is also a communication tool that supports handovers, rounds, care planning, and shared decision-making across professional groups.[3,5,6] These problems matter because documentation is not only a legal or administrative record. It also functions as a communication tool for handovers, rounds, care planning, and shared decision-making across professional groups.

Automation and emerging digital tools further complicate documentation compliance. Features such as copy-forward, copy-paste, checkbox-driven templates, auto-populated fields, reminders, and alerts may improve efficiency and standardisation. However, they may also increase the risk of note bloat, inaccurate carryover, reduced critical review, and loss of clinically meaningful detail.[7,8] More recent developments, including AI-assisted documentation and ambient AI scribes, may support documentation by reducing manual entry burden and generating structured clinical notes. However, these tools also shift compliance concerns toward verification, accuracy, governance, and the usability of generated documentation for cross-disciplinary care.[9]

From a sociotechnical perspective, EHR documentation compliance is shaped by the interaction between technology design, clinician behaviour, workflow demands, organisational standards, training, and governance.[6,10] Prior studies have identified barriers and facilitators to digital health technology use, including usability, workflow fit, training adequacy, and management support.[10,11] However, much of the evidence remains profession-specific or focuses on EHR use more broadly. Fewer studies have specifically examined documentation compliance as a multidisciplinary information problem in acute hospital workflows, where the value of documentation depends not only on whether it is completed, but also on whether it is accurate, retrievable, meaningful, and usable by other professional groups.

The novelty of this review lies in its focus on EHR documentation compliance as a multidisciplinary information-use issue in acute hospital settings. Rather than examining EHR use or documentation burden in general, this review emphasizes how documentation practices affect the ability of different professional groups to access, interpret, and use clinical information for communication, care coordination, and decision-making. This focus is important because documentation compliance in multidisciplinary care depends not only on completion of required fields, but also on documentation quality, retrievability, visibility, and interprofessional usability.

Therefore, this scoping review, guided by the Joanna Briggs Institute methodology, aims to map barriers and facilitators influencing EHR documentation compliance in multidisciplinary acute care hospital settings. By synthesising the evidence through a sociotechnical lens, this review seeks to clarify how technological, individual and behavioural, and organisational and environmental factors shape documentation practices, interprofessional information flow, and coordinated patient care.

Methods

Study Design and Methodology

This study was conducted as a scoping review in accordance with the Joanna Briggs Institute methodological guidance for scoping reviews.[12] The review methods were specified before study selection to enhance transparency and

reproducibility. Reporting followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews guidelines.[13]

A scoping review approach was selected because the review aimed to map the breadth, characteristics, and gaps of evidence on barriers and facilitators influencing EHR documentation compliance in multidisciplinary acute care hospital settings. This approach was appropriate given the heterogeneity of study designs, clinical settings, documentation outcomes, and implementation contexts across the available literature.[12]

Findings were synthesized using a sociotechnical systems perspective. This perspective allowed the review to examine how technological factors, individual and behavioral factors, and organizational and environmental factors interact to shape documentation practices, documentation compliance, and multidisciplinary information flow.[6] Ethical approval was not required because this review used publicly available published literature and did not involve direct interaction with human participants.

Eligibility Criteria

Eligibility criteria were developed using the Population, Concept, and Context framework, as recommended by the Joanna Briggs Institute for scoping reviews. The framework was used to ensure that included studies aligned with the review objective and focused on EHR documentation compliance within multidisciplinary acute care hospital workflows.

- Population: This review included studies involving healthcare professionals who provide direct clinical care and document at the point of care in hospital settings. Eligible professionals included nurses, physicians, pharmacists, and allied health professionals, such as physiotherapists, occupational therapists, dietitians, speech therapists, and social workers. Studies focusing exclusively on non-clinical personnel, such as administrative staff or IT technicians, or students were excluded. Studies were eligible if they involved multidisciplinary teams or focused on a single profession but examined documentation practices occurring within, or affecting, multidisciplinary hospital workflows, such as information sharing, retrieval, or use by other disciplines.
- Concept: Included studies were required to report barriers and/or facilitators influencing EHR or EMR documentation compliance. In this review, documentation compliance was defined broadly and included timeliness, completeness, adherence to required documentation fields or templates, documentation quality, structured data capture, retrievability, and relevance to multidisciplinary information sharing and clinical decision-making. Studies focused solely on technical architecture, programming algorithms, hardware evaluation, or cost evaluation were excluded unless they were directly linked to clinicians' documentation behaviours, adherence, or documentation workflow.
- Context: The review was limited to acute care hospital settings, including inpatient wards, emergency departments, intensive care units, and hospital-based outpatient departments or clinics integrated within acute care hospitals. Studies conducted in primary care, long-term care facilities, rehabilitation facilities, nursing homes, or community settings were excluded.
- Types of Evidence: Only primary empirical studies with quantitative, qualitative, or mixed-methods designs published as full-text journal articles were included. Reviews, editorials, opinion papers, protocols, dissertations, conference abstracts, and non-full-text publications were excluded.
- Search Limits:: No date restrictions were applied. Searches covered records from database inception to 13 April 2026. The search was limited to English-language publications because of feasibility constraints.

Search Strategy

A revised search strategy was developed to improve the sensitivity, transparency, and reproducibility of this scoping review. Searches were conducted in PubMed, ScienceDirect, and selected databases accessed through the EBSCOhost platform. Because EBSCOhost is a search platform rather than a single database, the specific databases searched through EBSCOhost were identified as eBook Collection (EBSCOhost), Literary Reference Source, and Middle Eastern & Central Asian Studies. The search covered records from database inception to 13 April 2026, with no date restriction.

The search strategy was guided by the Population–Concept–Context framework. The population block included multidisciplinary healthcare professionals involved in hospital-based clinical documentation, including nurses,

physicians, pharmacists, allied health professionals, and other clinical users. The concept block focused on EHR or EMR documentation compliance, including documentation completion, timeliness, completeness, documentation quality, structured data capture, retrievability, adherence to documentation workflows, and barriers or facilitators affecting documentation practices. The context block included acute care, inpatient, emergency, intensive care, and other hospital-based clinical settings.

To improve search sensitivity, key terms were not limited to title-only searching. Where supported by each database, search terms were applied across title, abstract, keyword, subject heading, MeSH terms, or other broader searchable fields. Controlled vocabulary terms, including Medical Subject Headings in PubMed, were combined with free-text keywords related to electronic health records, electronic medical records, clinical documentation, documentation compliance, documentation adherence, documentation completeness, documentation quality, documentation burden, usability, workflow, implementation, barriers, facilitators, multidisciplinary care, interprofessional care, and hospital settings.

Synonyms within each concept were combined using OR, and the main concept blocks were combined using AND. The search strategy was adapted to the indexing structure, searchable fields, and technical requirements of each database. For ScienceDirect, the search syntax was revised to include the core PCC concepts: EHR or EMR terms, clinical documentation and documentation compliance terms, multidisciplinary or interprofessional terms, and acute hospital context terms. The ScienceDirect string was simplified where necessary to comply with the platform's Boolean connector limits while retaining the key concepts needed to identify relevant studies.

Searches were limited to English-language publications. Eligibility for primary empirical research and hospital-based clinical relevance was assessed during title and abstract screening and full-text review. All retrieved records were exported to Mendeley for deduplication before screening. The complete database-specific search strings, searched fields, search limits, search dates, and database details are provided in Supplementary File 1.

Study Selection

The study selection process was conducted systematically to enhance transparency and minimize selection bias. All search results from PubMed, ScienceDirect, and selected databases accessed through the EBSCOhost platform were exported to Mendeley reference management software. Duplicate records were removed using automated deduplication and manual verification.

After deduplication, two reviewers (PBS and MAA) independently screened titles and abstracts based on the PCC eligibility criteria. Articles considered potentially relevant, or articles whose eligibility could not be determined from the title and abstract alone, were retrieved for full-text review. The same two reviewers independently assessed the full texts against the inclusion and exclusion criteria.

Disagreements at any stage were resolved through discussion until consensus was reached. If consensus could not be achieved, a third reviewer (MK) adjudicated the final decision. The complete selection process, including reasons for full-text exclusion, was documented and is presented in the PRISMA-ScR flow diagram.

Data Extraction/Data Charting

Data were extracted using a structured data charting approach in accordance with Joanna Briggs Institute guidance for scoping reviews. A standardized data charting form was developed by the review team to align with the review objectives. The form was pilot-tested on three included studies to ensure consistency of interpretation and was refined before full data extraction.

Charted data included three main categories: bibliometric and methodological characteristics; context and system characteristics; and key findings. Key findings included documentation compliance measures, reported barriers and facilitators, interventions or implementation strategies where applicable, and implications for multidisciplinary workflows and management.

Data charting was conducted independently by two reviewers (PBS and MAA). Disagreements were resolved through discussion and consensus. When consensus could not be reached, a third reviewer (MK) adjudicated. The charted data

informed Tables 1–3, including the summary of study characteristics, barriers and facilitators, and multidisciplinary impacts with managerial implications.

Data Synthesis

Extracted data were synthesized using a descriptive thematic approach to accommodate heterogeneity across qualitative, quantitative, and mixed-methods studies. Therefore, no meta-analysis was conducted. Reported barriers, facilitators, and intervention or implementation components were first summarized and coded. Coding was conducted independently by two reviewers (PBS and MAA) and refined iteratively through constant comparison across studies.

Discrepancies in coding or domain assignment were resolved through discussion and consensus. When consensus could not be reached, a third reviewer (MK) adjudicated. Quantitative outcomes, such as audit-based compliance rates or intention-to-use scores, were synthesized descriptively and integrated with qualitative findings without statistical pooling.

Guided by a sociotechnical systems perspective, the codes were organized into three overarching domains: technological factors, individual and behavioral factors, and organizational and environmental factors. Technological factors included EHR usability and performance, interface design, navigation burden, system stability, interoperability, and information architecture affecting the availability and retrievability of documentation. Individual and behavioral factors included clinician beliefs, attitudes toward EHR use, trust in digital information, workarounds, reliance on automation features, and documentation behaviors affecting timeliness, completeness, and information quality. Organizational and environmental factors included workload, time pressure, staffing and turnover, access to documentation resources, training, communication during system changes, leadership practices, and local norms shaping interprofessional documentation use.

Findings related to multidisciplinary workflows, including cross-disciplinary information sharing, information retrieval, rounds, handover communication, and care coordination, were charted alongside compliance-related outcomes. This approach allowed the synthesis to show how sociotechnical conditions influenced both documentation practices and team-based care.

Result

Study Selection

Through the revised search of PubMed, ScienceDirect, and selected databases accessed through the EBSCOhost platform, conducted up to 13 April 2026, a total of 608 records were identified: PubMed (n = 154), EBSCOhost platform databases (n = 172), and ScienceDirect (n = 282). All records were exported to Mendeley for deduplication, and 8 duplicate records were removed. The remaining 600 records were screened by title and abstract. During title and abstract screening, 498 records were excluded because they were not relevant to the review question, were not primary empirical studies, did not address EHR/EMR documentation compliance or related barriers and facilitators, or were not conducted in eligible hospital-based clinical settings.

A total of 102 full-text articles were assessed for eligibility. Of these, 80 articles were excluded for the following reasons: not conducted in an eligible acute or hospital-based clinical setting (n = 21); not addressing EHR/EMR documentation compliance, documentation quality, completeness, timeliness, or related barriers and facilitators (n = 24); not primary empirical research, including reviews, commentaries, protocols, or editorials (n = 13); wrong population or not aligned with eligible clinical users or multidisciplinary hospital workflows (n = 12); insufficient focus on documentation-related outcomes or implementation factors (n = 7); and language or full-text accessibility constraints (n = 3). Ultimately, 22 studies met the inclusion criteria and were included in the data charting and thematic synthesis. The selection process is presented in the PRISMA-ScR flow diagram (Figure 1).

