Power System Technology
ISSN:1000-3673

Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

The Importance of Using Technology and Health Informatics to Enhance Physician–Nursing Department Integration

Alhejji, Yaser Mohammed A. Al, Abdullah, Yousef Ahmed M. Alhaddad, Mohammed Saleh J. Alali, Wafa Jaffar A. Alassker, Seham Ali A

Abstract

Efficient communication between physicians and nursing departments is essential for safe, timely, and high-quality patient care. With increasing healthcare complexity, traditional communication methods—such as phone calls, handwritten notes, or fragmented documentation—are no longer sufficient. This paper explores the role of technology and health informatics in bridging communication gaps between physicians and nurses. It highlights the benefits of electronic health records (EHR), clinical decision support systems (CDSS), mobile applications, smart alerts, and integrated communication platforms. The paper also examines how these tools improve workflow efficiency, reduce medical errors, and support collaborative clinical decision-making. Finally, it outlines challenges and recommendations for successful implementation in modern healthcare systems.

Keywords: Health informatics, electronic health records, clinical decision support systems, telemedicine, nursing workflow, interdisciplinary communication, smart monitoring, real-time alerts, mobile health applications, care coordination, digital health, physician–nurse collaboration, workflow management systems.

Introduction

Effective collaboration between physicians and nursing departments forms the backbone of clinical practice. However, communication barriers remain one of the leading causes of preventable medical errors and delays in care. With the rapid advancement of digital health technologies, healthcare systems now have powerful tools to optimize information flow and improve interdisciplinary teamwork. Health informatics—defined as the integration of information technology into healthcare processes—is increasingly recognized as a critical component in achieving patient-centered, evidence-based care.

This paper discusses the significance of using technology and informatics to link physicians with nursing units and outlines the impact of these technologies on safety, workflow, and care coordination.

The Role of Technology in Physician–Nursing Integration

1. Electronic Health Records (EHR)

EHR systems allow real-time sharing of patient data between physicians and nurses. Through structured assessments, medication lists, diagnostic results, and nursing documentation, both teams gain immediate access to up-to-date clinical information. This transparency reduces

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

duplication, supports continuity of care, and ensures that both professions operate using the same clinical picture.

Electronic Health Records (EHR) systems represent the foundational digital infrastructure that reshapes how physicians and nursing departments interact, exchange information, and coordinate care. Their significance lies not only in transforming paper-based documentation into a digital format but in redefining the entire communication ecosystem within healthcare organizations. When physicians and nurses access a shared, real-time patient record, the clinical picture becomes unified rather than fragmented. Every assessment, medication order, progress note, and diagnostic result becomes instantly visible to all parties involved in patient care, eliminating gaps that were once common when information passed through handwritten notes, verbal updates, or delayed documentation.

EHRs enhance the accuracy and completeness of patient information by providing structured templates and standardized fields that guide clinicians toward consistent documentation. For nursing, this means that assessments such as vital signs, pain scores, wound evaluations, and risk screens are entered in formats that physicians can interpret quickly without ambiguity. For physicians, the ability to view immediate nursing updates allows them to adjust treatment plans based on the most recent clinical status, reducing delays in decision-making and minimizing the risk of outdated or missing information influencing medical judgments.

One of the most powerful contributions of EHRs is their ability to embed clinical workflows that naturally connect the physician and the nursing team. Medication orders, for instance, flow seamlessly from physician entry to nursing administration, supported by automated checks for allergies, drug interactions, and dosing errors. This digital pathway not only enhances patient safety but ensures that nurses receive clear, legible, and actionable orders without the misunderstandings that often accompany handwritten prescriptions. Additionally, EHRs track whether orders have been acknowledged, administered, or modified, creating transparency and immediate situational awareness for all team members.

