

ANA  AMERICAN NURSES ASSOCIATION
INNOVATION

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medical
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ANA Innovation Advisory Committee

MEDICAL TECHNOLOGY & DEVICES

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27M

nurses worldwide are the largest health sector occupational group accounting for approximately 59% of global health professionals (World Health Organization)¹



\$17.1B

estimated annual cost of U.S. medical errors in the U.S. with device-associated errors as a top 10 contributor (AHRQ)²

23%

of errors in the operating rooms involve device-related issues (AHRQ)³



10-15 years

is the average adoption rate medical technology (Med Device Online)⁶

33-50%

of a nursing shift is time spent caring for patients (National Library of Medicine)⁷

17

years for evidence to change practice (JAMA)⁴



Device-Related Errors

occur due to unintended or unanticipated interactions between devices and users in complex work environments (AHRQ)⁵

15%

of nurses time is spent on charting and documentation; 6% of their time tracking down what they need to do their job; and 5% of their time on tasks that are support or admin (Becker's Clinical Leadership)⁸

Signing

legally “blameless” manufacturing contracts are required of healthcare teams, which effectively places the user at risk. (National Library of Medicine)⁹

64%

of hospitals reported using some form of Value Analysis Committee to contain costs and optimize patient outcomes (Value in Health Journal)¹



COMBO

of expertise from both nursing professionals and technical experts is necessary to disentangle requirements, increase quality, with growing technological requirements of device development (National Library of Medicine)²

EVIDENCE

of efficacy for device registration is typically not required in contrast to pharmaceuticals — manufacturers and independent funders rarely support randomized trials to investigate efficacy or cost effectiveness (National Library of Medicine)³



NURSES

have an opportunity to embrace this new culture of innovation and share their knowledge and experience to inform the evolution of healthcare innovation (Nursing Management)⁶

W.H.O.

recommends nursing curricula align with national health priorities as well as emerging global issues to prepare nurses to work effectively in interprofessional teams and maximize graduate competencies in health technology (World Health Organization)⁷

PIVCs

extensive global use and high prevalence of peripheral intravenous catheters failure has substantial costs to health-care providers for dressing and securement products highlighting the need for further investment and innovation to develop effective products (NLM)⁴

ONE

feature of the medical device industry is its tendency to make many incremental modifications of existing products, punctuated occasionally by an innovation that offers a significantly new mechanism of action, design, or risk profile (The Journal of Thoracic and Cardiovascular surgery)⁵

INSIGHT

grows at points of interaction with patients in a nurse’s role as an educator, manager, or specialist (Association for Computing Machinery)⁸



Nursing Interventions

were statistically significant in decreasing 30-day readmissions (57%), EMS encounters, and hospitalization costs (31%), through the use of digital technology, AI algorithms, and tailored home-care nursing interventions (Nature)¹



E.H.R

or the electronic health record was perceived by nurses as an impediment to contextualizing and synthesizing information, communicating with other professionals, and structuring patient care (National Library of Medicine)²

EMPOWERED

nurses-lead to innovations create a safer patient world (Elsevier)³



Nurse-Engineers

and nurse–engineer collaborations have the potential to create a paradigm shift, and develop technologies and solve real clinical problems, as a result, of these forward-thinking programs than ever before. This paradigm shift also provides an opportunity for uniquely educated nurses, formally or informally, to improve patient care and subsequent outcomes through greater participation in and recognition for important and valuable patient care device innovations. In addition to these programs undoubtedly attracting and educating a new demographic of nursing majors, they also set the stage for other academic nursing programs to follow, resulting in an eventually higher nurse-engineer population. (National Library of Medicine)⁴