Study Characteristics

The 22 included studies were published between 2008 and 2026. Most studies were conducted in the United States (n = 14), followed by Sweden (n = 3), Australia (n = 2), Singapore (n = 1), China (n = 1), and Indonesia (n = 1). The studies covered diverse hospital-based clinical settings, including intensive care units, emergency departments, oncology

Table 1 Characteristics of Included Studies

Author (Year)	Country	Aim	Design	Participants (N; Professions)	Setting	System & Implementation Stage	Data Collection Methods
Kossman and Scheidenhelm (2008)[14]	USA	To describe nurses' EHR use and perceived impact on workflow and patient care.	Descriptive qualitative study using a phenomenological approach.	N=46 registered nurses.	Medical-surgical and ICU wards across two community hospitals.	Commercial EHR integrated with a medication dispensing system; mature system in use for more than 18 months.	Open-ended questionnaires, direct observation, and interviews.
Pöder et al (2011)[15]	Sweden	To compare staff opinions, documentation habits, and guideline knowledge before and after implementation of evidence-based standardised care plans.	Quantitative descriptive comparative pre-post study.	N=34 preimplementation and N=37 postimplementation; registered nurses, physiotherapists, and occupational therapists.	Stroke care units across university and regional hospitals.	EHR integrated with an evidence-based standardised care plan module; approximately 1 year postimplementation.	Web-based questionnaires before and after implementation.
Keenan et al (2013)[16]	USA	To examine care information flow to identify sources of error and improvement opportunities.	Qualitative observational ethnography.	N=20 nurses, including novice and expert registered nurses.	Eight inpatient units across four hospitals.	Mixed electronic and supplementary paper-based system; routine ongoing use.	Direct observation for 200 hours, document artefacts, and interviews.
Sockolow et al (2014)[17]	USA	To generate empirical evidence on how nurses use an evidence-based Nursing Information System and identify barriers and facilitators to adoption.	Qualitative scenario-based user testing using modified think-aloud methods.	N=12 registered nurses.	Three units across two hospitals within a non-profit urban academic health system.	Nursing Information System within the EHR; newly implemented after 2011 implementation, approximately 3–12 months before the study.	Audio-recorded scenario testing, transcription, observations, and follow-up interviews.
Sockolow, Bowles et al (2014)[18]	USA	To evaluate adoption of an electronic point-of-care documentation system among interdisciplinary care teams.	Embedded mixed-methods study with qualitative scenario testing.	N=12; interdisciplinary team including registered nurses, social workers, physiotherapist, and occupational therapist.	Three acute care units across two teaching hospitals.	Commercial EHR and commercial Nursing Information System; implemented since 2011.	Quantitative measures including time and satisfaction, plus qualitative observations and interviews.

Ang et al (2015)[19]	Singapore	To investigate factors influencing healthcare professionals' behavioural intention to use an electronic clinical medical record system.	Cross-sectional descriptive survey study.	N=306 participated; physicians, registered nurses, and enrolled nurses. N=262 analysed after excluding incomplete questionnaires.	Ten general wards in a 1,032-bed tertiary hospital.	Electronic clinical medical record system; preimplementation phase.	Self-administered questionnaire adapted from UTAUT.
Stevenson-Ågren et al (2018)[20]	Sweden	To identify and describe workarounds related to vital sign measurement, documentation, and retrieval, and to examine how well the EHR supported these processes.	Qualitative observational and interview study.	Observations of approximately 15 nurses; interviews with 13 staff, including nurses (n=10) and doctors (n=3).	District general hospital with 372 beds, including cardiology wards, cardiac ICU, high-dependency unit, infection ward, and emergency department.	EHR used since 2007 in routine hospital practice. Vital signs were expected to be documented in the EHR measurement table	62 hours of observations across shifts, opportunistic interviews during observation, and 13 semi-structured interviews.
Skyttberg et al (2016)[21]	Sweden	To explore factors affecting vital sign data quality in Swedish emergency departments and assess whether vital sign data were fit for use in clinical decision support systems.	Qualitative study using interviews, observations, and document/template analysis.	N=16 physicians and nurses from nine hospitals.	Nine Swedish emergency departments, including university hospitals and secondary referral centres.	EHRs were available in all hospitals, but vital sign documentation varied across paper-based, mixed, and fully digital workflows.	Semi-structured interviews, follow-up interviews, process observations at three hospitals, and analysis of vital sign documentation templates.
Pain et al (2017)[22]	Australia	To investigate how different health professionals perceive and use allied health documentation to inform inpatient decision-making and treatment.	Qualitative study.	N=53; speech pathologists, nurses, doctors, occupational therapists, dieticians, and social workers.	Australian regional tertiary hospital; focus group discussions conducted in 2012.	Allied health documentation/notes; implementation stage not reported.	Eleven single-discipline focus groups over 4 months; audio-recorded, transcribed, and analysed using content analysis.
Hampe et al (2017)[23]	USA	To develop an electronic Lund-Browder burn documentation tool and enable accurate and efficient evaluation of staff documentation compliance.	Performance improvement and implementation project report.	N=NR; multidisciplinary team including providers/ physicians, nurses, and information system builders/ IT staff.	Burn unit in a tertiary hospital in the Pittsburgh area.	Cerner EMR with dedicated burn templates; enterprise go-live in 2009 with post-go-live monitoring through 2015.	Documentation compliance audits, including concurrent and retrospective audits, with quarterly monitoring.

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Table 1 (Continued).

Author (Year)	Country	Aim	Design	Participants (N; Professions)	Setting	System & Implementation Stage	Data Collection Methods
Johnson et al (2018)[24]	USA	To improve EHR documentation of home medication reconciliation on admission in pediatric inpatient units.	Lean Sigma quality improvement project.	Pediatric inpatients admitted for more than 24 hours to four general pediatric units; the intervention targeted admitting pediatric residents.	Johns Hopkins Children's Center, four general pediatric inpatient units.	Sunrise RxWriter linked to Allscripts Sunrise Clinical Manager EHR.	Process mapping, Ishikawa analysis, resident/nurse/ pharmacist interviews, automated EHR-linked measures, and statistical process control charts.
Liu and Walsh (2018)[25]	USA	To redesign and standardize NICU provider documentation using a problem-based EHR platform, improve documentation metrics, maintain provider satisfaction, and estimate fiscal impact.	Quality improvement project with pre-post comparison, time study, provider survey, and documentation metrics analysis.	NICU provider group; 13 providers were eligible for continuous documentation during the study period, and 12 were included in the provider survey. The project also involved neonatal providers, nursing, respiratory therapy, IT, and clinical documentation improvement staff.	Level 2 and level 3 neonatal intensive care services at Golisano Children's Hospital of Southwest Florida, Lee Health.	Epic EHR; transition from dictation and nonstandardized electronic documentation to a standardized problem-based NICU EHR. Postintervention period: November 2016 to May 2017.	APR-DRG-based documentation metrics, provider time study, provider survey, clinical acuity indicators, and expected payment analysis.
Thate et al (2021)[26]	USA	To explore information needs related to central venous catheter management and collaborative decision-making.	Descriptive qualitative study using inductive thematic analysis.	N=8 registered nurses.	Medical ICU in an academic teaching hospital.	Hybrid paper and electronic system; shortly before migration to an enterprise system.	Semi-structured interviews.
Kantor et al (2021)[27]	USA	To improve accessible advance care planning documentation for hospitalized patients and assess its impact on ACP documentation and ACP Navigator access.	Quality improvement study with interrupted time-series analysis.	29,260 adult hospital encounters: 13,143 preintervention encounters and 16,117 intervention-period encounters.	UCSF Medical Center, an urban academic acute care hospital with 590 adult beds and 100 ICU beds.	Epic EHR with ACP Navigator, ACP SmartPhrase, ACP Note, patient-header visibility, and audit-log tracking.	Epic Clarity reports, ACP documentation metrics, ACP Navigator access audit logs, and interrupted time-series analysis.

Lee et al (2022)[28]	USA	To improve timely compliance with TNM cancer staging documentation for newly diagnosed oncology patients.	Quality improvement project with logistic regression analysis.	N=88 clinicians; oncologists, nurse practitioners, and physician assistants.	Academic comprehensive cancer center; nine oncology specialty teams.	Epic EHR Beacon module; enhancement of an existing mature system.	Retrospective EHR audits/analysis of new patient visits: 7,787 preintervention and 5,152 postintervention visits.
Canfell et al (2022)[6]	Australia	To observe real-time multidisciplinary clinical behaviours in a newly established digital hospital.	Qualitative observational ethnography using real-time shadowing.	N=55 clinicians; allied health professionals, registered nurses, medical staff, and pharmacy staff.	New specialist public hospital with 182 beds in Queensland.	EMR in early post-go-live stage, approximately 1 month after go-live.	Ethnographic observation for 58 hours across 99 patient encounters.
Schell et al (2023)[29]	USA	To evaluate whether a hospital-wide goals-of-care initiative using a serious illness risk prediction model improved goals-of-care documentation among hospitalized patients.	Retrospective cohort quality improvement study.	Preimplementation: 12,571 hospitalized patients. Postimplementation: 10,761 hospitalized patients.	UPMC Presbyterian Hospital, a 900-bed academic medical center in Pittsburgh, Pennsylvania.	Cerner EHR with Serious Illness Risk Indicator, centralized goals-of-care note, automated notifications, and targeted palliative care consults.	EHR-based documentation data, SIRI risk categories, dashboard data, and comparison of documented goals-of-care discussions before and after implementation.
Evans et al (2024)[30]	USA	To measure utilization and coding performance of a standardized ED note template across a nine-hospital health system.	Retrospective before-and-after study.	120,469 ED encounters preimplementation and 113,639 ED encounters postimplementation.	Nine emergency departments in an integrated health system.	Epic EHR standardized ED provider note template.	EHR note-template utilization reports, Epic Caboodle SQL data, billing/coding data, and note length analysis.
Franco Vega et al (2024)[31]	USA	To improve handoff documentation by implementing the EHR I-PASS handoff tool across inpatient services.	Hospital-wide quality improvement implementation.	Providers from 22 hospital services, including APPs, trainees, faculty, EHR staff, education specialists, and nocturnal providers.	816-bed comprehensive cancer center.	EHR-based I-PASS handoff tool with dashboard monitoring.	EHR utilization dashboard, compliance monitoring, safety culture survey, and handoff-related safety-event review.

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Table 1 (Continued).

Author (Year)	Country	Aim	Design	Participants (N; Professions)	Setting	System & Implementation Stage	Data Collection Methods
Zhang et al (2024)[32]	China	To develop and evaluate an ICU nursing EMR quality control system.	Single-center prospective controlled trial.	600 ICU patient records and 44 valid nurse satisfaction surveys.	ICU of a tertiary hospital in Zhejiang Province, China.	ICU nursing EMR quality control system linked with monitors, ventilators, PDA medication scanning, alerts, and reminders.	Pre-post EMR quality control data, quality control time, false vital sign data, incomplete medication administration, missing assessment items, and nurse satisfaction survey.
Thate et al (2025)[33]	USA	To explore how acute care nurses describe excessive documentation burden, factors contributing to this burden, and solutions to support essential documentation practices for safe, high-quality care.	Qualitative study using semi-structured interviews and focus groups with constant comparative analysis.	N=18 acute and critical care nurses.	Acute and critical care inpatient units in a large academic medical center.	EHR documentation in routine inpatient care, with focus on structured flowsheets, EHR rules, required fields, updates, and documentation burden.	Five individual interviews and two focus groups conducted between February and May 2024.
Bun et al (2026)[34]	Indonesia	To analyze completeness of core EMR data elements and identify systemic barriers to documentation for an ADHF registry.	Mixed-methods sequential explanatory study.	305 EMRs of ADHF patients and 8 key informants, including cardiologists, residents, nurses, medical records staff, and the head of the hospital information system.	National Cardiovascular Center Harapan Kita, Jakarta, Indonesia.	Hospital EMR used for ADHF registry data extraction and clinical documentation.	Retrospective EMR audit across 82 variables and semi-structured interviews.

Abbreviations: ACP, advance care planning; ADHF, acute decompensated heart failure; APP, advanced practice provider; APR-DRG, All Patient Refined Diagnosis Related Group; CDI, clinical documentation improvement; ED, emergency department; EB-SCP, evidence-based standardised care plan; ECMR, electronic clinical medical record; EHR, electronic health record; EMR, electronic medical record; ICU, intensive care unit; IT, information technology; MICU, medical intensive care unit; NICU, neonatal intensive care unit; NIS, Nursing Information System; NP, nurse practitioner; NR, not reported; OT, occupational therapist; PA, physician assistant; PDA, personal digital assistant; PT, physiotherapist; QI, quality improvement; RN, registered nurse; SIRI, Serious Illness Risk Indicator; TNM, tumour-node-metastasis; UTAUT, Unified Theory of Acceptance and Use of Technology.