EHR systems also support continuous care by integrating laboratory results, imaging reports, and consult notes into a centralized patient dashboard. Nurses can quickly identify critical new data, escalate concerns to the physician, and anticipate changes in the care plan. Physicians, in turn, can rely on systematic nursing documentation to detect early warning signs such as mental-status changes, fluid balance issues, or increasing pain trends. This dynamic exchange transforms the relationship between the two professions from reactive to proactive, fostering a more collaborative and coordinated approach to patient management.

Moreover, EHRs reduce the cognitive burden on clinicians by organizing information logically and making historical data accessible within seconds. A nurse preparing to receive a patient from surgery, or a physician evaluating a new admission in the emergency department, can immediately review prior diagnoses, medication history, allergies, and past interventions. This

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

continuity is especially important for complex or chronic-care patients whose treatment depends heavily on accurate long-term documentation.

Beyond individual patient encounters, EHR platforms facilitate interdisciplinary communication through features such as care plans, shared task lists, progress-note exchanges, and real-time alerts. When used effectively, these tools replace fragmented communication channels with centralized, documented exchanges that improve accountability and traceability. Nurses no longer need to rely solely on phone calls or in-person reports to convey updates, and physicians gain a reliable reference for all clinical events that occurred throughout the shift.

2. Mobile Health Applications

Mobile apps and secure messaging platforms offer instant communication between physicians and nursing staff. Nurses can report vital signs, escalate patient deterioration, submit photographs (e.g., wound assessments), or request urgent consultations. Physicians can respond with precise orders, avoiding delays caused by traditional communication routes.

Mobile health applications have become one of the most transformative tools in strengthening the interaction between physicians and nursing departments, offering an immediacy and fluidity of communication that traditional channels were never able to provide. Their value arises from the fact that clinical care is dynamic, time-sensitive, and often unpredictable, with many decisions requiring rapid coordination between nurses at the bedside and physicians who may be responsible for several patients simultaneously. Through secure mobile platforms, nurses can instantly transmit crucial clinical information—such as abnormal vital signs, ECG strips, wound photographs, or sudden changes in a patient's condition—directly to the responsible physician. This eliminates the delays associated with calling, waiting, or searching for a physician, and creates a direct digital bridge that shortens response times and reduces the risk of deterioration.

These applications also support more structured clinical communication by providing standardized digital forms for reporting symptoms, documenting procedures, or escalating the level of concern based on early warning systems. Instead of relying on fragmented conversations that may be forgotten or misinterpreted, nurses can submit complete and organized reports that physicians can review immediately. The ability to attach multimedia files, such as images or audio clips, adds an additional layer of clarity that enhances decision-making and prevents misunderstandings. A physician receiving a clear image of a wound infection or a photo of a rapidly spreading rash, for example, can make a faster and more precise clinical judgment compared to verbal descriptions alone.

Mobile apps also allow physicians to send real-time instructions that are documented automatically, creating both accountability and traceability. This is particularly important in emergencies, where every second matters. A nurse confronted with unexpected respiratory distress can alert the physician instantly, while the physician can send step-by-step interventions that the nurse can implement even before the physician arrives. This synchronous

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

exchange of information transforms the way acute events are handled, reducing mortality and improving clinical outcomes.

Beyond emergency interactions, mobile health applications support routine coordination by enabling the scheduling of tasks, tracking of ordered interventions, and monitoring of patient progress through shared dashboards. Nurses gain clarity regarding pending orders and their prioritization, while physicians can follow the status of interventions throughout the shift without physically seeking updates. This level of transparency reduces workload stress, minimizes interruptions, and ensures that both teams operate with shared situational awareness. It also builds trust, as every update is digitally recorded, reducing the likelihood of lost messages or missed handoffs.

Additionally, mobile applications contribute to patient safety by integrating decision support tools, medication references, and protocols that nurses and physicians can access at the point of care. This immediate access to validated clinical information reduces reliance on memory, supports evidence-based practice, and minimizes errors related to uncertainty or miscommunication.

3. Clinical Decision Support Systems (CDSS)

CDSS tools within EHR platforms provide evidence-based recommendations, automated alerts, and risk assessments. These tools support both nurses and physicians in making timely clinical decisions. Examples include medication interaction alerts, fall-risk notifications, and sepsis early-warning systems. When both teams receive synchronized alerts, response time improves significantly.

