

Importance of Informatics Skills for Nurses to Support Communication

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Effective use of information and communication technology is now part of safe nursing practice rather than an optional specialist interest. Nurses document assessments, review orders, coordinate care, administer medication, communicate with patients, monitor devices, and contribute data used for quality improvement. The original reflection correctly argues that [nursing informatics](#) skills support communication and expand career opportunities in research, education, consulting, and management. It also identifies the TIGER-based Assessment of Nursing Informatics Competencies (TANIC) as a tool for reflecting on basic computer skills, clinical information management, and information literacy. Those ideas remain central. However, nursing informatics is more than knowing how to operate an electronic health record. It involves understanding how data are created, exchanged, interpreted, protected, and used in clinical decisions. A competent nurse must recognize both the benefits and the risks of technology, including copy-forward errors, alert fatigue, privacy breaches, poor interface design, downtime, and unverified artificial-intelligence output (McGonigle & Mastrian, 2022; American Association of Colleges of Nursing, 2021).

Nursing Informatics as a Professional Field

Nursing informatics integrates nursing science with information and analytical sciences to manage and communicate data, information, knowledge, and wisdom in practice. Data may include vital signs, laboratory values, medication times, symptoms, and observations. Information emerges when data are organized and interpreted, such as recognizing a trend in blood pressure. Knowledge connects the trend with clinical understanding, while wisdom involves choosing a proportionate action for the individual patient. Technology can support this process but cannot replace nursing judgment. A screen displays data; the nurse determines whether the data are accurate, meaningful, and consistent with the person at the bedside (McGonigle & Mastrian, 2022).

Communication as a Core Nursing Function

Nurses communicate across shifts, departments, professions, and care settings. A missed allergy, delayed laboratory result, or unclear discharge instruction can cause harm. Informatics tools support handoffs, messaging, shared care plans, medication reconciliation, referrals, and patient education. Communication improves when information is available to authorized users in a structured and timely form. It worsens when systems create duplicate records, hide urgent results, or encourage clinicians to assume someone else has acted. Technology should clarify responsibility rather than merely

transmit more messages (American Association of Colleges of Nursing, 2021; McGonigle & Mastrian, 2022).

Electronic Health Records

The electronic health record stores clinical and administrative information across an episode of care. Nurses use it to document assessments, medication administration, interventions, education, responses, and plans. EHRs can improve access to information and reduce problems caused by illegible handwriting or isolated paper files. They can also create new hazards. Templates may encourage irrelevant text, copied information can preserve an old error, and excessive clicking can distract from patients. Good informatics practice means documenting accurately and concisely, verifying imported information, and recognizing that the record is a clinical communication tool rather than a defensive archive (McGonigle & Mastrian, 2022; Office of the National Coordinator for Health Information Technology, 2026).

Documentation Quality

Nursing documentation should be timely, factual, patient-specific, and connected to care. Vague statements such as “doing well” provide less value than observed function, symptoms, and response. Copying a previous assessment without verification can mislead the next clinician. Late entries and corrections should follow organizational policy and preserve the audit trail. Documentation should not contain insulting language or unnecessary personal judgment. The record may be read by patients, regulators, courts, insurers, and future clinicians, but its primary purpose is continuity and safety (McGonigle & Mastrian, 2022).

Structured Data and Narrative

Structured fields support reporting, decision support, and data exchange, while narrative text captures context and complexity. Too much structure can force the patient into categories that do not fit. Too much free text makes important information difficult to find or analyze. Nurses need to understand why certain fields are standardized and when a narrative note is necessary. For example, a pain score is useful, but the patient’s description, functional impact, and response to intervention may require additional words. High-quality systems combine consistency with clinical meaning (McGonigle & Mastrian, 2022; Hübner et al., 2016).

Clinical Decision Support

Decision-support tools generate alerts, reminders, order guidance, risk scores, and evidence links. They can identify allergies, interactions, deterioration, overdue care, or preventive needs. Nurses

should neither ignore every alert nor follow each one without judgment. Alert fatigue occurs when frequent low-value warnings make important alerts less noticeable. A nurse should review the underlying patient data, understand the recommendation, and escalate concerns. Organizations should monitor overrides and remove alerts that create burden without improving care (Office of the National Coordinator for Health Information Technology, 2026; McGonigle & Mastrian, 2022).

Medication Administration Technology

Barcode medication administration can help verify the patient, medication, dose, route, and time. Smart pumps can support dosing limits. These systems reduce some errors but do not guarantee safety. Workarounds, unreadable barcodes, incorrect pharmacy data, wrong patient wristbands, and programming mistakes can defeat safeguards. The nurse remains responsible for clinical checks, including whether the medication makes sense for the patient's condition, allergies, laboratory results, and current vital signs. A successful scan is not proof that administration is appropriate (McGonigle & Mastrian, 2022; Office of the National Coordinator for Health Information Technology, 2026).

