

# Transforming Health Care Through Innovative Nurse- Led Care Delivery Solutions

A Toolkit for Transformation

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IHI thanks the many individuals who contributed their time and expertise, both through expert interviews and as members of an expert panel (see Appendices A and B).

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# Contents

Executive Summary	4
Introduction	5
Project Overview	6
Getting Started: Learnings and Recommendations	22
Conclusion	26
Appendix A: Innovation Cycle Expert Panel	27
Appendix B: Innovation Cycle Expert Interviews	28
Appendix C: Comprehensive List of All Proposed Change Ideas	30
References	32



## Executive Summary

With the generous support of Johnson & Johnson Foundation, the Institute for Healthcare Improvement (IHI) spearheaded a 22-month project, *Transforming Health Care Through Innovative Nurse-Led Care Delivery Solutions*, with the goal of promoting a thriving and diverse nursing workforce. Ten pilot units, across five diverse health care systems, tested care model redesign solutions focused on virtual care delivery, use of innovative technologies, and creative use of support teams and resources. During this testing period, sites experienced individual increases in Thriving from Work scores, resulting in an aggregate 7.78 percent increase in “I love my job” ratings. Additional qualitative themes noted throughout the project included time savings and reduced burden for staff, feelings of enhanced support, creation of new opportunities for nurses, increased staff engagement, and improved patient outcomes.

The purpose of this toolkit is to equip nursing leaders with actionable insights and strategies to improve nurse thriving based on findings from this project. The toolkit includes resources, key learning, challenges, and examples from diverse settings and is a valuable resource for organizations seeking to implement care model redesign such as virtual nursing. Practical guidance, including a full list of change ideas tested, a recommended measurement strategy, and a checklist for getting started, are included to support teams with implementation. Finally, a structured improvement science framework and supporting IHI tools are provided to assist teams in driving meaningful change and sustaining improvements.

This project demonstrated how care model redesign, including virtual nursing, the use of innovative technologies, and creative use of support teams, can positively impact nurse thriving. By applying learning and structured approaches outlined in this toolkit, nursing leaders can test and adopt solutions tailored to their specific needs and drive meaningful improvements to create an environment in which nurses thrive.

“Nurses are health care’s indomitable innovators and improvers. When we imagine, create, and continuously improve safe, high-quality, and equitable care with supportive leaders and healthy work environments, we experience joy and meaning – and thrive as individuals, teams, and a profession.”

—Patricia McGaffigan, MS, RN, CPPS, Senior Advisor for Safety, Institute for Healthcare Improvement; President, Certification Board for Professionals in Patient Safety

# Introduction

The COVID-19 pandemic and subsequent stresses to health care systems and the global workforce resulted in challenges related to attracting and retaining qualified nurses. In the 2022 National Nursing Workforce Survey of more than 300,000 RNs and LPN/LVNs, the National Council of State Boards of Nursing (NCSBN) determined that approximately 100,000 RNs and 34,000 LPN/LVNs left the nursing workforce in the two-year period (2020 to 2022) during and immediately following the height of the pandemic.<sup>1</sup>

For nurses who remained in the workforce, the 2022 NCSBN study confirmed that half reported feeling emotionally drained, fatigued, and even “burned out” due to an increase in their workload demands. Nearly a quarter of these nurses were early-career nurses, with less than 10 years of working experience. The study also noted that close to 900,000 nurses indicated their intent to leave nursing by 2027.

Data from this 2022 study represents an urgent call to action to develop innovative solutions to foster the resilience and sustainability of the nursing workforce. A 2023 McKinsey study that assessed ways to redesign care activities concluded that up to 30 percent of nursing time could be saved through innovations in care delivery that harness technology or reassign current nursing activities. These innovations hold the potential to allow nurses to practice at the top of their scope in the provision of patient care to find more professional fulfillment.<sup>2</sup>

The 22-month project, *Transforming Health Care Through Innovative Nurse-Led Delivery Solutions*, was an important collaboration between the Institute for Healthcare Improvement (IHI) and Johnson & Johnson Foundation that explored innovative approaches to address these pressing workforce challenges.