Clinical Decision Support Systems (CDSS) represent an advanced layer of intelligence embedded within modern healthcare technology, designed to guide both physicians and nursing teams toward more accurate, timely, and evidence-based clinical decisions. Their true value emerges from the way they transform raw clinical data into actionable insights that directly influence patient outcomes. Rather than relying solely on human memory, experience, or manual interpretation, clinicians receive real-time guidance generated from integrated algorithms, evidence-based guidelines, and predictive analytics. This capability fundamentally reshapes how physicians and nurses collaborate, because both teams operate from the same digital source of truth and respond to the same alerts, recommendations, and risk assessments.

When a nurse documents vital signs or notes a change in a patient's condition, CDSS tools can immediately analyze the data in the context of the patient's history, lab results, medications, and comorbidities. If the system detects early signs of clinical deterioration—such as sepsis risk, worsening heart failure, or respiratory compromise—it automatically generates an alert that is simultaneously visible to both the nursing team and the physician. This shared early-warning system eliminates the dangerous lag that can occur when abnormalities are discovered but not promptly escalated. Nurses become empowered to initiate rapid responses based on

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

standardized alert pathways, while physicians can intervene sooner, often preventing complications that would otherwise progress unnoticed.

Medication safety is another area where CDSS drives significant improvement in physician–nurse coordination. When a physician enters an order, the system immediately cross-checks for allergies, dosing errors, renal adjustments, and potential drug–drug or drug–food interactions. Nurses, who are responsible for administering these medications, gain confidence knowing that each order has passed through a robust safety filter. This reduces confusion, minimizes common medication-related errors, and ensures that both the physician's intent and the nurse's actions align with safe clinical practice. In highly complex medication regimens—such as oncology, critical care, or pediatrics—this digital support becomes indispensable.

CDSS also influences long-term care through its ability to highlight patterns and trends that may be difficult for clinicians to recognize manually. When nurses consistently record data across shifts, the system can identify subtle deteriorations, deviations from expected recovery trajectories, or unaddressed risks. Physicians reviewing these longitudinal insights can adjust treatment plans with greater precision. This creates a more integrated workflow where nursing documentation gains enhanced clinical value because it feeds directly into predictive models and evidence-based recommendations.

Furthermore, CDSS strengthens the interdisciplinary relationship by standardizing clinical pathways and protocols. Both physicians and nurses rely on the same digital guidelines when managing specific conditions—whether it's a stroke alert pathway, a heart failure protocol, or a diabetic ketoacidosis management plan. This shared framework ensures consistency in care delivery, reduces variability between clinicians, and facilitates smoother communication because everyone is referencing the same structured approach. Disagreements or ambiguities decrease significantly when decisions are anchored in evidence-based digital guidance rather than personal interpretation alone.

Another important contribution of CDSS is reducing cognitive burden. Clinicians are increasingly overwhelmed by vast amounts of information—lab results, imaging, notes, medications, comorbidities—and CDSS helps filter and prioritize what matters most. Instead of manually sorting through dozens of data points, physicians and nurses receive concise insights that point them toward the most urgent or clinically relevant issues. This not only improves clinical decision-making but also reduces fatigue, burnout, and inefficiencies that arise when information is scattered across multiple systems.

4. Smart Alerts and Real-Time Monitoring

Integrated monitoring systems can automatically notify physicians and nurses about critical changes in patient status, such as abnormal vital signs or lab results. These alerts support rapid interventions, thus reducing morbidity and mortality.

Smart alerts and real-time monitoring systems represent one of the most powerful advancements in connecting physicians and nursing departments, because they fundamentally

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

change the way clinical teams perceive and respond to patient deterioration. These technologies act as continuous digital observers, monitoring vital signs, lab data, cardiac rhythms, oxygen saturation, and other physiological parameters with a level of vigilance that no human team could sustain around the clock. Their significance lies not only in detecting abnormalities but in delivering immediate, targeted alerts to both physicians and nurses at the exact moment when intervention is needed, ensuring that critical information never gets lost in workflow delays or communication gaps.

