

Exploring Artificial Intelligence for Nurse Leaders

Proceedings from AHA, AONL, and UKG Virtual Leadership Symposium

PRESENTED BY

AONL FOUNDATION
FOR NURSING LEADERSHIP RESEARCH AND EDUCATION™

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Introduction

The AONL Foundation Leadership Symposium on ***Exploring Artificial Intelligence for Nurse Leaders*** invited nursing experts in practice, industry, and academia to discuss some of the major considerations related to Artificial Intelligence and Nursing: what is it, what are its strengths, challenges, and opportunities, what are the current regulatory and governance implications of AI, and what is the current and potential future state of AI in actual practice and education.

This topic could not be timelier — or more critical for nurse leaders. McKinsey research **McKinsey: Digital transformation** recently reported that nearly 90 percent of 200 global health system executives surveyed stated that a digital and AI transformation is a high or top priority for their organization. However, at the same time, 75 percent of respondents reported their organizations are not yet able to deliver on that priority because they have not sufficiently planned or allocated the necessary resources. The voice of nurse leaders is absolutely critical in these planning and resource allocation discussions. We are at the cusp of major transformation in our healthcare delivery systems. Chaired by **Nanne Finis, RN, MS**, a 40 year+ nurse leader, member of the AONL Foundation Advisory Council, AONL's Co-Chair of the Leadership, Innovation, Technology & Transformation (LITT) Committee, and Chief Nurse Executive at UKG, this Symposium highlights how Artificial Intelligence (AI) promises to be a revolutionary innovation that will greatly impact future nursing practice and education.

These ***Leadership Symposium Proceedings*** highlight the major themes and recommendations presented by three expert panels, which each explored a different aspect of AI and Nursing. We hope that these themes and recommendations will provide critical guidance to nursing leaders as they prepare to practice and lead in a rapidly changing but exciting healthcare environment. AI offers enormous possibilities to reduce the administrative workload burden for nurses, to identify new opportunities to improve patient safety and quality through innovative technologies, and to improve operational efficiencies. Nurse leaders must be prepared to not only meet, but lead, this transformation.

PANEL 1

Nursing and AI: Partnering for Health and Flourishing

MODERATOR

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Panel #1 laid the foundation for understanding Artificial Intelligence (AI) and its linkages with the profession of nursing — its strengths, uncertainties, opportunities, and challenges, as well as recommended next steps. Panelists addressed the current state of AI in their individual organizations as well as what they view as the biggest challenges in moving forward with AI.

AI: Strengths, Opportunities, General Recommendations, and Next Steps

AI can reduce the administrative or clerical burden on nurses

- Assuring adequate staffing remains a challenge and will remain so for the foreseeable future. The existing nursing staff are tired. Leaders therefore need to find solutions to augment staff and reduce workforce burden, especially clerical or administrative burden.
- For example, Mayo Clinic developed a Generative AI (GenAI) solution to respond to "in basket" messages from clinic outpatients. GenAI is a type of artificial intelligence that uses algorithms to create new content based on existing data. Front-line clinicians were very involved in developing and reviewing every GenAI-generated message to make sure it is of good quality. The result has been a major time savings for staff in using GenAI messages to respond to outpatients. Staff adoption has been very positive — there are now 12,000 users within the Mayo Clinic system.
- Ambient documentation and narrative note-taking for nurses is another potential opportunity to lessen administrative burden on nurses, by reducing the time that nurses spend manually documenting in the Electronic Health Record (EHR).
- Another opportunity for using AI to reduce administrative burden is some kind of virtual assistance for nurses in conducting on-line searches to find resources.

"You cannot replace the empathy or the human touch that nurses provide, but we can replace the clerical burden on nurses — the things that they work on constantly that don't add value, but need to be done for patient care."

- Ryannon Frederick, CNO, *Mayo Clinic*



Organizational Recommendations for Implementing AI

- Some organizations, such as the University of Vermont Health System, have a subcommittee of the Data Governance Council that is dedicated to AI. An important role of the subcommittee was to develop Guiding Principles, such as ethical use, checklists for working with vendors, and the process of prioritization of project requests.
- Leaders of all kind need to have a good working knowledge of AI, so that they can effectively respond to staff questions, especially around concerns regarding replacing the human element of patient care.
- Microsoft has an internal team focused on "AI for Social Good" that supports the Quintuple Aim (see The Quintuple Aim for Health Care Improvement), which includes improving patient experience, reducing cost, and enhancing population health. Artificial intelligence may have a lot to offer in advancing the Quintuple Aim.