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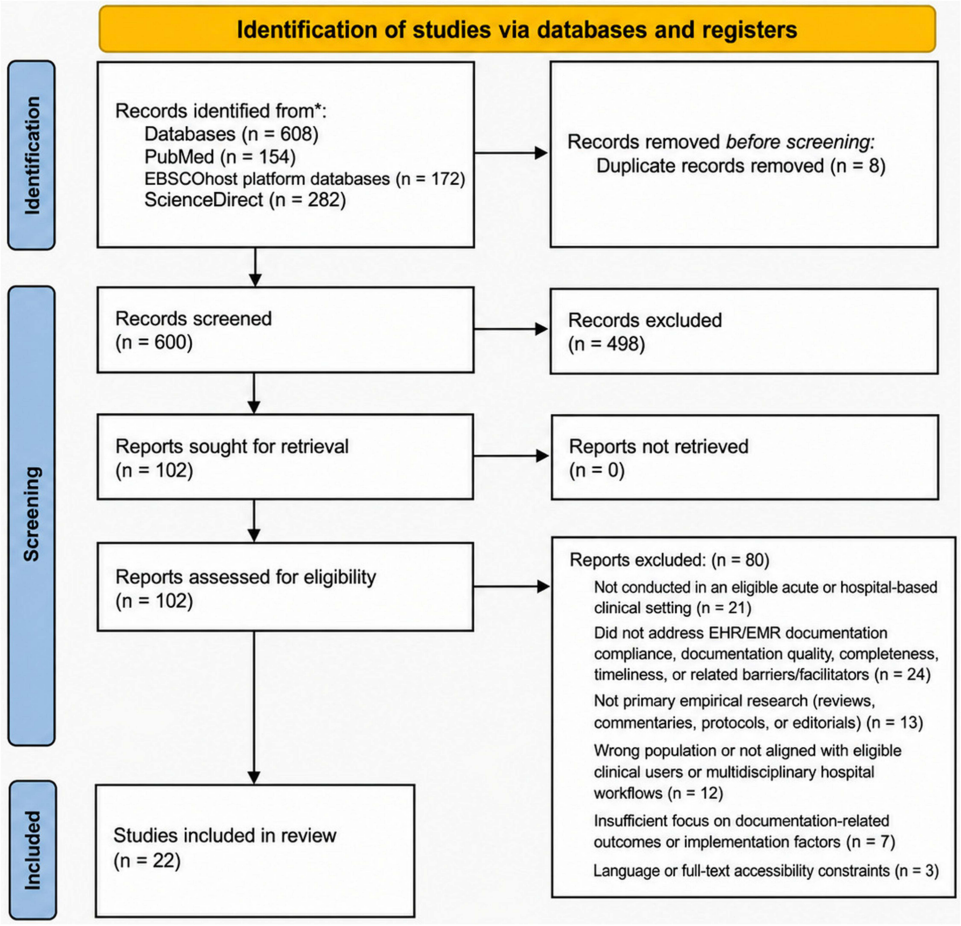

Figure 1 PRISMA-ScR flow diagram of the study selection process. *EBSCOhost refers to the search platform. The specific EBSCOhost databases searched were eBook Collection (EBSCOhost), Literary Reference Source, and Middle Eastern & Central Asian Studies.

services, stroke care units, pediatric inpatient units, neonatal intensive care units, burn units, medical-surgical wards, allied health services, and multidisciplinary acute care environments.

The included studies used varied methodological approaches. Several studies applied qualitative designs, including ethnographic observation, phenomenology, interviews, focus groups, and scenario-based user testing. Other studies used quality improvement designs, pre-post evaluations, interrupted time-series analysis, retrospective cohort analysis, cross-sectional surveys, mixed-methods approaches, and prospective controlled designs. This methodological diversity reflects the scoping purpose of the review and the implementation-focused nature of the evidence base.

The reviewed digital systems also varied considerably. Some studies examined mature EHR or EMR systems in routine use, while others evaluated early post-implementation systems, pre-implementation perceptions, hybrid paper-electronic workflows, nursing information systems, standardized electronic templates, EHR-integrated reminders, dashboards, automated quality-control modules, and specialty-specific documentation tools. Common documentation targets included vital signs, medication reconciliation, nursing documentation, care plans, handoff documentation, oncology staging, advance care planning, goals-of-care notes, central venous catheter management, burn documentation, and registry-ready structured clinical data.

Across the studies, EHR documentation compliance was operationalized in different ways, including timely completion of required documentation, use of standardized templates, completeness of structured data fields, accuracy of recorded clinical information, documentation accessibility and retrievability, adherence to electronic documentation workflows, and audit-based documentation performance. This variation shows that documentation compliance in

multidisciplinary hospital settings extends beyond record completion and also includes documentation quality, structure, visibility, retrievability, and usability for interprofessional care.

Thematic Synthesis of Findings

Based on data extraction and thematic analysis, barriers and facilitators to EHR documentation compliance among multidisciplinary teams were organized into three primary domains: technological factors, individual and behavioral factors, and organizational and environmental factors. These domains are visually summarized in Figure 2 and presented in detail in Table 2.

Technological Factors

Technological factors were consistently reported as key determinants of EHR documentation compliance and multidisciplinary information flow. The main barriers involved system usability, access, interoperability, documentation structure, and information architecture.

Usability and system performance problems were frequently identified. These included slow or unstable system performance, freezing or downtime, high screen burden, limited computer access, cumbersome hardware, multiple logins, and automatic timeouts that disrupted point-of-care documentation.[6,14,33] In pre-implementation settings, perceived system complexity and ease-of-use concerns were also associated with lower intention to use electronic documentation tools.[19]

Fragmented documentation architecture was another recurrent barrier. Several studies reported that clinically important information was distributed across multiple EHR locations, hybrid paper-electronic sources, or documents outside the main patient record. This fragmentation reduced the visibility and retrievability of information needed for handovers,

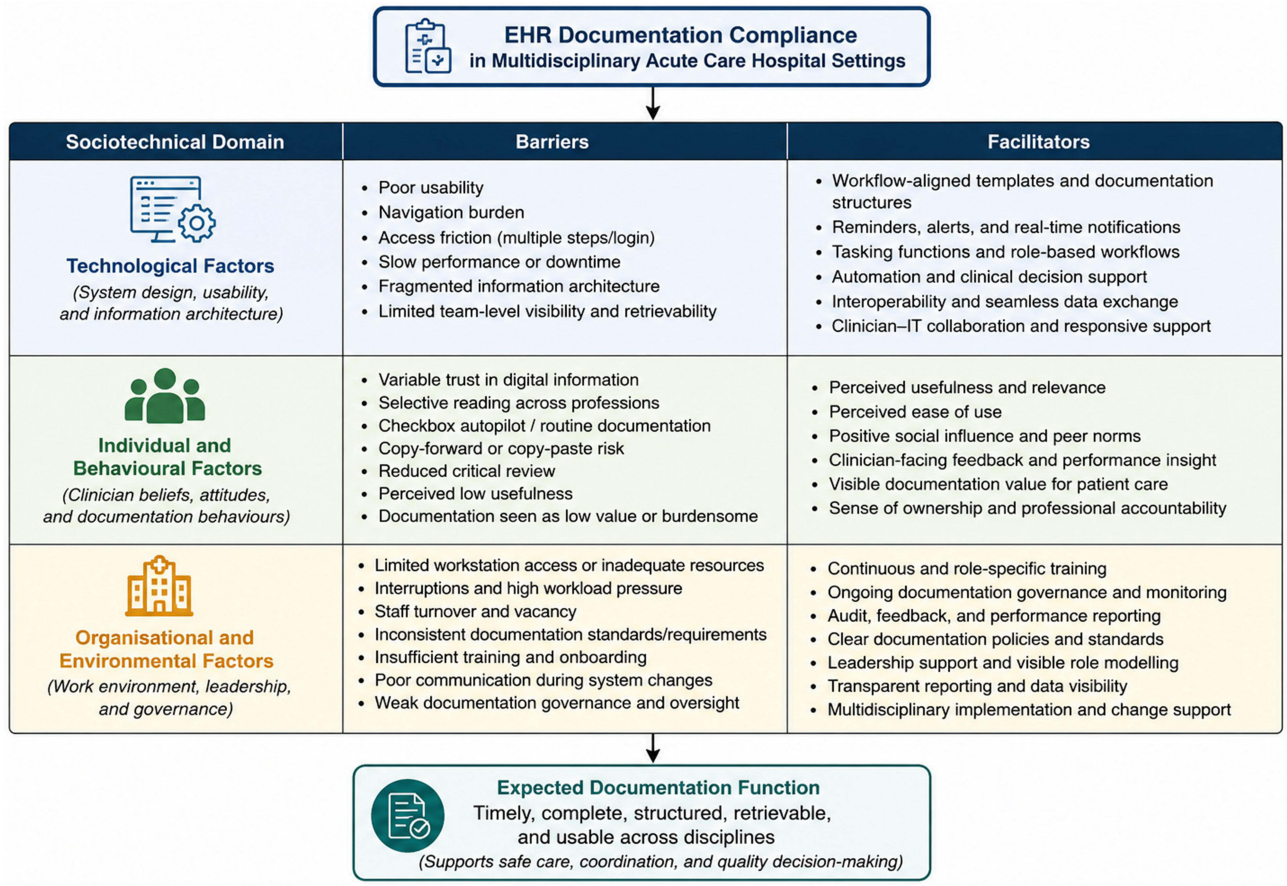

Figure 2 Thematic map of barriers and facilitators influencing EHR documentation compliance in multidisciplinary hospital settings. The map summarizes three interconnected sociotechnical domains: technological factors, individual and behavioural factors, and organisational and environmental factors.

Table 2 Barriers and Facilitators Influencing EHR Documentation Compliance

Author (Year)	Compliance Metrics and Outcomes	Technological Barriers	Individual/ Behavioural Barriers	Organisational/ Environmental Barriers	Technological Facilitators	Individual/ Behavioural Facilitators	Organisational/ Environmental Facilitators
Kossman and Scheidenhelm (2008)[14]	EHR use occupied 25–98% of nurses' shifts, with a median of approximately 50%; initial assessment required multiple screens.	Slow system performance, freezing, downtime, limited computer availability, high screen burden, and constrained fields.	Checkbox, dropdown, and copy-paste functions could reduce critical thinking and documentation accuracy; some nurses were reluctant to face the screen during assessment.	Physicians were inconsistent EHR users; notes were not always read; documentation locations were inconsistent; nurses used paper jotting followed by transcription.	Worklists, automated alerts, portable workstations, and forced entry of key safety data such as allergies before medication administration.	High acceptance and preference for EHR compared with paper.	Multidisciplinary selection committee, staff suggestion mechanisms, and regular review of system use.
Pöder et al (2011)[15]	Knowledge of stroke guidelines increased significantly after EB-SCP implementation; documentation time was unchanged.	Potential documentation redundancy and limited overview of where documentation should be completed.	Staff perceived risk that standardized care plans might miss individual patient needs.	Workload, support, education needs, and staff turnover were implementation challenges.	EB-SCP module integrated in the EHR; quality standards were accessible via EHR links.	EB-SCP was perceived as useful and as facilitating work.	Multiprofessional working team, implementation training, and ongoing introduction for new staff.
Keenan et al (2013)[16]	Nurses spent a substantial proportion of shifts on information work; vulnerabilities included variation in information flow, lack of centralized overview, and limited interprofessional communication.	No centralized EHR care overview; minimal EHR support for handoffs and team communication; paper-electronic duplication.	Variable documentation formats and terminology; use of scraps of paper and transcription to paper.	Non-nursing professionals were rarely present in information flow; communication was often phone-based; interdisciplinary information was rarely documented; interruptions affected documentation.	NR	NR	Unit-level workaround such as dedicated cell phone use in one unit.

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Table 2 (Continued).

