

Technological Imperatives And Their Significance In Personal And Professional Lives

Posted on October 11, 2022

Introduction

The technological imperative is the belief that once a useful technology can be developed, society feels pressure to develop and adopt it. The idea appears in statements such as “innovation cannot be stopped” or “we must use the newest system to remain competitive.” These statements contain some truth because technologies create expectations, markets, and dependencies. However, they can also hide human choices. A hospital chooses whether to purchase an artificial-intelligence tool, what data to provide, how much training to fund, and whether clinicians can override its recommendations. Technology influences action, but it does not remove responsibility from the people and institutions that design, buy, and govern it.

In personal and professional life, technology can expand access, efficiency, safety, and communication. It can also intensify surveillance, distraction, inequality, and dependence. The central question is not whether technology is good or bad. It is whether a particular tool serves a legitimate human purpose, works reliably in context, distributes benefits fairly, and preserves meaningful control. Nursing provides a useful case because nurses work where technology meets the patient’s body, daily routines, family concerns, and emotional vulnerability.

Technology in Personal and Professional Life

Digital tools have altered how people maintain relationships, learn, bank, travel, and access services. A smartphone can provide navigation, translation, emergency contact, and education, but it can also create continuous availability and extract detailed behavioral data. Convenience often depends on invisible infrastructure and terms that users do not understand. The technological imperative encourages adoption before society has discussed privacy, labor effects, accessibility, or what happens when a system fails.

Professional environments experience similar pressure. Automation can reduce repetitive work and help employees analyze large amounts of information. Remote collaboration can connect expertise across distance. Yet poorly designed systems can increase administrative burden, fragment attention, and transfer work to users. A new platform may be advertised as efficient while requiring employees to enter the same information in several places. Productivity should therefore be measured from the

perspective of the entire workflow, not only the department purchasing the technology.

Technological literacy involves more than operating devices. Professionals need to understand data quality, security, algorithmic limitations, and the social consequences of system design. They should be able to recognize when automation is producing a misleading output and know how to report a problem. Organizations must protect time for this learning. Telling employees to “adapt” while providing inadequate training turns the costs of innovation into individual failure.

Technological Imperatives in Nursing

Nursing technologies include electronic health records, barcode medication systems, smart infusion pumps, patient monitors, telehealth, clinical decision support, and remote sensors. Used well, these tools can improve access to information, reduce some errors, support continuity of care, and allow earlier recognition of deterioration. Telehealth can connect patients with clinicians when distance, mobility, or infection risk makes in-person care difficult. Digital records can prevent the loss of important history and enable coordination across teams.

Benefits are not automatic. Alert fatigue occurs when clinicians receive so many warnings that important alerts become harder to notice. Copy-and-paste practices can spread outdated information. Poor interfaces can force nurses to focus on screens during conversations or enter data in ways that do not match clinical reality. Smart devices can fail, lose connectivity, or be programmed incorrectly. The World Health Organization emphasizes that technology is one of several factors in patient safety and that health systems need skilled professionals, effective processes, leadership, and patient involvement. (World Health Organization, n.d.)

Nurses are not passive recipients of technology. Because they understand bedside workflow, they should participate in selection, testing, implementation, and evaluation. A system that performs well in a demonstration may fail during an emergency, with a patient who communicates differently, or in an understaffed ward. Usability testing should include realistic interruptions and varied users. After deployment, organizations should monitor workarounds, near misses, documentation time, and unequal effects. Punishing workarounds without asking why they developed misses evidence that the system does not fit practice.

Ethics, Equity, and Human Judgment

Health technology raises questions of consent and privacy. Remote monitoring may improve safety while making a patient feel constantly watched. Data collected for care may later be used for research, insurance decisions, or commercial development. Patients should receive understandable explanations of what is collected, who can access it, and how long it is retained. Security is part of patient safety because ransomware or unauthorized access can interrupt treatment and expose sensitive information. (World Health Organization, n.d.)

Artificial intelligence can help identify patterns, summarize records, or support prediction, but it may reproduce bias in its training data. A model developed from one population may perform poorly for another. Even a statistically accurate system can be harmful if staff treat a probability as a diagnosis or if it changes access to care without an appeal process. Human oversight must be meaningful: the nurse or physician should have enough information, time, and authority to question the recommendation. Simply placing a person “in the loop” does not create accountability if the organization expects automatic agreement.