Challenges with AI Adoption

- Technology and data literacy are often major challenges. In both education and in practice, we have not done a good job in educating nurses and assessing competencies — from novice nurses to nurse leaders — in understanding AI and how it can work in the clinical environment. Without adequate education, knowledge, and competency, it's difficult to engage nurses in designing solutions.
- Resistance to change is a normal human emotion and response. Technology can be scary for some nurse clinicians and leaders, causing them to doubt its benefits. Some nurses may fear (incorrectly) that AI is a replacement for human interaction.



- We need to continuously ask the question: Is this actually the right practice and does this get the right outcome that we need? Technology cannot in and of itself fix broken processes. We don't want to embed outdated or incorrect practices into AI.
- Well-meaning professionals outside of nursing may attempt to adapt a particular technology solution for the nursing situation; however, solutions need to be customized for nursing.
- We need to prioritize our projects for the greatest impact for the most people. No organization has unlimited resources.
- Data privacy and security require vigilance, as there is always the potential for a major data breach of private information.
- We need to be mindful about possible ethical and legal concerns, such as unintentionally embedding bias and inequity, or using made-up data and building it into our AI algorithms.

"AI extends our ability to deliver safe, quality care to patients now and in the future."

- Dean Connie Delaney, *University of Minnesota School of Nursing*



What is the essential next step that you would recommend?

- Outcome metrics. Ultimately, we need to deliver on great outcomes and protect patients. Hopefully making the work easier for nurses will lead to better outcomes for patients.
- We need to leverage data — to take a brand new, innovative look at how we do things and use data to support that. We need to figure out how to rise above our historical performance, our historical workflows, and take a totally new look.
- Recently a group of experts developed and published the Five Rights of AI in Healthcare: Right Objective, Right Approach, Right Competency, Right Data, and Right Safeguards.
- Data and technology literacy are critical. Nurse leaders should be familiar with AONL Guiding Principles (see Appendix A). Education is ultimately the key to allaying uncertainty and fear.

PANEL 2

Navigating and Influencing the AI Regulatory Landscape

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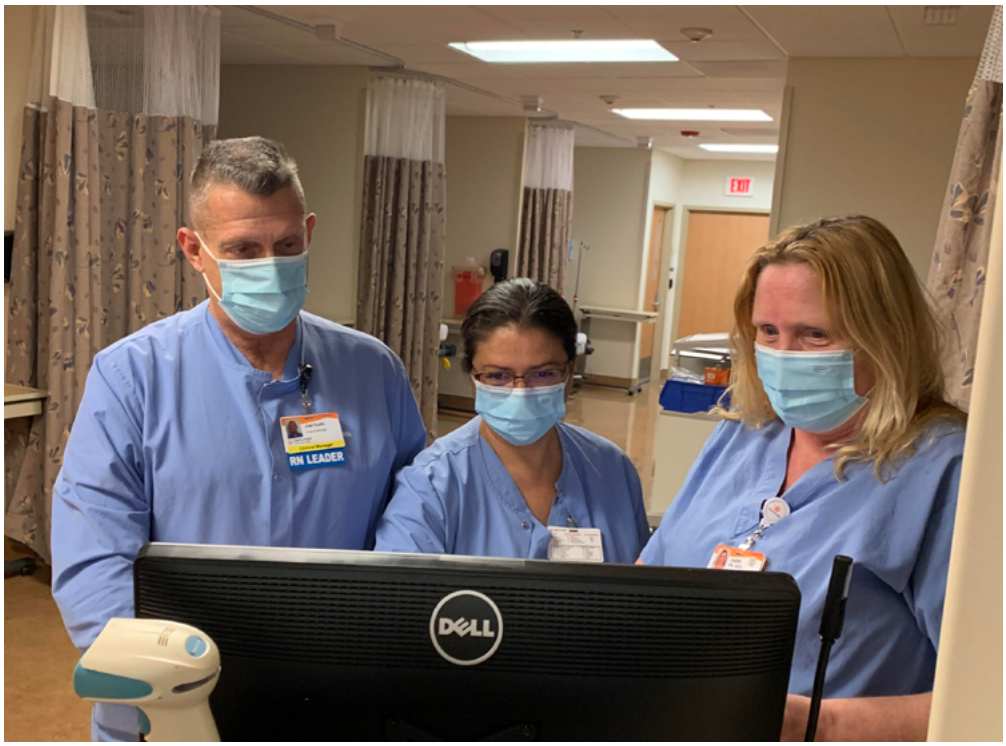


Photo Credit: Mercy Medical Center

Panel #2 addressed the current and future situation regarding organizational, state, and federal policy, governance, and regulations of AI in health care.