Author (Year)	Compliance Metrics and Outcomes	Technological Barriers	Individual/ Behavioural Barriers	Organisational/ Environmental Barriers	Technological Facilitators	Individual/ Behavioural Facilitators	Organisational/ Environmental Facilitators
Sockolow et al (2014)[17]	Scenario testing identified barriers and facilitators to NIS adoption; easier access to other disciplines' notes was reported, although key events still relied on verbal communication.	Difficulty capturing significant events and summarizing clinically important changes; limited support for two-way communication; variability in system use across disciplines.	Continued reliance on verbal communication; structured documentation could miss clinically relevant nuance when available options were insufficient.	Some disciplines did not consistently use the NIS; upgrades and changes required clearer communication and training.	Access to other disciplines' notes and evidence-based documentation structure within the NIS.	Nurses could use the NIS to retrieve relevant patient information and support care planning.	Continuous training, feedback dashboards or metrics, and addition of summaries or significant-event capture to reduce oral-only workarounds.
Sockolow, Bowles et al (2014)[18]	Cross-note access improved, but interdisciplinary communication did not increase substantially.	System functionality did not fully align with interdisciplinary workflow; documentation tools did not automatically create shared team communication.	Users continued to rely on existing communication habits despite improved access to notes.	Limited visibility of the value of documentation for quality, safety, and team communication.	Commercial EHR and NIS enabled point-of-care documentation and cross-note access.	Positive satisfaction and perceived usability could support adoption.	Feedback using quality and safety metrics, better training, and stronger communication about system changes.
Ang et al (2015)[19]	Behavioural intention to use ECMR varied by professional group; social influence and perceived usefulness were important in the preimplementation phase.	System usability concerns could influence intention to use ECMR before implementation.	Differences in attitudes, perceived usefulness, effort expectancy, and social influence across professions.	Need for professional-group-specific preparation before implementation.	ECMR system planned for clinical documentation.	Positive performance expectancy, effort expectancy, and social influence supported intention to use.	Preimplementation engagement, training, supportive climate, and leadership communication tailored to professional groups.

Stevenson-Ågren et al (2018)[20]	No quantitative compliance rate was reported. Qualitative findings showed delayed, incomplete, and fragmented vital sign documentation when staff used paper workarounds and later transferred only some data into the EHR.	EHR was not easily available at the bedside; equipment was cumbersome; excessive clicking; poor accessibility, visibility, readability, and overview of vital sign data; EHR measurement table was unsuitable for frequent vital sign documentation.	Nurses used paper notes, post-it notes, notebooks, and local paper charts because they were faster and closer to the patient. Some vital signs were entered late, selectively entered, or not entered into the EHR. Doctors often asked nurses verbally for the latest vital signs.	Limited point-of-care access, interruptions, infection-control or bedside equipment constraints, ward-specific paper charts, and mismatch between EHR design and clinical workflow.	Suggested improvements included portable or mobile point-of-care documentation tools and better EHR support for frequent vital sign entry and retrieval.	Staff recognized double documentation and transcription error risks and attempted to maintain safe care through workarounds.	Organisational learning from workarounds, redesign of EHR functions, improved point-of-care documentation infrastructure, and frontline involvement in system improvement.
Skyttberg et al (2016)[21]	No single compliance percentage was reported. Findings showed low currency, completeness, and interoperability of vital sign documentation. Only 4 of 9 sites had a completely digitalized vital sign documentation flow. Vital sign data were judged not fit for CDSS use.	EHRs lacked mobile workflow support; paper-based triage records were easier to use at the point of care; EHR documentation had poor usability, low interoperability, inconsistent templates, delayed entry, and limited automatic data transfer from devices.	Staff sometimes relied on individual judgment rather than standardized documentation routines; some staff continued paper documentation even in settings described as digital.	Resistance to digital workflow, lack of standardized re-evaluation process, workload pressure, lack of quality control, and fragmented documentation practices across sites.	Digital documentation templates, automatic calculation support, completeness checks, automatic vital sign registration, device-EHR integration, and interoperable data structures.	Clinical validity checking and staff competence helped improve correctness of documented vital signs.	Standardized care process, management support, staff education, feedback on documentation quality, quality control, workflow support, interoperability improvement, and digital documentation governance.

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Table 2 (Continued).

Author (Year)	Compliance Metrics and Outcomes	Technological Barriers	Individual/ Behavioural Barriers	Organisational/ Environmental Barriers	Technological Facilitators	Individual/ Behavioural Facilitators	Organisational/ Environmental Facilitators
Pain et al (2017)[22]	No quantitative compliance rate was reported. Allied health documentation was used selectively by different professions to inform inpatient decision-making.	Documentation was not always structured in ways that supported easy interpretation by other professions.	Clinicians selectively read notes to answer profession-specific questions rather than to build a holistic patient picture.	Time pressure and profession-specific documentation practices limited shared understanding.	Clearer structure and improved note organization could support information transfer.	Better understanding of allied health roles and documentation value could improve use of notes.	Improve interpretability of allied health documentation, strengthen interprofessional relationships, and design documentation to support cross-professional decision-making under workload constraints.
Hampe et al (2017)[23]	Lund-Browder documentation compliance improved from 74% with paper documentation to 100% with electronic documentation in Q4 2015.	No burn-specific electronic template initially; autototaling and validation build issues; missing dressing options such as "other."	NR	High RN turnover and new staff required repeated re-education; ongoing monitoring was needed.	Burn-specific electronic templates, autototaling, reference-text alerts, and weekly tasking reminders.	NR	Clinician-IT co-design, repeated education, manager audits, and performance improvement monitoring.
Johnson et al (2018)[24]	Medication reconciliation noncompliance decreased from 32% at baseline to 22% after education and 15% after automated Email reminders; improvement was sustained at 13% over the following year.	RxWriter was not intuitive for users; multiple EHR sources for medication lists caused confusion; limited IT resources; redundant tool steps.	Residents lacked knowledge of RxWriter and did not consistently complete reconciliation; accountability was weak.	Competing priorities during admission and discharge, workflow complexity, incomplete training, and unclear medication reconciliation process.	EHR-linked automated daily Email reminders, automated compliance measure, RxWriter medication list, and statistical process control monitoring.	Resident education, chief resident reminders, and patient-specific reminder emails improved accountability.	Lean Sigma process mapping, Ishikawa analysis, leadership support, pharmacist involvement, nurse involvement, resident training, and sustained education.

Liu and Walsh (2018)[25]	Documentation metrics improved after implementation: severity of illness increased by 11.1% (P=0.008), risk of mortality increased by 13.5% (P=0.007), and case mix index increased by 7.7% (P=0.009). H&P and progress note time increased, discharge summary time decreased, provider perception was generally positive, and expected hospital payment increased by US $14,020 per month per patient (P<0.001).	Preintervention documentation was partly dictation-based and partly nonstandardized electronic documentation; data were siloed; redundant data entry occurred; clinical information was not consistently structured or digitally accessible; problem-based functionality was not yet implemented.	Provider resistance and concerns about EHR efficiency; variation in provider documentation structure; concern about time burden for note production.	Complex NICU data streams; redundant maternal-neonatal documentation workflows; need to coordinate provider, nursing, respiratory therapy, obstetric, IT, and CDI documentation needs.	Problem-based Epic documentation platform; standardized H&P, progress note, and discharge summary templates; shared entry and common viewing; smart links; common editable fields; problem list; hospital course note; neonatal handoff; structured discharge summary support.	Provider education, ongoing feedback, and adaptation to the new documentation process. Survey results showed generally positive provider perception of the new documentation system.	Multidisciplinary clinician-IT collaboration, CDI involvement, monthly PDCA refinement, in-service training, and continuous feedback structure.
Thate et al (2021)[26]	No quantitative compliance rate was reported. Findings showed that CVC-related information needs were distributed across paper and electronic sources and were often integrated through oral communication.	Hybrid paper-electronic documentation fragmented CVC-related information; no centralized module or display for key CVC data.	Nurses relied on memory and oral exchange to support collaborative CVC decision-making.	Collaborative CVC decisions depended heavily on informal communication and fragmented information sources.	Suggested centralized interprofessional CVC module, prompts, CDS, and key data displays.	Shared awareness of the need for better CVC information access and collaborative decision-making.	Develop centralized interprofessional CVC documentation tools to support a shared mental model.

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Table 2 (Continued).

Author (Year)	Compliance Metrics and Outcomes	Technological Barriers	Individual/ Behavioural Barriers	Organisational/ Environmental Barriers	Technological Facilitators	Individual/ Behavioural Facilitators	Organisational/ Environmental Facilitators
Kantor et al (2021)[27]	Accessible ACP documentation during hospitalization increased from 11.3% to 24.6%. Any accessible ACP documentation before discharge increased from 28.1% to 41.6%. ACP Navigator access increased from 39.8% to 52.2% among encounters with ACP documentation.	ACP documentation was fragmented across multiple EHR locations; ACP Navigator access required multiple clicks; clinicians could not easily retrieve prior ACP conversations.	Clinicians were unaware of the ACP Navigator and lacked consistent documentation habits; ACP documentation was not well integrated into daily clinical workflow.	Lack of standard documentation guidelines, limited leadership messaging, no routine performance feedback, and underuse of centralized ACP documentation.	ACP Navigator, ACP SmartPhrase, patient-header visibility, ACP Note, and automatic routing of ACP documentation into a centralized EHR location.	Clinicians could document ACP within their usual note-writing workflow using the ACP SmartPhrase, reducing workflow disruption.	Gap analysis, educational campaign, "Ask About What Matters" messaging, service leadership engagement, monthly task force meetings, audit and feedback, and quality metric monitoring.
Lee et al (2022)[28]	Timely TNM staging documentation improved from 5.6% to 67.4% (P<0.001), reached 78.1% in the final month, and reached 95–97–93% during Dec 2019–Feb 2020; clinician experience was inversely associated with compliance (OR 0.98).	Staging form design barriers; incorrect or redundant problem-list diagnoses.	Lower compliance was associated with more years in practice.	Registrar workload redundancy occurred when staging documentation was missing.	Groupers-triggered staging form, Epic Crystal tracking, best-practice advisory, and automated in-basket reminders.	Peer comparison effect through named reports.	Stakeholder meetings, eLearning, individualized training, ongoing audits, and feedback.

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Canfell et al (2022)[6]	Ethnographic findings showed blended paper-digital workflows; EMR use was described as broadly seamless in some workflows, with no observed harm.	Workstations on wheels were cumbersome; multiple logins; auto-timeout causing note loss; pharmacy interoperability gaps; no digital patient overview.	Alert fatigue; variable trust in digital-only information; screen use could hinder patient-clinician rapport.	Hierarchical rapid-login access and workstation placement obstructed space and workflow.	QuickFill, Auto-Text, ID scanning, multitasking/navigation efficiencies.	Adaptive blended workflows and clinical opportunism.	Executive support, governance, and early clinician engagement.
Schell et al (2023)[29]	Goals-of-care documentation increased among high-risk patients from 17.6% to 70.8% and among intermediate-risk patients from 9.6% to 28.0%, both P<0.0001. Total GOC documentation increased from 3.7% to 9.3%.	Separate GOC documentation outside usual workflow was difficult for clinicians. Some conversations continued to be documented in unstandardized clinical notes, reducing continuity and retrievability.	Clinician skepticism toward the mortality prediction model; need for clinical judgment because the model did not replace patient-specific decision-making; primary teams did not consistently complete documentation, especially for intermediate-risk patients.	Reliance on specialty palliative care, limited scalability, need for ongoing education, and single academic-center implementation.	Centralized GOC note, EHR-visible SIRI risk score, automated notifications, dashboard tracking, and targeted palliative care consults.	Education improved understanding of the prediction model and documentation process; primary teams increased documentation for high-risk patients after alerts.	Hospital leadership support, multidisciplinary clinician input, weekly and biweekly implementation meetings, service-line engagement, education sessions, dashboard feedback, and palliative care collaboration.
Evans et al (2024)[30]	Standardized ED note template use reached 82.0% of ED encounters after implementation. Highest acuity coding increased by 1%, and second-highest acuity coding remained unchanged.	Six legacy templates created variation; personal templates caused fragmented documentation, maintenance problems, and inconsistent EHR navigation.	Providers had varied documentation preferences; over-standardization could reduce flexibility.	No formal oversight of personal templates before intervention; new 2023 coding guidelines created documentation pressure.	Standardized ED note template, Epic default template, smart lists, NoteWriter MDM smart block, optional attestation smart list, and flexible documentation tools.	Providers retained flexibility through optional smart lists, smart blocks, personal templates, and voice-to-text support.	Multidisciplinary design group, medical directors, ED clinicians, billing/coding teams, EHR analysts, nursing informaticist, physician builder, pilot testing, and targeted education.