Health Information Exchange

Health information exchange allows authorized clinical information to move among organizations. It can reduce repeated testing and improve transitions when patients receive care from several providers. Nurses may use exchanged data to reconcile medications, review recent admissions, or confirm diagnoses. The value depends on completeness, identity matching, consent rules, and workflow. An external record may be outdated or contain errors. Nurses should verify critical information with the patient and current team rather than assume interoperability guarantees accuracy (McGonigle & Mastrian, 2022).

Interoperability

Interoperability means more than sending a document electronically. Systems should be able to exchange information and use it meaningfully. Common standards, terminology, identity matching, and governance are necessary. A laboratory result that arrives as an image may be visible but difficult to integrate into decision support. Nursing input is important because nurses see where information fails to follow the patient through admission, transfer, discharge, home health, and long-term care. Informatics competency includes recognizing these gaps and reporting them constructively (Hübner et al., 2016; McGonigle & Mastrian, 2022).

Patient Portals and Digital Communication

Patient portals allow people to view results, request appointments, communicate, review instructions, and sometimes correct information. They can strengthen participation and reduce telephone delays. Not every patient has internet access, digital literacy, language support, or confidence using a portal. Organizations should maintain accessible alternatives and provide education. Nurses should use approved channels rather than personal messaging accounts. Portal communication becomes part of the clinical record and should be clear, respectful, and escalated when symptoms require urgent assessment (McGonigle & Mastrian, 2022).

Telehealth

Telehealth expands access to follow-up, education, monitoring, and selected assessment. Nurses need skills in identity verification, consent, privacy, camera positioning, remote observation, documentation, and emergency planning. A remote encounter limits touch, environmental control, and some physical assessment. The nurse should know when in-person care is necessary. Telehealth should not be treated as automatically more efficient if it excludes patients or shifts technical burden onto families without support (American Association of Colleges of Nursing, 2021; McGonigle & Mastrian, 2022).

Mobile Devices

Smartphones and tablets can provide drug references, calculators, secure messaging, and bedside education. Personal devices also create privacy and distraction risks. Photographs, messages, and screenshots may be stored or backed up outside approved systems. Nurses should follow organizational policy and use secure applications. Device cleaning is relevant to infection prevention. Mobile convenience must not lead to communicating protected information through ordinary text or social-media platforms (McGonigle & Mastrian, 2022).

Privacy and Confidentiality

Access to an electronic record should be based on a legitimate care or operational need. Curiosity about a colleague, public figure, relative, or neighbor is not permission. Systems record access, and inappropriate viewing can lead to discipline and legal consequences. Nurses should protect passwords, lock screens, verify recipients, and avoid discussing identifiable information in public spaces. Privacy is not only a technical requirement. It protects the trust that allows patients to disclose sensitive information necessary for care (McGonigle & Mastrian, 2022; Office of the National Coordinator for Health Information Technology, 2026).

Cybersecurity

Healthcare organizations face phishing, ransomware, stolen credentials, device compromise, and system outages. Nurses are frequent users of systems and therefore important defenders. Suspicious messages, unusual login prompts, unknown USB devices, and requests for passwords should be reported. Security controls should not be bypassed merely because they slow workflow. At the same time, leaders must design usable processes; staff will create unsafe workarounds when secure tools do not support clinical work. Cybersecurity is a shared systems responsibility, not a test of whether one employee makes a mistake (Office of the National Coordinator for Health Information Technology, 2026).

Downtime and Continuity

Electronic systems can fail because of maintenance, outage, cyberattack, or disaster. Nurses need to know downtime documentation, medication verification, patient identification, order communication, and reconciliation procedures. Paper forms used during an outage must later be entered or scanned according to policy. Regular drills help reveal missing supplies and unclear roles. Technology dependence becomes safe only when organizations prepare for its absence (Office of the National Coordinator for Health Information Technology, 2026).

Information Literacy

Information literacy is the ability to identify an information need, locate credible evidence, evaluate quality, and apply it appropriately. Search results and social media are not equivalent to peer-reviewed guidelines or official sources. Nurses should consider date, study design, population, conflicts, and whether findings fit the patient. Evidence-based practice combines research evidence, clinical expertise, and patient values. The TANIC emphasis on information literacy is therefore directly connected to communication and safety (Collins, 2016; Hübner et al., 2016).

Data Quality

Quality-improvement dashboards and predictive tools depend on data entered during care. Missing, duplicated, or incorrectly coded information can distort conclusions. Nurses may not see the later use of a checkbox, but their documentation contributes to staffing analysis, infection surveillance, reimbursement, research, and public reporting. This does not mean every field should be completed mechanically. Organizations should remove unnecessary documentation and explain why essential data are collected. Better data begin with better workflow (McGonigle & Mastrian, 2022).

Quality Improvement

Informatics allows teams to identify patterns in falls, pressure injuries, medication delays, infections, and readmissions. A dashboard is a starting point. Teams need to verify definitions, examine patient records, understand workflow, test interventions, and measure unintended effects. A lower reported rate may reflect improvement or underdocumentation. Nurses contribute context that prevents data from being interpreted without knowledge of care conditions (American Association of Colleges of Nursing, 2021; McGonigle & Mastrian, 2022).