Current State of Policy, Governance, and Regulatory Oversight

- The Joint Commission is closely monitoring and providing input on both legislative front as well as at executive branch level as it relates to regulatory oversight of AI, with a special interest in the ethical implications, data privacy, and patient rights. Absent federal regulation, it's imperative that organizations put into place governance around AI and the responsible use of health data, making sure to protect patient rights.
- Like many academic medical centers, the University of Utah has a new Responsible AI Initiative, which is looking at the National Institute of Standards and Technology (NIST) risk management framework to guide its work. This framework focuses on AI from three



different angles: education and training, its impact on the environment, and health and wellness.

- The Alliance for Nursing Informatics is focused on bringing a unified nursing voice to policy discussions, such as the National Academy of Medicine's Health Care Artificial Intelligence Code of Conduct.
- The Alliance has also represented a unified nursing voice in providing comments to the Proposed Rule for Health Data, Technology, and Interoperability (HTI-2): Patient Engagement, Information Sharing, and Public Health Interoperability.
- Many organizations are "keeping a finger on the pulse of state and federal regulations" related to AI. However, even without the oversight of state or federal regulations, it's important for organizations to implement a governance structure that includes an interdisciplinary workgroup representing data science, ethics, leadership, and research to develop guiding principles related to the adoption of AI.
- The Pennsylvania House recently passed a law that artificial intelligence needs to be disclosed to patients with greater transparency. Penn Medicine is discussing how to engage patients in conversations about the use of AI, such as with respect to the presence of ambient listening technology.

How can nurse leaders drive more nursing-focused AI development and, crucially, ensure that nursing perspectives are actively shaping the discussions regarding AI regulations?

- Nurse leaders must be at the table for any discussions on innovation, technology, and AI. Nurse leaders have to be educated, invest the time, collaborate with IT and data science, and be able to advocate for the policy.
- It's all about use cases, use cases, use cases! Nurse leaders must have clearly-defined use cases and bring them forward in policy discussions. AI is not a catch-all solution for everything. It's essential for nurse leaders to find out from bedside nurses: What are the easy places where it can be applied? How do we automate a care plan? How do we generate a support document for handoff? How do we best coordinate care? The biggest and hardest problems are where AI is most needed.
- Nurses need to be at the table for two reasons: First, in order to keep the patient at the center of AI discussions, such as around patient privacy concerns. Secondly, nurses need to be included in these AI discussions in order to ultimately reduce their administrative burden and allow nurses to spend more time at the bedside.

AI is not a catch-all solution for everything. It's essential for nurse leaders to find out from bedside nurses what are the easy places where it can be applied.

Main regulatory challenges in integrating AI into nursing practice

- The biggest challenge is keeping track of all of the regulatory changes at the federal, state, and organizational level. Things are moving fast and it's important to keep on top of it in order to insert nursing advocacy and influence policy where we can. Secondly, balancing the promise of AI while preventing potential harm — not emphasizing one more than the other when influencing policy discussions.
- There are not a lot of AI regulations at the moment, just a lot of interest, which requires the advocacy of nursing leaders when regulations and standards are being developed. Regulations and standards must allow for innovation.
- It's critical to remember that this is patient clinical data and therefore, to not short-cut the IT review process with new AI solutions. Solutions should go through any normal organizational security and compliance



Photo credit: Jefferson Health

data and privacy review processes, ensuring data hygiene and sustainability.

- We must consider what processes will be needed to ensure sustainability when things change, organizations change, new organizations are added, etc. What kinds of sustainability support and review or change control will need to be in place?

Emerging AI regulations or proposed regulations on a state-by-state basis

- While there is concern about fragmentation between federal regulations and definitions and state-by-state approach, panelists urged to get started at an organizational level with a solid governance structure.
- A national approach to regulation, with nurse leaders as advocates, is urgently needed, so we don't have fifty states approaching this topic differently.
- Currently there are a lot of differences between the existing regulations in the various states that have them. This is where nurse leaders and educators can step in and educate younger nurses on the landscape of AI as they embark on their careers (e.g. regulations where they went to school can be significantly different than where they end up practicing).