## Tools and Resources

**AONL Nursing Leadership Workforce Compendium:** This resource brings together best practices and innovations to support nurse leaders in creating environments where nurses can thrive. <https://www.aonl.org/resources/Nurse-Leadership-Workforce-Compendium>

**Health Resources & Services Administration (HRSA) Health Workforce Data Tools and Dashboards:** This website describes tools and dashboards available from the National Center for Health Workforce Analysis of HRSA, which collects, assesses, and presents data on the US health care workforce, including nursing workforce predictions through 2025. <https://data.hrsa.gov/topics/health-workforce/data-research>

# Project Overview

## Project Aim

*Transforming Health Care Through Innovative Nurse-Led Delivery Solutions* was a 22-month project that aimed to **examine innovative acute-care delivery solutions that attract, support, and strengthen a thriving and diverse nursing workforce.**

IHI utilized a three-phase approach for this project:

- Phase 1: Innovation Cycle
- Phase 2: Learning and Action Network
- Phase 3: Synthesis and Dissemination

## Phase 1: Innovation Cycle

Phase 1 launched a comprehensive Innovation Cycle, which included a detailed review of the literature and more than 35 expert interviews, focused on identifying existing nursing models and promising clinical practices that promote a thriving nursing workforce. Some key recommendations were identified in the Innovation Cycle for organizations pursuing innovation and new care models.

### Key Recommendations from the Innovation Cycle

- Engage senior leaders in fostering a learning culture and healthy work environment, with an emphasis on clear and consistent communication across organizational levels
- Focus on alleviating “pain points” for nurses and patient care team members in the local context (i.e., know your organization and work on removing the “pebbles in the shoes”)
- Begin with small tests of change: “What can we do by next Tuesday?”

The learning from the Innovation Cycle led to an initial theory of change, including a draft driver diagram and change ideas, which were brought to an expert panel of interdisciplinary leaders representing nursing, physician, quality and safety, finance, human resources, and patient partners. These experts provided insights and valuable guidance to build on the original driver diagram and change ideas, with the goal of testing them in Phase 2 of the project.

## Tools and Resources

**IHI Framework for Improving Joy in Work:** This white paper describes four steps leaders can take to improve joy in work and workforce well-being; a framework with nine critical components for ensuring a joyful, engaged workforce; key change ideas; and measurement and assessment tools. <https://www.ihl.org/resources/white-papers/ihl-framework-improving-joy-work>

## Theory of Change: Driver Diagram and Change Ideas

A driver diagram is a visual display of a team’s theory of what “drives,” or contributes to, the achievement of a project aim. In the Innovation Cycle, three primary drivers were identified to help teams work toward the aim of examining innovative care delivery solutions to support and strengthen a thriving and diverse nursing workforce: 1) utilizing interprofessional support, teams, and resources to advance quality of care and promote top-of-scope nursing practice; 2) incorporating virtual care to optimize care delivery for patients and nurses; and 3) using innovative technology to enhance work design and strengthen nurse/patient interactions.

Throughout the project, the driver diagram was revised to reflect new insights gained. The final driver diagram, depicted in Figure 1, represents these lessons learned by the end of the project.

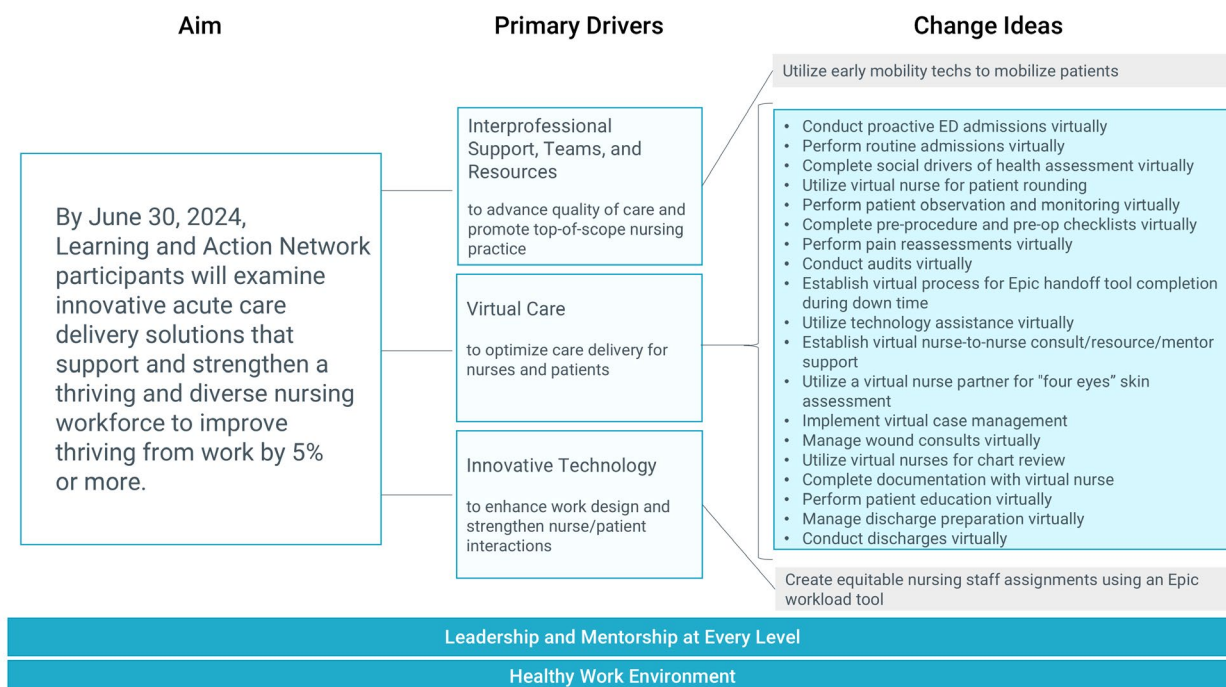
“Pulling in the frontline team members was imperative for us during discussion of, and prior to implementation of, our change ideas. Many times, the frontline teams know what’s best — it’s just a matter of asking.”