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Table 2 (Continued).

Author (Year)	Compliance Metrics and Outcomes	Technological Barriers	Individual/ Behavioural Barriers	Organisational/ Environmental Barriers	Technological Facilitators	Individual/ Behavioural Facilitators	Organisational/ Environmental Facilitators
Franco Vega et al (2024)[31]	I-PASS written tool adherence improved from 41.6% in 2019 to 70.5% in 2022. Handoff favorability score improved from 38% in 2018 to 59% in 2022.	No auto-populated information, handoff tab not widely known, excessive manual entry, difficulty seeing other teams' handoffs, and limited access away from desktop.	Some providers preferred email, perceived handoffs as redundant, or relied on progress notes; lack of standardized handoff habits.	Handoff practices varied across services; training was not part of orientation; competing initiatives delayed implementation.	EHR I-PASS tool, smart phrases, auto-populated data, dashboard monitoring, red/green update cues, handoff history links, EHR phone app access, and single-view handoff access.	I-PASS champions supported adoption, training, periodic checks, and one-to-one coaching.	Provider Handoff Task Force, leadership buy-in, QAPI reporting, mandatory training for trainees and APPs, quarterly feedback, and interprofessional implementation.
Zhang et al (2024)[32]	False vital sign data decreased from 9% to 1.33%. Incomplete medication administration decreased from 3.33% to 1.67%. Missing assessment items decreased from 8% to 1.33%. QC time decreased from 264 seconds to 62 seconds per record.	Manual EMR verification was time-consuming and error-prone; patient movement caused pseudo-data; network or PDA malfunction could affect medication documentation.	ICU nurses could miss pain, nutrition, restraint, or other assessments during high workload.	Manual quality control required substantial nursing time and was influenced by subjective judgment.	Automated EMR QC system, real-time data capture, monitor and ventilator integration, PDA medication scanning, color-coded vital-sign display, alerts, reminders, and predefined QC rules.	Nurses corrected data after system reminders and reported high satisfaction with the system.	Nurse leader, nurse researcher, and information engineer collaboration; predefined documentation rules; real-time QC governance; and reduced manual inspection burden.

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Thate et al (2025)[33]	No quantitative compliance rate was reported. Findings identified four usability-related themes contributing to excessive documentation burden: forced/inaccurate EHR responses, lengthy flowsheets, checkbox-driven documentation, and ongoing updates with inadequate training.	EHR rules and logic forced or limited responses; lengthy flowsheets required excessive scrolling and clicking; poor searchability; difficulty finding the correct documentation location; structured fields failed to capture patient-specific context; ongoing changes disrupted usability.	Nurses experienced tension between patient care needs and documentation requirements; checkbox completion reduced meaningful information capture; structured documentation could encourage inaccurate entries; nurses had difficulty distinguishing required from optional documentation.	Quality and regulatory documentation requirements increased burden; ongoing EHR updates were poorly communicated; inadequate training; lack of standardization across documentation workflows.	Current strategies included block charting, charting by exception, photo capture, and visual avatars. Future innovations included autocapture, voice-to-text, device integration, autogeneration, and AI-supported documentation, although verification burden remained a concern.	Nurses valued documentation that supports patient care, clinical reasoning, and meaningful communication. Free-text comments helped capture context not available in structured options.	Recommendations included developing consensus on essential EHR data elements, minimizing unnecessary structured data entry, involving nurses in documentation redesign, and improving training and usability governance.
Bun et al (2026)[34]	Aggregate data completeness was 77.2%. Inpatient therapy documentation was 99.5%, medical history documentation was 40.4%, and NYHA class, discharge weight, and NIK had 0% structured completeness.	EMR data were often stored in unstructured free text; structured fields were limited; data from nursing notes did not automatically populate physician discharge summaries; technical limitations and "interconnectedness" bugs affected data reliability.	Clinicians preferred narrative documentation, used abbreviations such as "FC," and prioritized Stevenson profiles over NYHA in acute care. Negative findings were often omitted.	Reimbursement-driven coding culture, BPJS claim requirements, coding approximation using I50.9, data fragmentation, and weak data governance.	Structured data fields, mandatory high-value variables, auto-population between EMR modules, dropdown fields, and data synchronization.	Awareness that some missing variables reflected data capture gaps rather than absent clinical assessment.	Hospital data governance, registry-oriented documentation standards, clinical coding improvement, and interprofessional coordination between clinicians, nurses, medical records, and IT.

Abbreviations: ACP, advance care planning; APP, advanced practice provider; BPJS, Badan Penyelenggara Jaminan Sosial; CDI, clinical documentation improvement; CDSS, clinical decision support system; CVC, central venous catheter; EB-SCP, evidence-based standardised care plan; ECMR, electronic clinical medical record; ED, emergency department; EHR, electronic health record; EMR, electronic medical record; GOC, goals of care; H&P, history and physical; ICU, intensive care unit; IT, information technology; MDM, medical decision-making; NICU, neonatal intensive care unit; NIK, national identity number; NIS, nursing information system; NR, not reported; NYHA, New York Heart Association; PDA, personal digital assistant; PDCA, plan-do-check-act; QAPI, Quality Assessment and Performance Improvement; QC, quality control; SIRI, Serious Illness Risk Indicator; TNM, tumour-node-metastasis; WoW, workstation on wheels.

rounds, and collaborative decision-making.[16,26,27,34] Interoperability gaps also created duplication and double handling when EHR systems were not well integrated with pharmacy software, registry requirements, nursing notes, physician summaries, or other clinical modules.[6,34]

Structured documentation had both benefits and limitations. Templates, dropdown menus, checkboxes, smart phrases, and standardized note formats supported consistency, completeness, and auditability. However, limited structured options could restrict clinically relevant detail, encourage free-text workarounds, increase documentation burden, and reduce the usefulness of notes across professions.[14,17,22,23,30,33] In stroke care, documentation redundancy persisted when staff lacked a clear overview of where information should be recorded in the EHR.[15]

Several technological facilitators supported documentation compliance. These included workflow-aligned templates, standardized note structures, reminders, alerts, tasking functions, embedded advisories, smart phrases, dashboards, auto-populated fields, mobile access, device integration, and automated quality-control systems.[14,23,24,27–29,31,32] For example, oncology staging compliance improved through EHR-triggered staging forms, tracking functions, best-practice advisories, and automated in-basket reminders.[28] Burn documentation was supported by unit-specific templates, autototaling, and pop-up alerts.[23] Handoff documentation improved through an EHR-based I-PASS tool with dashboard monitoring, update cues, mobile access, and single-view handoff access.[31] ICU documentation quality improved through automated quality-control functions, real-time data capture, monitor and ventilator integration, medication scanning, alerts, and reminders.[32]

However, improved technical access did not automatically improve interdisciplinary communication. One evaluation found that access to other clinicians' notes improved satisfaction and information availability, but did not substantially increase interdisciplinary communication without supporting workflow, training, and implementation strategies.[18] Overall, the technological findings showed that documentation compliance was influenced by the usability, integration, workflow alignment, visibility, and retrievability of EHR documentation tools across professional groups.

Individual/Behavioral Factors

Individual and behavioral factors described how clinicians accepted, produced, verified, and used EHR documentation in daily practice. The main barriers involved variable adoption readiness, trust in digital information, workaround behaviors, selective use of documentation, and over-reliance on structured or convenience features.

Clinician beliefs and experience influenced documentation behavior. In a hospital-wide oncology intervention, greater years of provider experience were associated with lower timely staging compliance, suggesting that sustained adherence may vary by clinician tenure.[28] In a pre-implementation study of an electronic clinical measurement record, intention to use was influenced by performance expectancy, effort expectancy, and social influence. During digital transition, some clinicians were hesitant to rely only on digital records and used paper records or peer confirmation as additional sources of truth.[6] Similar trust and reliability concerns were also reported when clinicians needed to verify automated, structured, or system-generated information before using it for care decisions.[29,33]

Workaround behaviors were common when EHR documentation did not fit clinical workflow or information needs. Nurses used informal paper notes, "scraps," and transcription practices to manage handoffs and information flow when documentation was difficult to retrieve or inconsistently recorded.[16] Other studies reported continued use of email, progress notes, narrative documentation, abbreviations, or non-standard documentation habits when structured EHR tools were perceived as redundant, incomplete, or poorly aligned with clinical practice.[31,34]

Behavioral risks linked to structured documentation and convenience features were also identified. Checkbox- and dropdown-driven documentation, copy-paste, and copy-forward functions could reduce critical review and documentation accuracy when clinicians used them without reassessing the current patient situation.[14,35] Structured fields could also limit clinically meaningful detail when available options did not reflect patient-specific context.[22,33] At the interprofessional level, clinicians did not always use documentation to build a holistic understanding of the patient. Allied health notes, for example, were often read selectively to answer profession-specific questions rather than to support broader shared understanding.[22]

Facilitators in this domain focused on improving perceived usefulness, ease of use, accountability, and the visible value of documentation. Positive performance expectancy, effort expectancy, and social influence supported readiness to use electronic documentation systems.[19] Clinician-facing feedback, peer comparison, reminders, champions, and one-to-

one coaching helped reinforce documentation behaviors by showing how documentation supported care quality, safety metrics, handoff reliability, and team communication.[18,28,31] Overall, the individual and behavioral findings showed that documentation compliance was shaped not only by clinicians' willingness to complete required fields, but also by how they trusted, verified, interpreted, and used documented information across professional boundaries.

Organizational/Environmental Factors

Organizational and environmental factors shaped whether clinicians could document as intended and whether documentation supported multidisciplinary coordination. The main barriers involved workload pressure, interruptions, limited documentation resources, inconsistent standards, staff turnover, weak implementation communication, and documentation practices that occurred outside the EHR.

Several studies reported structural pressures that increased documentation burden or disrupted timely documentation. These included high documentation time demands, interruptions, constrained workstation access, limited computer availability, system downtime, and inefficient information flow.[6,14,16,33] These conditions reduced clinicians' ability to document at the point of care and contributed to delayed entry, paper workarounds, or duplicated documentation.

Implementation-stage factors were also important. Staff turnover, new staff onboarding, system upgrades, inconsistent communication about EHR changes, and variability in documentation standards across units affected sustained compliance.[15,23,35] In several implementation studies, repeated education, ongoing monitoring, and clear communication were needed to maintain documentation adherence after system rollout or workflow redesign.[23,24,27,31]

Organizational and sociocultural dynamics also influenced how documentation was used across professions. Interprofessional communication was often limited, undocumented, or conducted outside the formal record.[16,26] In CVC management, clinically relevant information was distributed across paper and electronic sources, while oral communication helped clinicians integrate the clinical picture during rounds and collaborative decision-making.[26] Similarly, improved access to other clinicians' notes did not necessarily increase interdisciplinary communication without workflow-aligned practices, shared expectations, and implementation support.[35] In handoff documentation, some clinicians continued to rely on email, progress notes, or local habits when standardized EHR tools were not fully embedded into routine practice.[31]

Facilitators in this domain were mainly managerial and governance-related. These included structured audit and feedback, transparent performance reporting, leadership support, stakeholder engagement, clinician-IT collaboration, training infrastructure, service champions, and routine monitoring.[23,28,29,31,32] Examples included named compliance reporting and automated reminders for oncology staging documentation, clinician-IT co-design and audit processes in burn documentation, dashboard monitoring and mandatory training for handoff documentation, and automated quality-control governance for ICU nursing documentation.[23,28,31,32]

Overall, the organizational and environmental findings showed that sustainable EHR documentation compliance depends on more than technical system availability. It also requires clear documentation standards, continuous training, workflow governance, feedback loops, leadership support, and routines that make documentation visible and useful across professional groups.