"Don't be afraid to get started at a local level, even in the absence of regulations. We just need to be safe, use guiding principles, have a working group, and have a sustainability model to check AI."

- Anna Schoenbaum, *Penn Medicine*



Photo Credit: Dignity Health

- All regulated occupations in Utah are now required by the first AI Consumer Protection Act (in effect May 2024) to notify patients of the use of AI. The penalty for failure to do so can be a fine. States can also be "incubators," so there is an opportunity there.

Nurse leaders' involvement in setting standards, regulations, and policies

- It's critical that clinicians are "at the table" as advocates when regulations and policies are being adopted.
- Nurse leaders must understand the "use case" and the problem they are trying to solve with AI. The solution might not be AI. It might be education or another solution, but have the discussion, so that the nurse leader and team can identify appropriate technology.
- Nurse leaders should ensure that risk management is always a part of the guiding principles, especially to protect patient rights, privacy, and ethics.
- Keep patients first. Everything we do should ultimately improve patient outcomes.

PANEL 3

AI In Action: Successes and Opportunities at Leading Organizations

MODERATOR

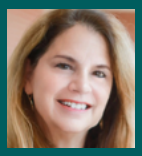


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Panel #3 focused on the practicality of what is happening today with respect to AI and how it's being integrated into health systems.

- We need to focus on **People – Process – Technology**, and in that order. We need to help our existing workforce solve their pain points – and not be caught up by the shiny new technology. We always have to think through what problem are we trying to solve with AI and build the business case first.
- AI is being embedded into the "everyday speak," such as in staff governance councils, unit practice councils, and other structures as part of the language of quality – all the way up to the Board.
- Some organizations around the country still aren't using the automated tools that they already have, such as scheduling and acuity tools. Organizations should start with evaluating AI tools already available within their technology stack and identifying the gaps that new AI tools could fill.
- Nurses need to be educated about the current state of AI – it's critical for leaders to engage with direct care staff. AI needs to meet the needs of nurses and we will only know that by actively engaging with direct care staff.



"The future is going to rely on us doing solid research with AI and with the virtual and ambient world that we have coming to us."

- Patricia Mook, *Advocate Health*

- AI should be seen as a workforce multiplier and a safety partner, not as a replacement. We're going to make nurses faster, smarter, and stronger. Nurses can't be replaced by algorithms — nursing is a lot more complex than that.
- Nurse leaders should partner with the technology leaders and dialogue with nurses in practice. We need to make it easier to extract data from the EHR and make decisions from it.
- Example: What would it be like if we could actually use sepsis prediction tools to help both patients and nurses, so that interventions could be implemented early on, before the patient crashes? How would this change both the patient's life as well as the nurse's practice?

Education, Competency, and Digital Literacy

- We need to consider and plan for how to educate those health professionals currently in the pipeline – not just nurses, but pharmacists, technicians, case managers, therapists, etc. Artificial intelligence should be seen as a workforce multiplier and a safety partner, not as a replacement for human interaction.
- In 2022 AACN published the AACN Essentials – competency-based education that includes a domain specifically for informatics. There are currently 322 competencies in this domain.
- We need to address digital literacy – of our nurses as well as of our patients we serve. We need experienced informaticians with the education system. Simulation and practice need to go hand-in-hand.

"If we want to go from the Flintstones to the Jetsons, we really have to change the way we think. We have to change our behaviors. We need to be bold and courageous and take risks. We must change our expectations to truly create frameworks and maturity models that help us adopt the right tools for the right reasons.

– Bonnie Clipper, *Virtual Nursing Academy*

Where do you see the reality of Generative AI?

- Practice and nurse leaders need to partner with academia and welcome students into the practice setting to engage with staff nurses.
- We need to engage and educate our patients and our communities about artificial intelligence, so they don't mistakenly think that we are about to replace nurses with bots.
- Where are opportunities to use AI to assist nurses in a myriad of ways, such using virtual reality for nurse wellness and in using meditation techniques.
- AI can serve as a simulation lab, such as having advanced practice nurses interact with "patient bots." We don't need to be afraid to fail, and in a simulation, we can do it in a safe way and learn from our mistakes.

What are the Bold Bets: Where do you see Nursing in one year? In ten years?