—Project Team Member, WellSpan Health

## Tools and Resources

**Quality Improvement Essentials Toolkit:** Further information about driver diagrams and change ideas, including examples and templates, can be downloaded from the IHI Quality Improvement Essentials Toolkit.<sup>3</sup> Ten helpful QI tools are available to help start and manage quality improvement projects: Cause and Effect Diagram, Driver Diagram, Failure Mode and Effects Analysis (FMEA), Flowchart, Histogram, PDSA Worksheet, Pareto Chart, Project Planning Form, Run Chart, and Scatter Diagram. <https://www.ihl.org/resources/tools/quality-improvement-essentials-toolkit>

**Figure 1. Driver Diagram: Innovative Care Delivery Solutions to Support and Strengthen a Thriving and Diverse Nursing Workforce**



## Phase 2: Learning and Action Network

Phase 2 of this project involved a robust Learning and Action Network in which health care organizations tested the theory of change over a nine-month period. Five health care organizations were selected to participate in the project’s Learning and Action Network (see Table 1).

These organizations represent a wide spectrum of organizational structures, patient demographics, geographical locations, and sizes. Most sites tested change ideas on multiple units, further increasing the diversity of pilot settings. Testing change ideas in a variety of settings and under a variety of conditions is especially important for understanding how and why change ideas work in different areas and with different populations and teams. Descriptions of each pilot site are listed in the table below.



**Table 1. Health Care Organizations Participating in the Learning and Action Network**

Organization	Description	Pilot Units
Boston Children’s Hospital	Boston Children’s Hospital is a leading 415-bed academic quaternary pediatric hospital and extended network based in Boston, Massachusetts.	<ul style="list-style-type: none"> <li>• 31-bed inpatient medical unit with 60 registered nurses</li> <li>• 43-bed inpatient surgical unit with 80 registered nurses</li> </ul>
Inova Health System	<p>Inova is a health system with 5 hospitals across northern Virginia and the Washington, DC metropolitan area. They had three pilot units across two different hospitals.</p> <p>Inova Fairfax Medical Campus is a 928-bed, academic, level 1 trauma hospital in Church Falls, Virginia.</p> <p>Inova Loudoun Hospital is a community hospital with 211 beds, located in Leesburg, Virginia.</p>	<ul style="list-style-type: none"> <li>• Inova Fairfax: 24-bed general medical unit with 65 team members and 45 nursing staff members</li> <li>• Inova Fairfax: 24-bed surgical telemetry with 65 team members and 45 nursing staff members</li> <li>• Inova Loudoun: 24-bed progressive care unit with 80 team members and 50 nursing staff members</li> </ul>
Mercy	Mercy is a large health system that includes over 50 acute care and specialty hospitals across four states. Their pilot unit was located at Mercy Hospital in St. Louis, Missouri, a 900+-bed, level 1 trauma center.	<ul style="list-style-type: none"> <li>• A unique 37-bed medical-surgical Innovation Unit, with an emphasis on orthopedics, with 34 nursing staff members – designed to test new ideas with the goal of improving workflow and work processes for nurses, thereby improving care for patients</li> </ul>
VA San Diego Healthcare System (VASDHS)	VASDHS is part of the Veterans Health Administration and is located in San Diego, California. The VASDHS has 296 beds, including skilled nursing beds, and serves an adult veteran population.	<ul style="list-style-type: none"> <li>• 40-bed medical-surgical unit with 64 registered nurses (RNs) and 24 nursing assistants (NAs)</li> <li>• 48-bed medical-surgical unit with 67 RNs and 23 NAs</li> </ul>
WellSpan Health	<p>WellSpan is a health care system with 8 acute hospitals across Pennsylvania. They had pilot sites at two different hospital locations.</p> <p>WellSpan Surgery and Rehabilitation Hospital in York, Pennsylvania, is a 73-bed facility with accreditation for five specific patient populations, including brain injury, amputee, spinal cord, stroke, and comprehensive care.</p> <p>Good Samaritan Hospital is a 170-bed, community-based hospital located in Lebanon, Pennsylvania, that offers a variety of acute and outpatient services, including cardiac surgery, stroke, and total joint programs.</p>	<ul style="list-style-type: none"> <li>• WellSpan Surgery and Rehabilitation Hospital: 48-bed inpatient rehabilitation unit with 140 RNs and nursing assistants</li> <li>• WellSpan Good Samaritan: Piloted virtual nursing on four medical-surgical units, totalling 115 beds with 230 nursing and nursing assistant staff</li> </ul>