Multidisciplinary Impact and Managerial Implications

Across the included studies, EHR-enabled documentation shaped multidisciplinary care by influencing how clinicians found, interpreted, and used information documented by other professions. Although electronic systems improved access to clinical information and supported some point-of-care efficiencies, access alone did not consistently improve interdisciplinary communication or shared situational awareness. One evaluation reported that access to other clinicians' notes improved satisfaction and information availability, but did not substantially increase interdisciplinary team communication.[18]

Several studies showed that fragmented documentation continued to drive reliance on oral communication. This was especially evident when clinically important information was distributed across multiple EHR locations, hybrid paper-electronic sources, or documents outside the formal patient record.[16,26] In CVC management, for example, collaborative decision-making depended heavily on oral exchange because relevant information was spread across paper and electronic sources.[26] Discipline-specific differences also affected multidisciplinary use. During digital hospital transition, EHR workflows

were more aligned with medical and nursing activities than with allied health and pharmacy workflows, while rapid-login access, workstation placement, and cumbersome workstations shaped how different professional groups engaged with digital documentation at the point of care.[6] The interpretability of documentation also mattered. Allied health notes were often used selectively to answer profession-specific questions rather than to support a holistic understanding of the patient.[22]

Recent implementation studies further showed that multidisciplinary impact improved when EHR documentation tools were embedded into routine team workflows. Centralized goals-of-care documentation improved access to clinically important information across primary teams and specialty palliative care.[29] Standardized I-PASS handoff documentation improved shared access to handoff information across inpatient services.[31] Automated quality-control functions improved the reliability of ICU nursing documentation, supporting safer information use by the clinical team.[32] Registry-oriented documentation also showed the need for stronger coordination between clinicians, nurses, medical records staff, and IT teams to improve structured data completeness and interprofessional data use.[34]

From a managerial perspective, the evidence suggests that sustainable documentation compliance and meaningful multidisciplinary use require sociotechnical governance, not only system deployment. Effective approaches combined workflow-aligned system design, clear documentation standards, continuous training, clinician-IT collaboration, leadership support, and audit-feedback mechanisms. Examples included clinician-IT co-design and routine audits to maintain burn documentation compliance, structured reporting and automated reminders to improve oncology staging documentation, leadership engagement and centralized documentation tools for goals-of-care documentation, dashboard monitoring and mandatory training for handoff documentation, and automated quality-control governance for ICU documentation.[23,28,29,31,32]

Overall, the findings indicate that EHR documentation supports multidisciplinary care when it is visible, retrievable, interpretable, and embedded in shared clinical workflows. A condensed summary of the reported multidisciplinary impacts and actionable managerial implications across studies is presented in Table 3.

Table 3 Multidisciplinary Impact and Managerial Implication

Author (Year)	Multidisciplinary Impact	Managerial Implications
Kossman and Scheidenhelm (2008)[14]	Interprofessional use of EHR documentation was limited because physicians did not consistently read nurses' notes and documentation locations were inconsistent. Nurses often used paper jotting before later transcription into the EHR, reducing the timeliness and shared usability of documentation.	Involve bedside nurses and other frontline clinicians in EHR selection, redesign, and evaluation. Managers should streamline documentation screens, improve system speed and hardware access, clarify documentation locations, and set clear expectations for documentation quality and interdisciplinary use.
Pöder et al (2011)[15]	The evidence-based standardised care plan supported multiprofessional stroke care involving nurses, physiotherapists, and occupational therapists. However, perceived redundancy and unclear documentation locations could limit efficient interprofessional use.	Continue structured training and onboarding for new staff. Improve EHR navigation and overview functions to reduce redundancy, and maintain multiprofessional involvement when standardised care plans are implemented or revised.
Keenan et al (2013)[16]	Interdisciplinary communication was rare, and the EHR did not provide a shared overview of the patient care plan across disciplines. Nurses relied on paper artefacts, transcription, and informal communication to manage information flow.	Standardise core documentation content and terminology across disciplines. Implement usability testing for interdisciplinary documentation tools and develop shared EHR-based care overview functions to support team communication and reduce paper-electronic duplication.
Sockolow et al (2014)[17]	Access to other disciplines' notes became easier, but key patient events and changes still relied on verbal exchange. Some disciplines did not consistently use the Nursing Information System, limiting its ability to function as a shared multidisciplinary information source.	Develop two-way communication channels within the EHR, provide continuous training, and use feedback dashboards or metrics to show the clinical value of documentation. Add summary fields or significant-event capture to reduce reliance on oral-only communication.

(*Continued*)

Table 3 (Continued).

Author (Year)	Multidisciplinary Impact	Managerial Implications
Sockolow, Bowles et al (2014)[18]	Cross-note access improved, but interdisciplinary communication did not increase substantially. Technical access to notes alone was insufficient to create stronger multidisciplinary collaboration.	Align system functionality with real interdisciplinary workflows. Use quality and safety metrics to make documentation value visible, and strengthen training and communication about system changes.
Ang et al (2015)[19]	Behavioural intention to use the electronic clinical medical record differed across professional groups. Social influence and perceived usefulness were important before implementation, indicating that different professions may require different implementation approaches.	Prioritise usability, supportive climate, and leadership communication during preimplementation. Deliver profession-specific engagement and training for physicians, registered nurses, and enrolled nurses before system rollout.
Stevenson-Ågren et al (2018)[20]	Fragmented and delayed vital sign documentation limited doctors' ability to retrieve current patient information directly from the EHR. Doctors often relied on nurses' memory, paper notes, or verbal communication to obtain the latest vital signs, weakening the EHR as a shared multidisciplinary information source.	Improve EHR fit with bedside workflow, provide point-of-care access, reduce double documentation, and redesign vital sign displays for frequent measurements. Treat paper and verbal workarounds as signals of system design failure rather than staff noncompliance.
Skyttberg et al (2016)[21]	Poor vital sign documentation quality limited the ability of multidisciplinary emergency teams and CDSS tools to use vital sign data reliably. Delayed, incomplete, or non-interoperable data reduced shared situational awareness and decision support readiness.	Improve EHR documentation through standardised emergency care workflows, mobile point-of-care documentation, device integration, interoperability, staff education, and routine quality control. Treat continued paper use as a sign of poor workflow fit, not merely user resistance.
Pain et al (2017)[22]	Allied health notes were used differently by other professions, and selective reading limited holistic understanding of the patient. Documentation supported decision-making only when it was interpretable and relevant across professional boundaries.	Improve the interpretability and structure of allied health documentation. Strengthen interprofessional relationships and design documentation to support information transfer under time and workload constraints.
Hampe et al (2017)[23]	Electronic burn documentation improved standardisation and made documentation compliance easier to audit. Multidisciplinary involvement was important because the tool affected physicians, nurses, and IT builders involved in burn care documentation.	Use clinician-IT co-design, unit-specific templates, repeated education, manager audits, and performance improvement monitoring. Maintain re-education during staff turnover and monitor compliance after go-live.
Johnson et al (2018)[24]	Medication reconciliation involved residents, nurses, pharmacists, patients/families, and attending physicians. Automated reminders improved resident accountability and supported safer medication communication during admission.	Use automated EHR-linked reminders, clear accountability, education, process mapping, and electronic compliance monitoring to improve documentation adherence in medication-related workflows.
Liu and Walsh (2018)[25]	The problem-based NICU EHR supported shared entry and common viewing of maternal, neonatal, nursing, respiratory therapy, and provider information. It reduced redundant workflows and improved structured documentation for multidisciplinary NICU care.	Use multidisciplinary clinician-IT collaboration, standard templates, PDCA cycles, provider education, clinical documentation improvement feedback, and balancing measures such as provider satisfaction and time burden when redesigning EHR documentation.

(*Continued*)

Table 3 (Continued).

Author (Year)	Multidisciplinary Impact	Managerial Implications
Thate et al (2021)[26]	Collaborative CVC decision-making was held together by oral communication because documentation was fragmented across paper and electronic sources. Important information was not always centralised in the patient record.	Develop a centralised interprofessional CVC documentation module with prompts, clinical decision support, and key data displays to support a shared mental model across nurses and other ICU clinicians.
Kantor et al (2021)[27]	Centralised ACP documentation improved retrievability and increased viewing by physicians and nurses. The ACP SmartPhrase allowed clinicians to document ACP without leaving normal note-writing workflow, improving interprofessional access to patient preferences.	Make important documentation visible, centralised, and easy to complete within existing workflows. Use audit logs to monitor whether documentation is accessed, not only whether it is completed.
Lee et al (2022)[28]	Standardised TNM staging documentation improved the availability of oncology staging information for multidisciplinary cancer care. Missing staging documentation created workload redundancy for cancer registrars and limited team access to structured staging data.	Use automated reminders, EHR-triggered staging forms, tracking reports, peer comparison, stakeholder meetings, eLearning, individualised training, and ongoing audit-feedback to sustain compliance.
Canfell et al (2022)[6]	Early post-go-live EMR use shaped multidisciplinary work differently across professional groups. Medical and nursing workflows were more aligned with the EMR than allied health and pharmacy workflows, while workstations, login access, and lack of digital overviews affected point-of-care collaboration.	Provide strong executive support, early clinician engagement, and governance during digital hospital implementation. Address profession-specific workflow needs, rapid-login access, workstation placement, pharmacy interoperability, and digital patient overview functions.
Schell et al (2023)[29]	Centralised goals-of-care documentation improved access to information across primary teams and specialty palliative care. However, the initiative still depended heavily on specialty palliative care, especially for intermediate-risk patients, which may limit scalability.	Use EHR-integrated risk stratification, centralised documentation, automated reminders, dashboards, and targeted consult pathways. Pair technical tools with clinician education, leadership support, workflow alignment, and ongoing feedback.
Evans et al (2024)[30]	Standardised ED note templates improved consistency of provider documentation across academic and community EDs while preserving some flexibility in documentation workflow.	Standardisation should not mean rigid documentation. Combine default templates, clinician input, billing/coding alignment, pilot testing, flexible smart tools, and EHR governance.
Franco Vega et al (2024)[31]	The I-PASS tool improved standardised handoff documentation across inpatient primary and consulting services. It reduced reliance on Email and improved shared access to handoff information across departments.	Use task forces, service champions, dashboards, mandatory training, QAPI reporting, and real-time compliance feedback to sustain documentation compliance across multiple units.
Zhang et al (2024)[32]	The ICU nursing EMR quality control system improved reliability of documentation for vital signs, medication administration, and nursing assessments. Better documentation quality supported safer ICU team decision-making and more reliable patient records.	Invest in automated quality control systems, device integration, real-time reminders, predefined documentation rules, and nurse-IT collaboration to reduce documentation errors and manual audit workload.
Thate et al (2025)[33]	Excessive documentation burden reduced the usefulness of documentation for patient care and could produce inaccurate structured data. This affects downstream information use by other clinicians and creates risk for AI tools that depend on previously documented EHR data.	Reduce unnecessary structured documentation, clarify essential data elements, improve EHR usability, involve nurses in documentation redesign, provide better training during updates, and apply governance before using AI or automation for documentation workflows.

(*Continued*)

Table 3 (Continued).

Author (Year)	Multidisciplinary Impact	Managerial Implications
Bun et al (2026)[34]	Documentation gaps affected registry readiness and interprofessional data use. Nursing data, physician summaries, medical records coding, and IT systems were not fully synchronised, causing structured data loss despite clinical information being present in narratives.	Shift EMR use from billing-centred documentation to clinical registry-ready documentation. Prioritise mandatory structured fields, auto-population across modules, terminology standardisation, coding governance, and stronger clinician-nurse-IT-medical record collaboration.

Abbreviations: ACP, advance care planning; CDSS, clinical decision support system; CVC, central venous catheter; ED, emergency department; EHR, electronic health record; EMR, electronic medical record; ICU, intensive care unit; IT, information technology; NICU, neonatal intensive care unit; PDCA, plan-do-check-act; QAPI, Quality Assessment and Performance Improvement; TNM, tumour-node-metastasis.

Discussion

Principal Findings

This scoping review mapped empirical evidence on barriers and facilitators influencing EHR documentation compliance in multidisciplinary acute care hospital settings. The findings show that documentation compliance is not determined only by individual clinician behavior or technical system availability. Instead, it is shaped by sociotechnical interactions among EHR design, system performance, clinician trust and documentation behavior, workflow demands, organizational standards, training, and governance.