- In one year, we are going to be having the same conversations. We will still be struggling around process and policy – as we should be.
- In ten years, a lot of this uncertainty will fall away, and we will embrace some of these advanced technologies and reduce workload burden for nurses. AI will be part of nursing language. Nurses will be using it in ways we can't even imagine today.

CONCLUSION

Closing Summary Remarks and Themes



Conclusions from
Panel Moderators
and
Mike Uhl, MSN, MBA, RN
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1. AI is not new to health care. It's been here for the past decade, but we're only talking about it today because of Generative AI (GenAI), which is fundamentally different from the AI of the past. It's powerful and will disrupt health care, but in a good way.
2. We're used to decision support, hidden or visible, for years, but GenAI is a game changer and creates a paradigm shift.
3. The overarching theme of the day is to keep the nurse in the loop. Nurses need to drive the conversation, including products and product development, and have their voices heard in the regulatory environment. Nurses should be a co-lead on every project related to AI and nursing.
4. Well-planned governance for AI is key.
5. We need to identify the problem to solve first, not take the solution or product and then try to find a problem that matches it. We also do not want to automate broken processes. Let's fix the processes first.

"Ten years from now, our current 5th graders are going to be nurses. They are already using virtual and augmented reality devices such as HoloLens, "Apple Glasses, and Meta Quest today. That's how they'll learn. Virtual reality will be the standard of care — not replacing nurses, but supplementing them."

- Bonnie Clipper, *Virtual Nursing Academy*

6. Technology does not replace humanity — it can be a partnership. There are likely solutions in some of our existing technology that have not yet been turned on.
7. Some healthcare organizations report that there is poor interface between technology platforms, which often makes it difficult to pull data and synthesize it in a meaningful way.
8. Data privacy and security must always remain top of mind, as well as other ethical considerations such as ensuring equity.
9. The regulatory landscape is largely unknown at this point, but the nursing voice needs to inform the decisions about future oversight.
10. The potential benefits from using AI in health care and in nursing are plentiful, including reduced error in diagnostics and treatments, improved patient outcomes, enhanced efficiency, and cost reductions by lowering operational costs.
11. A goal should always be to keep our valuable human resources where we most need them – at the bedside, caring for patients.



- AONL Leadership Symposium Resources Document (contains the Leadership Symposium agenda and related resources and articles) is available at AONL Leadership Symposium Resources
- AONL Guiding Principles: Nurse Leaders' Role in Digital Transformation at AONL Guiding Principles
- The Quintuple Aim for Health Care Improvement
- Artificial Intelligence Risk Management Framework: Generative Artificial Intelligence Profile from the National Institute of Standard and Technology at NIST Artificial Intelligence Risk Management Framework
- National Academy of Medicine's Health Care Artificial Intelligence Code of Conduct at NAM Health Care Artificial Intelligence Code of Conduct
- The Alliance for Nursing Informatics (ANI), cosponsored by AMIA & HIMSS, advances nursing informatics leadership, practice, education, policy, and research through a unified voice of nursing informatics organizations. More information at Alliance for Nursing Informatics
- 5 Rights of AI in Healthcare at 5 Rights of AI in Health Care
- AACN Essentials describes competency-based education, which includes a domain specifically for informatics. The AACN Essentials can be downloaded here: AACN Essentials

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APPENDIX A

AONL Guiding Principles: Nurse Leaders' Role in Digital Transformation

AONL Guiding Principles

Nurse leaders are crucial contributors to health care operations and patient well-being. In the evolving landscape of digital health care, it is imperative nurse leaders position themselves as leaders who collaborate and lead both within health care and with industry counterparts. Equipping nurse leaders with the necessary skills to support and lead digital health strategies and transformations is vital for enhancing outcomes for patients, nurses, other caregivers and the nation's health care. AONL Guiding Principles

Guiding Principle #1: Develop digitally competent nurse leaders

With the rapid pace of digitization, it is essential to prioritize developing nursing leadership roles and competencies across all levels to effectively support digital health strategies and transformations. The nurse leader:

- Develops competencies to serve as a leader and subject matter expert in digital technology and transformation.
- Ensures a pathway to develop nurse informaticists within the organization.
- Embraces technology to advance clinical, research, education, operational and administrative workflows.
- Understands how to effectively use information systems to leverage data in outcomes improvement.
- Applies privacy, confidentiality and security strategies to protect personal health information and personal identifiable information.
- Understands and translates digital strategies and technology, leading to transformation.
- Builds a structure supporting ongoing development of digital nurse leaders.
- Partners with academe to develop digitally competent nurses.