When integrated monitoring systems detect sudden deviations—such as a rapid drop in oxygen saturation, abnormal heart rhythms, rising lactate levels, or dangerous blood pressure fluctuations—they activate automated alerts that simultaneously reach the bedside nurse and the responsible physician. This synchronous notification prevents the all-too-common "information bottleneck" where nurses recognize early warning signs but struggle to reach physicians during peak workload hours, or where physicians rely on periodic manual updates instead of real-time data. The system ensures that all critical information is delivered directly, instantly, and with high clinical precision.

Real-time monitoring also strengthens situational awareness throughout the clinical environment. Nurses can monitor several patients at once without physically being in each room, while physicians can remotely assess patient status even when covering multiple units or responding to emergencies elsewhere. This remote visibility transforms workflows by allowing clinicians to prioritize the sickest patients first, anticipate upcoming complications, and coordinate interventions proactively rather than reactively. In many cases, early alerts generated from continuous monitoring systems have been shown to prevent rapid deterioration by prompting timely assessments, early activation of rapid response teams, or immediate adjustments in treatment.

Another important aspect of smart alert systems is their ability to reduce cognitive overload and filter the overwhelming stream of patient data into actionable, clinically relevant signals. Rather than expecting nurses or physicians to interpret every minor fluctuation manually, the technology analyzes patterns, trends, and thresholds to determine which changes require immediate attention. Advanced systems can detect multi-parameter combinations—such as tachycardia combined with rising temperature and increased respiratory rate—that may signify early sepsis, even before clinicians recognize the pattern themselves. This predictive capability promotes more effective interdisciplinary communication because both physicians and nurses receive alerts shaped by the same intelligent logic, ensuring that everyone acts on unified and data-driven priorities.

Smart alerts also play a crucial role in safety-sensitive environments such as intensive care units, postoperative recovery rooms, and telemetry floors. In these settings, timely escalation is essential, and the systems create a structured escalation pathway that reduces reliance on manual reporting. For example, if a patient's heart rhythm becomes unstable, the alert reaches not only the bedside nurse but may cascade to the on-call physician, the charge nurse, or the

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

rapid response team depending on the hospital's configuration. This structured escalation ensures that critical information always reaches the right person without delays caused by human factors such as fatigue, distraction, or workload pressure.

Beyond acute deterioration, real-time monitoring promotes high-quality chronic care management by tracking long-term trends. Physicians can assess whether a patient's respiratory function is gradually worsening or whether fluid balance is becoming abnormal, while nurses can correlate these trends with bedside observations. This shared insight builds trust, enhances interdisciplinary dialogue, and improves the precision of care plans. Because both teams base their decisions on the same real-time data, disagreements diminish and clinical decisions become more aligned, faster, and more effective.

5. Telemedicine and Virtual Rounds

Telehealth platforms enable physicians to conduct remote rounds with nursing teams, especially in intensive care units, home healthcare, and rural settings. These tools improve access to specialists and support multidisciplinary care planning.

Telemedicine and virtual rounds have emerged as transformative tools that redefine how physicians and nursing departments collaborate, especially in healthcare systems that are increasingly pressured by high patient volumes, staffing limitations, and geographical barriers. Their impact extends far beyond simple remote communication; they introduce a new model of clinical presence—one that allows physicians to be virtually at the bedside, reviewing patient data, interacting with nurses, and guiding care in real time without the constraints of physical location. This expanded presence fundamentally reshapes teamwork, enhances patient access to timely expertise, and elevates the overall quality of care.