## Change Ideas Tested by the Participating Organizations

Because each health care organization faces its own unique challenges – based on its patient population, organizational structure, existing models of care delivery, nursing team compensation and skill sets, technology, culture, regulatory requirements, and many other factors – participating teams were encouraged to select change ideas individualized to their unique needs.

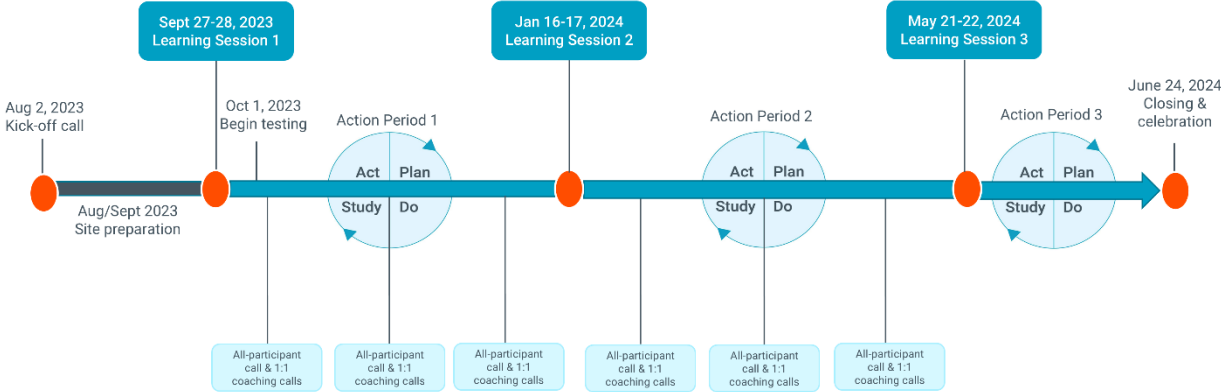
Figure 2 details the specific change ideas (change package) tested by the five organizations participating in the project. Appendix C includes the entire list of change ideas considered at the start of the project.

**Figure 2. Change Package**

Primary Driver	Change Idea	Tested By
Interprofessional Support, Teams, and Resources	Utilize early mobility techs to mobilize patients	VA San Diego
Virtual Care Delivery	Conduct proactive ED admissions virtually	WellSpan
	Perform routine admissions virtually	BCH, Inova, WellSpan
	Utilize virtual nurse for patient rounding	BCH
	Perform patient observation and monitoring virtually	WellSpan
	Complete pre-procedure and pre-op checklists virtually	WellSpan
	Perform pain reassessments virtually	Inova, WellSpan
	Conduct audits virtually (fall mats, hand hygiene, reposition sheet, etc.)	WellSpan
	Establish virtual process for Epic handoff tool completion during down time	WellSpan
	Utilize technology assistance virtually (BeWell network, Amazon Echo, etc.)	BCH, WellSpan
	Establish virtual nurse-to-nurse consult/resource/mentor support	BCH, WellSpan
	Utilize a virtual nurse partner for "four eyes" skin assessment	Inova, WellSpan
	Implement virtual case management	Inova
	Manage wound consults virtually	Inova
	Utilize virtual nurses for chart review	BCH
	Complete documentation with virtual nurse	WellSpan
	Perform patient education virtually	BCH, WellSpan
	Manage discharge preparation virtually (DC checklist, EDD compliance, barrier assessments)	Inova
Conduct discharges virtually	BCH, Inova, WellSpan	
Innovative Technology	Create equitable nursing staff assignments using an Epic workload tool	Mercy

Figure 3 highlights the timeline and activities of the Learning and Action Network and Figure 4 describes the approach used in the network. IHI hosted monthly all-participant learning sessions to promote an “all teach, all learn” environment for teams to test change ideas, collect data, and share learning to accelerate progress across all sites. Sites also participated in individual one-to-one monthly coaching calls. Learning sessions and coaching calls were led by IHI faculty and an Improvement Advisor, and addressed areas such as improvement science methods, data analysis, change management, the psychology of change, spread and scale-up, sustaining improvement, communicating with leaders, joy in work, and equity.