Guiding Principle #2:
Collaborate across teams and systems for successful digital transformation

Successful and impactful digital transformation relies on interprofessional collaboration. Nurse leaders are vital in this process, serving as key facilitators who connect, convey, and collaborate to ensure digital transformation strategies are aligned and inclusive. The nurse leader:

- Builds trust to strategically engage and collaborate with all stakeholders to achieve the organization's digital health strategy and transformation.
- Collaborates with all stakeholders to define and implement a digital governance structure that is inclusive and representative of technology experts, senior leadership and end-users (e.g. clinical and non-clinical including consumers of health care).
- Leverages partnerships for collaboration.
    - Partners with internal leaders to gain support and understanding of organizational digital strategy, goals, expectations and key performance indicators.
    - Partners externally with industry leaders to advance digital innovation in support of the organization's strategy and transformation journey.
- Leverages communication and collaboration with marketing and operations to ensure effective, transparent and timely communication of planned and unplanned technology events and activities.

Guiding Principle #3:
Lead digital health transformation.

Involving end users in the selection and design of new technologies is essential for digital adoption and success. This can be achieved by forming a collaborative, interprofessional team comprising members from various departments within the organization. Such a team helps

ensure that the return on investment (ROI) from technology acquisitions is effectively realized. The team:

- Provides oversight in the overall decision-making, acquisition, implementation and evaluation of digital technology processes impacting nursing.
- Advocates for digital technology solutions that optimize outcomes and user experience.
- Understands and communicates the ROI of investing in digital technology.

Guiding Principle #4: Align digital health transformation with strategic and operational goals

By collaborating with leaders throughout the health care system, the nurse leader plays a vital role in attaining the organization's strategic and operational objectives for digital health transformation. The nurse leader:

- Aligns the digital technology plan for nursing and the organization's digital health transformation strategy to ensure congruency, stakeholder buy-in and allocation of human and financial resources.
- Advances digital health strategies to meet the needs of the populations served to achieve health equity.
- Focuses efforts to improve efficiencies of practice for clinical, research, education, operational and administrative workflows.
- Reviews and revises digital technology operational plans on a regular cadence and adjusts tactics as a team.
- Develops a detailed roadmap for digital technologies strategic planning that includes industry partners.
- Communicates targets, outcomes, and progress by conveying regularly and efficiently across interprofessional teams.

Guiding Principle #5:
Drive innovation through research and discovery

The pace of digital transformation in health care is fast-moving and ever-changing, demanding a steadfast dedication to innovation to consistently address the evolving needs of clinicians, the organization, and patients. The nurse leader:

- Develops organizational budgets with the necessary resources to implement and continuously optimize innovation projects that include idea generation, product research and development.
- Creates a plan to quantify the technology impact and benefit to the organization.
- Views industry and academia as innovation partners and pursues opportunities to develop and pilot innovative technology, creating a trailblazing culture.
- Seeks out the latest ideas and partnerships to support intrapreneurship and entrepreneurship.
- Implements small tests of change to support rapid cycle testing and evaluation of innovation ideas.
- Encourages innovation implementation in the practice to support engagement and evaluation of proposed change ideas.

Guiding Principle #6:
Transform outcomes by harnessing the power of data

Digital transformation uses data to inform strategy, evaluate and measure outcomes, and align solutions to achieved strategic goals and outcomes. The nurse leader:

- Identifies data reporting needs for clinical, research, education, operational and administrative workflows.
- Advances nurse leader competency to support the use of data analytics platforms and data to inform strategy, decision making, innovation and achieving outcomes.
- Leverages data to support agile and responsive strategies to address health workforce outcomes.
- Identifies opportunities to increase interoperability among disparate systems to make timely and meaningful information easily accessible at the point of care.
- Creates a clinical strategy around the future of data as it relates to artificial intelligence and where it will impact the care delivery systems the most.
- Builds trust with patients, clinicians and consumers through appropriate safe and secure access to data and by offering total transparency in their data use.
- Identifies opportunities to increase interoperability among disparate systems to make timely and meaningful information easily accessible at the point of care.
- Evaluates evolving technologies as data sources or evidence to guide evidence-based practice and continuous process improvement.