At the core of telemedicine is the ability to connect clinicians through high-definition video, audio, and integrated digital platforms that mirror many functions of in-person assessments. Physicians can conduct consultations, evaluate patient symptoms, review diagnostic findings, and coordinate care with nursing staff without being physically in the unit. For nurses, this means faster access to clinical decisions, immediate answers to urgent questions, and reduced delays in implementing care plans. When a nurse encounters a complex wound, an unexpected neurological change, or signs of respiratory distress, virtual communication allows the physician to assess the patient visually, hear the nurse's observations directly, and provide real-time instructions that guide immediate intervention.

Virtual rounds enhance this concept by creating structured, collaborative sessions where multidisciplinary teams—including physicians, nurses, pharmacists, and other specialists—review patient cases collectively, even if they are located in different parts of the hospital or across multiple facilities. This model breaks down physical barriers and ensures that every patient, regardless of location, receives high-quality, team-based care. For nursing departments, virtual rounds provide a consistent opportunity to communicate clinical updates, advocate for patient needs, and clarify treatment plans. The digital environment also ensures that all

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

participants share the same information simultaneously, reducing miscommunication and aligning clinical actions across the team.

These technologies are particularly impactful in critical care environments, rural hospitals, and remote areas where specialist physicians may not be available on-site. Tele-ICU systems, for example, allow intensivists to remotely monitor critically ill patients through continuous data feeds, video assessment tools, and integrated smart alerts. Nurses gain immediate access to specialist expertise that would otherwise require long waits or patient transfers, while physicians can oversee multiple units with efficiency and continuity. This collaborative model has been shown to significantly improve patient outcomes by enabling timely interventions and supporting bedside nurses who often manage complex, high-stakes situations.

Telemedicine also strengthens continuity of care during emergencies, outbreaks, or situations where in-person contact may be limited, such as pandemics. By allowing physicians to maintain oversight without needing to enter patient rooms repeatedly, virtual rounds reduce exposure risks while preserving the quality of communication and clinical decision-making. Nurses benefit from having rapid access to physicians without the delays imposed by physical movement across units, particularly in large hospitals or during high-demand periods.

Another important contribution of telemedicine is its ability to enhance patient and family engagement. Virtual rounds can include family members who are unable to be physically present, ensuring they are informed about care plans and able to participate in decision-making. Nurses often play a key role in facilitating these interactions, which strengthens trust, improves transparency, and supports holistic care.

6. Workflow Management and Task Coordination Systems

Digital dashboards and task-management tools help allocate responsibilities, track completion of clinical tasks, and monitor adherence to protocols. Nurses receive clear instructions, and physicians receive real-time updates about patient progress, reducing ambiguity and missed interventions.

Workflow management and task coordination systems introduce a structured, transparent, and highly efficient framework that reshapes how physicians and nursing departments collaborate within the daily rhythm of patient care. Their primary strength lies in transforming what was once a fragmented, interruption-driven workflow into an organized, predictable sequence of coordinated tasks where every action is documented, visible, and aligned with clinical priorities. These digital systems act as centralized hubs that integrate orders, nursing tasks, physician instructions, and patient needs into a single, continuously updated platform that all team members can access in real time.

For nurses, these systems clarify exactly what needs to be done, when it should be done, and which tasks require urgent attention. Instead of relying on verbal instructions, scattered notes, or periodic phone calls, nurses receive automated task lists linked directly to physician orders, care plans, and patient milestones. Each task comes with clear instructions, deadlines, and real-

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

time status updates, reducing uncertainty and ensuring that no critical activity is overlooked during busy shifts. Nurses can also record task completion instantly, allowing physicians to track progress without needing constant check-ins or manual follow-up.

For physicians, workflow systems eliminate the traditional communication gaps that often result in delays, missed updates, or duplicated work. They provide immediate visibility into what has been completed, what is pending, and whether clinical interventions are being carried out as intended. When physicians modify treatment plans or issue new orders, the updates appear instantly on the nursing task board, creating a seamless transition from decision to action. This reduces the inefficiencies associated with chasing updates, repeating instructions, or navigating unclear handoffs.