This review contributes to the literature by framing EHR documentation compliance as a multidisciplinary information-use problem, not merely as a record completion or technology adoption issue. This framing highlights the need to evaluate documentation by its timeliness, completeness, structure, retrievability, accuracy, and usability across professional boundaries.

Across the included studies, poor workflow fit emerged as a central issue. EHR systems supported documentation when they improved access, structure, visibility, and auditability of clinical information. However, they also created barriers when documentation was fragmented across multiple locations, difficult to retrieve, poorly aligned with clinical workflow, or dependent on duplicate entry. These conditions can delay documentation, reduce completeness, weaken information quality, and limit the usefulness of documentation for handovers, rounds, care planning, and multidisciplinary decision-making.

Technology and Workflow Fit as Foundational Determinants

Technology and workflow fit emerged as foundational determinants of EHR documentation compliance. Across studies, the most consistent technological barriers involved poor usability, access friction, fragmented information architecture, and limited alignment between EHR functions and real clinical workflows. These barriers affected whether clinicians could document at the point of care, retrieve relevant information, and use documentation for multidisciplinary decision-making.

Usability problems created direct barriers to timely and complete documentation. Reported issues included slow system performance, downtime, limited computer availability, high screen burden, cumbersome workstations, multiple logins, automatic timeouts, and interoperability gaps that required duplicate handling of information.[6,14,33] These findings show how EHR systems can diverge from work-as-done, prompting clinicians to delay documentation, duplicate information, or rely on parallel paper artefacts to maintain clinical workflow.[6,16] External evidence also shows that documentation burden and fragmented systems can consume clinical time and contribute to dissatisfaction and inefficiency.[36,37]

Information fragmentation was another recurring challenge. Several studies showed that clinically important information was distributed across multiple EHR locations, hybrid paper-electronic sources, or documents outside the formal patient record. This reduced team-level visibility and made it harder for clinicians to retrieve an integrated picture of patient status, care plans, and clinical risks.[16,26,27,34] In CVC management, for example, information needed for collaborative decision-making was dispersed across paper and electronic sources, requiring oral communication to integrate the clinical picture.[26]

These findings suggest that documentation compliance should not be interpreted only as completion of required fields. In multidisciplinary acute care, compliance also depends on whether documentation functions as a reliable, retrievable, and usable communication infrastructure. EHR tools are more likely to support compliance when they reduce workflow

friction, centralize important information, improve interoperability, and make documentation visible across professional groups.

Behavioural Risks and Trust

Beyond workflow friction, several studies identified behavioral mechanisms that may weaken documentation quality and cross-disciplinary usefulness. Structured documentation and convenience features, such as checkboxes, drop-down menus, copy-paste, and copy-forward functions, can support faster documentation. However, they may also reduce critical review, encourage inaccurate carryover, and limit the capture of clinically meaningful patient-specific details when structured options are insufficient.[14,17,33]

These risks align with broader concerns about automation complacency and documentation inflation. When clinicians can easily replicate or template information, they may pay less attention to whether the documented content still reflects the current clinical situation.[8,38] In multidisciplinary care, this issue is important because other clinicians may rely on previously documented information for handovers, rounds, care planning, and decision-making.

Documentation effectiveness also depends on how clinicians read and interpret information produced by other professions. Allied health notes, for example, were often read selectively to answer profession-specific questions rather than to build a holistic understanding of the patient.[22] This selective use may limit shared situational awareness, even when documentation is technically accessible.

Trust in digital information was another important behavioral factor. During digital transition, some clinicians hesitated to rely only on digital records and used paper sources or peer confirmation to validate clinical information. Alert fatigue also contributed to rapid dismissal of decision-support prompts.[6] These findings suggest that documentation compliance is shaped not only by whether clinicians complete required documentation, but also by how they trust, verify, interpret, and reuse information within the EHR environment.

Governance and Sustainability

Organizational governance was central to sustaining EHR documentation compliance. Several studies showed that documentation adherence could decline when implementation relied only on initial training or system deployment. Staff turnover, onboarding of new clinicians, system upgrades, unclear communication, and inconsistent documentation standards across units contributed to variability in documentation practices.[15,18,23] In specialty documentation conversion, high nursing turnover and the arrival of new staff were associated with periodic compliance declines, requiring repeated education and ongoing audit processes.[23] In the Nursing Information System evaluation, nurses reported confusion related to system upgrades, inadequate communication, and inconsistent standards across units.[17] Similarly, in the implementation of evidence-based standardized care plans for stroke care, staff perceived the tool as useful and showed improved guideline knowledge, but documentation time did not decrease and redundancy remained a concern.[15] These findings indicate that standardization must be supported by clear documentation locations, navigation support, communication, and continuous training.

Studies that combined governance mechanisms with EHR-enabled prompts and feedback reported stronger documentation improvements. Oncology staging documentation improved through standardized workflows, automated reminders, audit and reporting infrastructure, and training.[28] Handoff documentation improved when the EHR-based I-PASS tool was supported by service champions, dashboard monitoring, mandatory training, and routine feedback.[31] Goals-of-care documentation also improved through leadership engagement, centralized EHR tools, automated notifications, education, and dashboard feedback. ICU nursing documentation quality improved through automated quality-control rules, real-time reminders, and collaboration between nursing leaders, nurse researchers, and information engineers.[32]

Overall, these findings suggest that sustainable documentation compliance requires more than technical tools. It depends on governance routines that maintain clear standards, continuous training, audit and feedback, leadership support, clinician-IT collaboration, and role-specific implementation support. Documentation compliance should therefore be managed as an ongoing clinical and organizational process, not as a one-time system implementation or an individual clinician responsibility.

Access–Communication Gap

A key cross-cutting finding was that improved access to digital documentation did not automatically translate into stronger interdisciplinary communication. Electronic systems could make clinical notes more available, but access alone was insufficient when documentation was fragmented, difficult to interpret, or not embedded in shared team workflows.

One hospital evaluation found that cross-note access improved satisfaction and information availability, but did not substantially increase interdisciplinary communication.[18] Similarly, when documentation was distributed across multiple EHR locations, hybrid paper-electronic sources, or documents outside the formal patient record, teams continued to rely on verbal exchange to integrate the clinical picture.[16,26] In CVC management, oral communication helped clinicians maintain collaborative decision-making when relevant information remained dispersed across paper and electronic sources.

This access–communication gap suggests that multidisciplinary communication requires more than digital availability of notes. It also requires usable summaries, centralized information displays, interoperability, shared documentation standards, training, and accountability for cross-disciplinary documentation use. These findings reinforce that EHR documentation compliance should be evaluated not only by completion or access, but also by whether documentation supports shared understanding and coordinated clinical decision-making across professional groups.

Implications and Evidence Gaps

The findings suggest that EHR documentation compliance in multidisciplinary hospital settings should be approached as a sociotechnical issue rather than as an individual clinician responsibility. Hospitals may strengthen documentation practices by reducing EHR-related friction, aligning documentation tools with clinical workflows, ensuring adequate point-of-care resources, clarifying documentation standards, and using audit-and-feedback mechanisms to make the value of documentation visible for interprofessional coordination and patient safety. These strategies are supported by studies reporting the use of workflow-aligned templates, automated reminders, clinician-IT collaboration, structured training, dashboard monitoring, and audit-feedback mechanisms to improve documentation practices.[23,24,27,28,31,32]

However, these practical implications should be interpreted cautiously. The available evidence remains limited, heterogeneous, and largely based on qualitative, single-site, or quality-improvement studies. In addition, no formal critical appraisal was conducted, consistent with the purpose of a scoping review. Therefore, these recommendations should be considered evidence-informed considerations rather than definitive conclusions about intervention effectiveness.

Several evidence gaps remain. First, definitions and operational measures of documentation compliance varied across studies. Some studies measured behavioral intention to use electronic documentation systems, while others assessed audit-based compliance, timely completion, structured data completeness, documentation quality, accessibility, retrievability, or qualitative documentation practices.[19,23,28,32,34] This variation limits comparison across settings and reduces certainty about which intervention components are most influential.

Second, few studies directly measured downstream outcomes such as interprofessional coordination, continuity of care, shared situational awareness, or patient safety. Most studies focused on documentation processes, documentation quality, access to notes, compliance rates, or implementation outcomes rather than direct team-based or patient-level outcomes.[16,17,22,26,31]

Third, the evidence base was concentrated mainly in high-income settings and included several studies with predominantly nursing samples. This may limit transferability to other professional groups and health system contexts.[14,16,17,20,26,33] Future studies should use clearer compliance definitions, broader multidisciplinary samples, multi-site and longitudinal designs, and outcome measures that link documentation compliance with team communication, care coordination, and patient safety.

Strengths and Limitations

This scoping review has several strengths. First, the review followed the Joanna Briggs Institute methodological guidance and was reported according to PRISMA-ScR, which strengthened transparency and reproducibility. Second, the Population–Concept–Context framework helped focus the review on EHR documentation compliance within multidisciplinary acute care

hospital workflows. Third, the revised search strategy improved search sensitivity by expanding key terms beyond title-only searching and applying them across broader searchable fields where supported by each database. Fourth, the use of a sociotechnical lens allowed the synthesis to capture how technological, individual and behavioral, and organizational and environmental factors interact to shape documentation practices and multidisciplinary information flow.

Several limitations should also be considered when interpreting the findings. First, the search was restricted to PubMed, ScienceDirect, and selected databases accessed through the EBSCOhost platform, as well as to English-language publications. Although these sources were selected to capture health, nursing, and multidisciplinary clinical literature, this restriction may have limited the identification of relevant studies indexed in other databases or published in other languages. Second, although the revised search increased the number of included studies to 22, the evidence base remains limited and was concentrated mainly in high-income countries. This may reduce the transferability of the findings to hospitals with different digital infrastructures, staffing models, documentation policies, and EHR implementation maturity.

Third, qualitative, single-site, and quality-improvement studies predominated. These designs provide valuable insight into real-world documentation practices, workflow barriers, clinician behaviors, and implementation processes. However, they limit the ability to estimate effect sizes, compare interventions, or draw causal conclusions. Fourth, documentation compliance was defined and measured inconsistently across studies, including intention to use, audit-based completion, timeliness, completeness, structured documentation, documentation quality, and qualitative descriptions of documentation practices. This variation reduces comparability across studies and weakens certainty about which barriers, facilitators, or intervention components are most influential.

Fifth, although this review focused on multidisciplinary hospital settings, several studies primarily involved nurses. This may underrepresent profession-specific barriers and facilitators among physicians, pharmacists, and allied health professionals. Finally, consistent with the purpose of a scoping review, no formal critical appraisal of included studies was conducted. Therefore, the conclusions should be interpreted as an evidence map of available literature rather than a graded assessment of evidence strength or intervention effectiveness. Practical recommendations should be applied cautiously and adapted to local workflow, staffing, governance structures, and EHR maturity.

Future Research

Future research should move beyond descriptive accounts of documentation burden toward intervention-focused and outcome-linked studies that clarify what strategies sustainably improve documentation compliance and multidisciplinary communication. First, studies should adopt more consistent definitions and operational measures of documentation compliance (eg, timeliness, completeness, adherence to required structures/templates, and cross-disciplinary retrievability), enabling comparisons across contexts and systems Second, there is a need for multi-site and longitudinal designs evaluating how sociotechnical interventions such as usability redesign, interoperability improvements, centralised summaries/modules, and targeted training affect both documentation outcomes and downstream team-based outcomes (eg, shared situational awareness during rounds, handover quality, coordination of care, and patient safety indicators).

Third, research should explicitly examine profession-specific needs and trade-offs, including how different professional groups author, locate, and interpret documentation created by others, and how these behaviours influence interdisciplinary decision-making. Participatory and co-design approaches that involve nursing, medicine, pharmacy, and allied health clinicians as co-developers are likely to be particularly valuable for aligning digital tools with "work-as-done." Finally, future studies should evaluate the effectiveness and unintended consequences of automation features (eg, copy-forward, templating, alerts) on information quality and clinical reasoning, as well as the impact of feedback mechanisms (dashboards, audit-and-feedback, and peer comparison approaches) on sustaining documentation behaviours over time.