Digital inequality also matters. Telehealth may benefit patients with reliable internet, private space, digital skills, and suitable devices while excluding others. Technology should offer additional routes to care rather than close traditional ones without evidence. Accessibility features, interpreters, disability accommodations, and non-digital alternatives should be planned from the beginning. Equity is not achieved by giving everyone the same app; it requires examining whether people can actually use the service and obtain comparable outcomes.

Responsible Adoption

A responsible organization begins with the clinical or human problem rather than with a product. It asks whether technology is necessary, whether a simpler process change would work, and what evidence supports adoption. Procurement should evaluate interoperability, cybersecurity, accessibility, maintenance, vendor dependence, and total cost. Pilot programs should define success and failure in advance. Employees and patients should have channels to report harm without fear.

Governance continues after purchase. Software changes, new data, and altered workflows can affect performance. Systems need periodic validation, incident review, and retirement plans. Professional education should include ethical reasoning and communication, not only technical instructions. Nurses should be supported in preserving therapeutic presence: eye contact, listening, touch when appropriate, and attention to the person beyond the data display.

Technology also changes professional identity. When documentation templates and performance dashboards define what counts as care, activities that are difficult to measure—comforting a frightened patient, noticing family tension, or teaching at a patient’s pace—may receive less institutional attention. Nurses may feel pressure to serve the record rather than the person. Organizations should therefore assess whether metrics reflect meaningful outcomes and should preserve narrative documentation where it adds clinical value. Efficiency should free time for care, not simply increase the number of tasks assigned.

Automation can create “deskilling” if professionals stop practicing judgment because a system supplies answers. It can also support skill by providing timely evidence and reducing cognitive load. The difference depends on design and education. Training should explain why a recommendation appears, when it is unreliable, and how to escalate disagreement. Simulation can expose staff to

downtime, cyber incidents, and incorrect alerts so that resilience is practiced before a real emergency.

Environmental effects deserve attention as well. Data centers, device manufacturing, frequent hardware replacement, and electronic waste have material costs. A health system committed to public health should consider energy use, repairability, vendor take-back programs, and responsible disposal. Digital services may reduce travel and paper while increasing computing demands. Honest evaluation examines the whole life cycle rather than describing every digital substitution as automatically sustainable.

Patients and families should also participate in governance, not merely usability testing after key decisions are made. Their priorities may differ from those of vendors and administrators. A monitoring system that reduces falls may still be unacceptable if it records private activity without adequate consent. A portal may appear convenient while exposing family members who share devices or lack private email. Co-design helps institutions identify these realities before deployment and makes the definition of success more human.

Technological resilience includes the ability to provide care when systems are unavailable. Hospitals need downtime procedures, paper backups where appropriate, tested restoration plans, and clear communication during cyber incidents. Dependence becomes dangerous when staff no longer know how to continue essential work without the network. Resilience does not mean rejecting digital systems; it means refusing to let convenience eliminate contingency planning.

Vendor relationships require particular scrutiny. Proprietary systems can lock institutions into expensive contracts and prevent independent examination of errors. Procurement agreements should address data ownership, audit rights, update responsibilities, interoperability, and what happens if the vendor closes or changes its product. Clinical organizations should not surrender control of essential care processes merely because the technical details are difficult.

Conclusion

Technological imperatives become dangerous when inevitability is used to avoid responsibility. Technology can improve personal life and professional care, but every system reflects choices about goals, data, power, and acceptable risk. In nursing, digital records, telehealth, monitoring, and artificial intelligence can support safer and more accessible care only when they are designed around patients and real clinical work. Responsible adoption requires evidence, usability, security, equity, training, and meaningful human judgment. Progress should not be measured by how quickly an institution adopts the newest tool, but by whether the tool improves care without sacrificing dignity, trust, or professional responsibility. (National Institute of Standards and Technology, n.d.)

References

World Health Organization. "Incorporating Innovation and Digital Health to Improve Quality of Care and Patient Safety."

World Health Organization. "Patient Safety."

World Health Organization. *Global Strategy on Digital Health 2020-2025*.

National Institute of Standards and Technology. *Artificial Intelligence Risk Management Framework*.