These systems also support dynamic reprioritization, which is essential in environments where patient conditions can change rapidly. When a patient deteriorates, receives new diagnostic results, or requires urgent intervention, the system automatically adjusts workflows to reflect new priorities. Nurses receive alerts that shift certain tasks to higher urgency levels, while physicians can monitor the impact of these adjustments across the care team. This real-time coordination ensures that both professions respond in sync, guided by a shared understanding of evolving clinical needs.

Another significant advantage lies in the systems' ability to structure interdisciplinary communication. Nurses can send structured updates, observations, and escalation requests through the platform, ensuring that the physician receives not just a message, but contextualized clinical information tied directly to the patient's electronic record. Physicians can respond with documented guidance, eliminating ambiguity and preserving a clear audit trail. This two-way communication enhances accountability, reduces misunderstandings, and fosters a more respectful, efficient working relationship.

Workflow management tools also reduce cognitive load by removing unnecessary mental tracking. Instead of constantly trying to remember pending tasks, recent updates, or patient-specific instructions, clinicians rely on automated reminders, standardized pathways, and visual dashboards that promote clarity and reduce burnout. In high-pressure departments such as emergency rooms, ICUs, and surgical units, this structured support can dramatically improve response times and decrease the chaos associated with manual task delegation.

Benefits of Technology-Enabled Physician–Nursing Integration

1. Improved Patient Safety

- Reduction of medication errors through EHR-based medication reconciliation
- Standardized documentation that minimizes ambiguity
- Automated alerts that prevent deterioration and adverse events

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

2. Enhanced Communication Efficiency

- Faster response times through secure messaging
- Fewer interruptions during clinical workflows
- Clear and traceable communication logs

3. Better Clinical Decision-Making

- Access to shared patient information
- Evidence-based recommendations from CDSS
- Collaborative interpretation of diagnostic results

4. Stronger Interdisciplinary Collaboration

Technology fosters a culture of teamwork, transparency, and shared responsibility. Nurses and physicians operate with mutual understanding when they access the same clinical data.

5. Increased Productivity and Reduced Workload

Automation of routine tasks—such as documentation, vital-sign monitoring, or task reminders—reduces cognitive load for both nurses and physicians.

Challenges and Barriers

Despite its benefits, implementing technology to connect physicians and nursing departments may face:

- Resistance to change among staff
- Technical limitations and system downtime
- High cost of implementation and maintenance
- Cybersecurity risks and confidentiality concerns
- Training gaps that affect user adoption

Addressing these challenges requires organizational commitment, continuous training, and clear policies on digital communication.

Recommendations for Healthcare Organizations

1. **Invest in user-friendly EHR systems** designed to support both physicians and nurses.
2. **Provide continuous training** to ensure digital literacy among all healthcare workers.
3. **Establish clear communication protocols** for secure messaging and clinical escalation.
4. **Implement CDSS tools** to support shared clinical decision-making.

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

5. **Encourage a culture of collaboration** through interdisciplinary rounds and digital workflows.
6. **Ensure strong cybersecurity measures** to protect patient data.

Conclusion

Technology and health informatics play a transformative role in enhancing collaboration between physicians and nursing departments. By facilitating real-time communication, improving access to clinical data, and supporting evidence-based decision-making, digital tools significantly improve patient outcomes, workflow efficiency, and professional satisfaction. As healthcare systems continue to evolve, the integration of physicians and nurses through advanced informatics will remain essential for delivering safe, high-quality, and coordinated care.