Conclusion

EHR documentation compliance in multidisciplinary hospital settings is a complex sociotechnical issue shaped by the interaction of technology design, clinician behaviours, and organisational conditions. The most critical barrier identified in this review was poor workflow fit, particularly when EHR systems created navigation burden, access friction,

fragmented information locations, and limited team-level visibility of clinically important documentation. These conditions can undermine timely, complete, structured, retrievable, and cross-discipline usable documentation.

The findings also show that improved digital access to other clinicians' notes does not automatically strengthen interprofessional communication. When documentation is fragmented or difficult to retrieve, teams may continue to rely on oral workarounds to integrate the clinical picture. Therefore, sustainable improvement may require more than system implementation. Hospitals should consider workflow-aligned EHR design, clear documentation standards, continuous and discipline-sensitive training, and audit-and-feedback mechanisms that make the value of documentation visible for quality, safety, and multidisciplinary care coordination.

Because the evidence base was limited, heterogeneous, and not formally appraised, these recommendations should be interpreted as evidence-informed considerations rather than definitive conclusions about intervention effectiveness. They should also be adapted to local workflow, staffing, governance structures, and EHR maturity. By mapping barriers and facilitators through a sociotechnical lens, this review provides a practical evidence map for hospital leaders, clinicians, and digital health implementation teams seeking to improve EHR documentation compliance and strengthen interprofessional information flow in acute care settings.

Declaration of Generative AI

The authors used Google Gemini during the preparation of this work to improve readability and language structure. After using this tool, the authors reviewed and edited the content and take full responsibility for the integrity of the manuscript.

Data Sharing Statement

All data generated or analyzed during this study are included in this published article and its Supplementary File.

Ethics Statement

Ethical approval and informed consent were not required for this study, as it constitutes a systematic review of previously published and publicly available literature. This research did not involve any direct interaction with human participants or animal subjects. All synthesized data were extracted from peer-reviewed publications, and the study was conducted in accordance with standard ethical guidelines for secondary research.

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Disclosure

The authors report no conflicts of interest in this work.

References

1. Hansen S, Baroody AJ. Beyond the boundaries of care: electronic health records and the changing practices of healthcare. *Inf Organ*. 2023;33:100477. doi:10.1016/j.infoandorg.2023.100477
2. Tsai CH, Eghdam A, Davoody N, Wright G, Flowerday S, Koch S. Effects of Electronic Health Record Implementation and Barriers to Adoption and Use: a Scoping Review and Qualitative Analysis of the Content. *Life*. 2020;10(12). doi:10.3390/life10120327
3. Wurster F, Fütterer G, Beckmann ME, et al. The Analyzation of Change in Documentation due to the Introduction of Electronic Patient Records in Hospitals—A Systematic Review. *J Med Syst*. 2022;46(8). doi:10.1007/s10916-022-01840-0
4. Robertson ST, Rosbergen ICM, Burton-Jones A, Grimley R, Brauer SG. The Effect of the Electronic Health Record on Interprofessional Practice: a Systematic Review. *Appl Clin Inform*. 2022;13(03):541–559. doi:10.1055/s-0042-1748855
5. Vos JFJ, Boonstra A, Kooistra A, Seelen MA, van Offenbeek M. The influence of electronic health record use on collaboration among medical specialties. *BMC Health Serv Res*. 2020;20(1):1–11. doi:10.1186/S12913-020-05542-6
6. Canfell OJ, Meshkat Y, Kodiyattu Z, et al. Understanding the Digital Disruption of Health Care: an Ethnographic Study of Real-Time Multidisciplinary Clinical Behavior in a New Digital Hospital. *Appl Clin Inform*. 2022;13(5):1079–1091. doi:10.1055/s-0042-1758482

7. Iscoe MS, McLean RM, Melnick ER. Restoring Meaningful Content to the Medical Record: standardizing Measurement Could Improve EHR Utility While Decreasing Burden. *Mayo Clin Proc*. 2022;97(11):1971–1974. doi:10.1016/j.mayocp.2022.07.007
8. Hudkins M, Gold JA, Corby S, Ash JS, Mohan V. Exploring Provider Perceptions and Attitudes toward Copy–Paste and Copy–Forward in Clinical Documentation. *Appl Clin Inform*. 2025;16(04):736–746. doi:10.1055/a-2574-1348
9. Woo BFY, Song J, Middleton E, Fijačko N, Cato K. Teaching Critical Thinking in the Age of AI: safeguarding Clinical Reasoning in Healthcare Documentation. *Int Nurs Rev*. 2025;72(3). doi:10.1111/inr.70102
10. Do Nascimento IJB, Abdulazeem HM, Vasanthan LT, et al. Barriers and facilitators to utilizing digital health technologies by healthcare professionals. *Npj Digit Med*. 2023;6:1. doi:10.1038/s41746-023-00899-4
11. Kosteniuk J, Morgan D, Elliot V, et al. Factors identified as barriers or facilitators to EMR/EHR based interprofessional primary care: a scoping review. *J Interprof Care*. 2023;2023:1–12. doi:10.1080/13561820.2023.2204890
12. Peters MDJ, Marnie C, Tricco AC, et al. Updated methodological guidance for the conduct of scoping reviews. *JBI Evid Synth*. 2020;18 (10):2119–2126. doi:10.11124/JBIES-20-00167
13. Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med*. 2018;169 (7):467–473. doi:10.7326/M18-0850
14. Kossman SP, Scheidenhelm SL. Nurses' perceptions of the impact of electronic health records on work and patient outcomes. *CIN*. 2008;26 (2):69–77. doi:10.1097/01.NCN.0000304775.40531.67
15. Pöder U, Fogelberg-Dahm M, Wadensten B. Implementation of a multi-professional standardized care plan in electronic health records for the care of stroke patients. *J Nurs Manag*. 2011;19(6):810–819. doi:10.1111/j.1365-2834.2011.01220.x
16. Keenan G, Yake E, Lopez KD, Tschannen D, Ford YB. Challenges to nurses' efforts of retrieving, documenting, and communicating patient care information. *J Am Med Inf Assoc*. 2013;20(2):245–251. doi:10.1136/amiajnl-2012-000894
17. Sockolow PS, Rogers M, Bowles KH, Hand KE, George J. Challenges and facilitators to nurse use of a guideline-based nursing information system: recommendations for nurse executives. *Appl Nurs Res*. 2014;27(1):25–32. doi:10.1016/j.apnr.2013.10.005
18. Sockolow PS, Bowles KH, Rogers M, Adelsberger MC, Chittams JL, Liao C. Opportunities in interdisciplinary care team adoption of electronic point-of-care documentation systems. *Stud Health Technol Inform*. 2014;201:371–379. doi:10.3233/978-1-61499-415-2-371
19. HW Ang, YU Lt, AKS Tan, et al. Investigating factors affecting healthcare Professionals' intention to use electronic clinical measurement record (ECMR) systems. *Singapore Nurs J*. 2015;42(3):3–11.
20. Stevenson JE, Israelsson J, Nilsson G, Petersson G, Bath PA. Vital sign documentation in electronic records: the development of workarounds. *Health Inform J*. 2018;24(2):206–215. doi:10.1177/1460458216663024
21. Skyttberg N, Vicente J, Chen R, Blomqvist H, Koch S. How to improve vital sign data quality for use in clinical decision support systems? A qualitative study in nine Swedish emergency departments. *BMC Med Inform Decis Mak*. 2016;16(1):61. doi:10.1186/s12911-016-0305-4
22. Pain T, Kingston G, Askern J, Smith R, Phillips S, Bell L. How are allied health notes used for inpatient care and clinical decision-making? A qualitative exploration of the views of doctors, nurses and allied health professionals. *Heal Inf Manag J*. 2017;46(1):23–31. doi:10.1177/1833358316664451
23. Hampe HM, Keeling T, Fontana M, Balcik D. Impacting Care and Treatment of the Burn Patient Conversion to Electronic Documentation. *Crit Care Nurs Q*. 2017;40(1):8–15. doi:10.1097/CNQ.0000000000000135
24. Johnson K, Burkett GS, Nelson D, et al. Automated E-mail Reminders Linked to Electronic Health Records to Improve Medication Reconciliation on Admission. *Pediatr Qual Saf*. 2018;3(5):e109. doi:10.1097/pq9.0000000000000109
25. Liu W, Walsh T. The impact of implementation of a clinically integrated problem-based neonatal electronic health record on documentation metrics, provider satisfaction, and hospital reimbursement: a quality improvement project. *JMIR Med Inform*. 2018;20(6). doi:10.2196/medinform.9776
26. Thate JA, Couture B, Schnock KO, Rossetti SC. Information Needs and the Use of Documentation to Support Collaborative Decision-Making: implications for the Reduction of Central Line-Associated Blood Stream Infections. *CIN*. 2021;39(4):208–214. doi:10.1097/CIN.0000000000000683
27. Kantor MA, Scott BS, Abe-Jones Y, Raffel KE, Thombley R, Mourad M. Ask About What Matters: an Intervention to Improve Accessible Advance Care Planning Documentation. *J Pain Symptom Manag*. 2021;62(5):893–901. doi:10.1016/j.jpainsymman.2021.05.007
28. Lee JH, Mohamed T, Ramsey C, et al. A Hospital-Wide Intervention to Improve Compliance With TNM Cancer Staging Documentation. *JNCCN J Natl Compr Cancer Netw*. 2022;20(4):351–360. doi:10.6004/jnccn.2020.7799
29. Schell JO, Schenker Y, Piscitello G, et al. Implementing a Serious Illness Risk Prediction Model: impact on Goals of Care Documentation. *J Pain Symptom Manag*. 2023;66(6):603–610.e3. doi:10.1016/j.jpainsymman.2023.07.015
30. Evans CS, Bunn B, Reeder T, Patterson L, Gertsch D, Medford RJ. Standardization of Emergency Department Clinical Note Templates: a Retrospective Analysis across an Integrated Health System. *Appl Clin Inform*. 2024;15(2):397–403. doi:10.1055/a-2301-7496
31. Franco Vega MC, Ait Aiss M, George M, et al. Enhancing Implementation of the I-PASS Handoff Tool Using a Provider Handoff Task Force at a Comprehensive Cancer Center. *Jt Comm J Qual Patient Saf*. 2024;50(8):560–568. doi:10.1016/j.jcjq.2024.03.004
32. Zhang S, Quan YY, Chen J. Construction and application of an ICU nursing electronic medical record quality control system in a Chinese tertiary hospital: a prospective controlled trial. *BMC Nurs*. 2024;23(1):493. doi:10.1186/s12912-024-02178-3
33. Thate J, Lee RY, Mugoya R, et al. Choosing between Patient Care Needs and Accurate Data Capture: exploring Nurses' Experiences of Excessive Documentation Burden. *Appl Clin Inform*. 2025;16(4):1231–1243. doi:10.1055/a-2683-5752
34. Bun R, Adisasmito WB, Siswanto BB. Optimizing Electronic Medical Records for an Acute Decompensated Heart Failure Registry: a Mixed-Methods Analysis of Data Completeness and Coding Practices at a National Cardiovascular Center in Indonesia. *Cureus*. 2026;18(1): e100876. doi:10.7759/cureus.100876
35. Sockolow PS, Bowles KH, Adelsberger MC, Chittams JL, Liao C. Impact of homecare electronic health record on timeliness of clinical documentation, reimbursement, and patient outcomes. *Appl Clin Inform*. 2014;5(2):445–462. doi:10.4338/ACI-2013-12-RA-0106
36. Elkin P, Koppel R. Abstract 4363195: documentation Time, System Integration, and Workflow Challenges in Cardiology: a Clinician Survey. *Circulation*. 2025;152(Suppl_3. doi:10.1161/circ.152.suppl_3.4363195
37. Flanagan ME, Militello LG, Rattray NA, Cottingham AH, Frankel RM. The Thrill Is Gone: burdensome Electronic Documentation Takes Its Toll on Physicians' Time and Attention. *J Gen Intern Med*. 2019;34(7):1096–1097. doi:10.1007/S11606-019-04898-8
38. Gagliardi JP, Rudd M, Rudd M. Sometimes determination and compromise thwart success: lessons learned from an effort to study copying and pasting in the electronic medical record. *Perspect Med Educ*. 2018;7(1):4–7. doi:10.1007/S40037-018-0427-8