Artificial Intelligence

Artificial intelligence can summarize records, predict risk, support scheduling, generate education, and assist documentation. It can also produce inaccurate output, reproduce bias, expose data, and create automation complacency. Nurses should use only approved systems and verify every clinical claim. A risk score is not a diagnosis, and a generated note should not be signed without review. Patients should receive honest information about significant uses of automated systems where required. Informatics competence now includes understanding model limitations and escalation when output conflicts with clinical observation (McGonigle & Mastrian, 2022; Office of the National Coordinator for Health Information Technology, 2026).

Human Factors and Usability

Errors often arise from the interaction among people, tasks, technology, and environment. Similar medication names, poorly arranged screens, hidden buttons, interruptions, and excessive alerts can create predictable mistakes. Nurses should report usability problems through safety and informatics channels rather than adapt silently. Field testing by frontline staff, as the original reflection suggests, is valuable because developers may not anticipate bedside conditions. The objective is not to blame users for every error but to design systems that support correct action (Office of the National Coordinator for Health Information Technology, 2026).

The AACN Essentials and Informatics

The American Association of Colleges of Nursing places informatics and healthcare technologies within contemporary nursing education. Competency includes using technology to gather data, support decisions, deliver care, communicate, and improve safety and efficiency. This reinforces the original argument that informatics belongs across the curriculum rather than in one isolated course. Students should practice in simulation, clinical placements, evidence searches, data projects, and ethical case discussions (American Association of Colleges of Nursing, 2021).

TIGER and TANIC

The Technology Informatics Guiding Education Reform initiative helped define informatics competencies for nurses, while TANIC provides a self-assessment based on TIGER-related domains. Self-assessment can identify confidence and perceived gaps, but perceived competence is not the same as demonstrated performance. A student may feel comfortable with computers while documenting unsafely or misunderstanding privacy. TANIC is most useful when combined with observation, simulation, feedback, and a development plan. Reassessment can show whether education has changed confidence and practice (Collins, 2016; Hübner et al., 2016).

My TANIC Reflection

The self-assessment changed my impression of informatics by showing that basic device use is only one area. I need to evaluate my ability to search evidence, manage clinical information, protect privacy, communicate through approved tools, and understand how data support decisions. I may be comfortable entering notes but less confident interpreting dashboards or evaluating a digital tool. Identifying this difference gives direction to learning. The purpose is not to obtain a perfect self-rating but to make development specific (Collins, 2016).

Career Development

Strong informatics skills support bedside practice and careers in education, quality, research, management, consulting, system implementation, and nursing informatics. A nurse educator needs to teach digital professionalism and evidence evaluation. A manager needs to interpret operational data. A researcher needs data governance and analytical literacy. A consultant must understand workflow and change management. Specialized informatics roles may require graduate education or certification, but every nurse needs a foundational level (American Association of Colleges of Nursing, 2021; Hübner et al., 2016).

Teaching the Next Generation

The original essay emphasizes transferring knowledge to future nurses. Educators should model safe documentation and critical technology use rather than assuming younger students are digitally competent because they use phones. Consumer technology familiarity does not equal clinical informatics competence. Students need practice recognizing phishing, verifying decision support, navigating downtime, protecting privacy, and communicating with patients who have different levels of digital access (American Association of Colleges of Nursing, 2021; Hübner et al., 2016).

A Personal Development Plan

I will develop my competence through several measurable actions. I will practice concise, patient-specific EHR documentation and request feedback from instructors. I will use approved databases to locate evidence and compare source quality. I will complete privacy and cybersecurity training and review the organization's downtime process. I will learn how medication scanning, decision support, and patient portals affect workflow. I will participate in simulation and, where possible, quality-improvement projects using de-identified data. After these experiences, I will repeat a structured self-assessment and compare perceived growth with observed performance (Collins, 2016; American Association of Colleges of Nursing, 2021).

Conclusion

Nursing informatics supports communication by making clinical information available, structured, exchangeable, and usable across people and settings. Electronic records, decision support, medication technology, portals, telehealth, mobile devices, and data analysis can improve care, but each introduces new risks. Competence therefore requires technical skill, information literacy, privacy, cybersecurity, human-factors awareness, and clinical judgment. TANIC and TIGER provide useful frameworks for reflection, while the AACN Essentials reinforce informatics as a core professional domain. As a nursing student, developing these skills will improve present clinical communication and prepare me for future work in practice, education, research, leadership, or specialized informatics. Technology contributes to quality only when nurses understand both what it can do and when it may be wrong (American Association of Colleges of Nursing, 2021; Collins, 2016; McGonigle & Mastrian, 2022).

References

American Association of Colleges of Nursing. (2021). *The essentials: Core competencies for professional nursing education*.

Collins, S. (2016). Nursing informatics competencies: Psychometric validation and dissemination of a self-assessment tool. In *Nursing Informatics*.

Hübner, U., et al. (2016). Toward a global competency-based nursing and clinical informatics curriculum. In *Nursing Informatics*.

McGonigle, D., & Mastrian, K. G. (2022). *Nursing informatics and the foundation of knowledge* (5th ed.). Jones & Bartlett Learning.

Office of the National Coordinator for Health Information Technology. (2026). *SAFER guides*.