References

1. Bates DW, Singh H. Two decades since To Err Is Human: An assessment of progress and emerging priorities in patient safety. *Health Affairs*.
2. Topaz M. Health information technology and the nursing profession. *Journal of Nursing Scholarship*.
3. Ventresca M, et al. Digital transformation in healthcare: Implications for teamwork. *Journal of Medical Systems*.
4. WHO. Digital health: Framework for action.
5. Collins S, et al. Nursing and informatics: Improving communication and patient-centered care. *International Journal of Medical Informatics*.
6. Adler-Milstein, J., & Jha, A. K. (2020). **Heterogeneity in electronic health record adoption and use in U.S. hospitals.** *Health Affairs*, 39(11), 1884–1892.
7. Alotaibi, Y., & Federico, F. (2017). **The impact of health information technology on patient safety.** *Saudi Medical Journal*, 38(12), 1173–1180.
8. Ancker, J. S., Edwards, A., Nosal, S., Hauser, D., Mauer, E., & Kaushal, R. (2017). **Effects of workload on work quality: A randomized trial of clinical decision support.** *Journal of the American Medical Informatics Association*, 24(6), 1075–1081.
9. Bates, D. W., Levine, D., & Syrowatka, A. (2019). **The future of health information technology in patient care.** *BMJ*, 364, l151.
10. Bhandari, N., Shi, Y., & Jung, K. (2021). **Telemedicine use in hospital settings: Patterns and predictors during COVID-19.** *Journal of Medical Internet Research*, 23(9), e31774.
11. Collins, S. A., Couture, B., Tso, A., & mons, B. (2021). **Clinical communication patterns and EHR utilization among physicians and nurses.** *Applied Clinical Informatics*, 12(4), 818–830.

Power System Technology
ISSN:1000-3673
Accepted: 25-10-2025 Revised: 15-11-2025 Received: 12-12-2025

12. Dowding, D., Merrill, J., & Barrón, Y. (2018). **Nurses' use of clinical decision support systems in acute care: A qualitative study.** *Journal of the American Medical Informatics Association*, 25(5), 421–430.
13. Dykes, P. C., & Collins, S. (2019). **Building linkages between nursing workflow and health IT systems.** *Nursing Outlook*, 67(6), 706–714.
14. Erdfelder, F., et al. (2021). **Impact of mobile health applications on real-time clinical decision-making.** *BMC Medical Informatics and Decision Making*, 21, 331.
15. Glover, J., Williams, C., & Fisher, R. (2020). **The role of tele-ICU in enhancing interdisciplinary communication.** *Critical Care Medicine*, 48(12), 1817–1824.
16. Goldstein, B. A., Navar, A. M., Pencina, M. J., & Ioannidis, J. P. (2017). **Opportunities and challenges in CDS for improving care.** *Circulation*, 135(9), 803–805.
17. Haugland, B., et al. (2022). **Smart monitoring systems and early detection of patient deterioration.** *International Journal of Nursing Studies*, 129, 104205.
18. Kruse, C. S., Stein, A., Thomas, H., & Kaur, H. (2018). **The effectiveness of telemedicine in improving clinical workflows.** *The Permanente Journal*, 22, 18–24.
19. McBride, S. E., Tietze, M., & Thomas, L. (2019). **The impact of EHRs on nursing practice and quality outcomes.** *Computers, Informatics, Nursing*, 37(2), 69–79.
20. Meum, T., Ellingsen, G., Monteiro, E., & Røed, K. (2019). **Workflow integration challenges in digital hospital environments.** *Health Informatics Journal*, 25(3), 759–770.
21. Rosenfeld, L. A., & Genao, I. (2020). **Interprofessional communication in telemedicine environments.** *Journal of General Internal Medicine*, 35(6), 1827–1833.
22. Schenk, E., Schleyer, R., & Jones, C. (2018). **Nursing decision-making and the use of digital tools at the point of care.** *Journal of Nursing Scholarship*, 50(1), 36–44.
23. Smith, R., Jones, M., & Patel, V. (2021). **Real-time patient monitoring and alert fatigue: Balancing safety and usability.** *Journal of Patient Safety*, 17(4), 372–380.
24. Sutton, R. T., Pincock, D., Baumgart, D. C., Sadowski, D. C., Fedorak, R. N., & Kroeker, K. I. (2020). **Clinical decision support systems in modern healthcare.** *Journal of Biomedical Informatics*, 104, 103512.
25. Ventresca, M., et al. (2023). **Digital task management systems in hospital workflows: Impacts on efficiency and communication.** *Health Services Research*, 58(2), 251–265.