Figure 3. Learning and Action Network Timeline



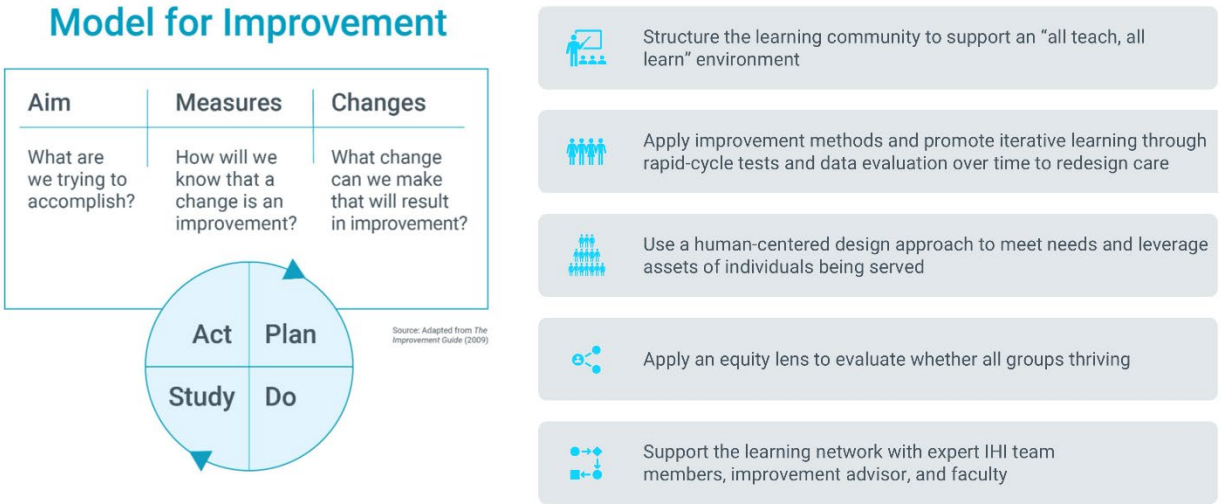
The Model for Improvement (see Figure 4), developed by Associates in Process Improvement, was the framework used in the project to plan and test improvement.<sup>4</sup> The model is compatible with other improvement approaches that organizations may already use (for example, Lean or Six Sigma) and can help to accelerate improvement.

The Model for Improvement has three questions that can be addressed in any order, although teams typically start with the first question to guide them in setting aims.

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in an improvement?

The Model for Improvement employs the Plan-Do-Study-Act (PDSA) cycle to test and adapt changes to ensure that they result in the desired improvements. Answering the model’s three questions is an iterative, dynamic process based on learning from PDSA cycles.

Figure 4. Learning and Action Network Approach



## Tools and Resources

**Model of Improvement:** Learn more about the Model for Improvement framework to help accelerate improvement. <https://www.ih.org/resources/how-improve-model-improvement>

**Aim Statement Worksheet:** Download the worksheet to help you answer the first question in the Model for Improvement, “What are we trying to accomplish?” <https://www.ih.org/resources/tools/aim-statement-worksheet>

Teams are encouraged to implement small tests of change, such as beginning a test on one patient or shift. Small, rapid-cycle tests of change using PDSA cycles results in iterative learning that helps inform whether to adapt, adopt, or abandon a change idea. As the level of success and confidence in the change increase, teams are encouraged to test under a variety of conditions to understand why the innovative solution may work in one setting or condition and not another. Employing a small-scale, rapid-cycle PDSA method also allows for frontline team members to co-design ideas and be involved in the improvement process from the beginning, contributing to accelerated progress, improved results, and staff engagement and experience.

“Starting with small tests of change was important – and helping bedside nurses to think small, use the tools, and not give up. Consistency and ongoing coaching were key.”

–Nurse Manager, WellSpan Health

“While we initially embarked on our virtual care journey to improve operational effectiveness, I have since come to more fully appreciate the satisfaction and joy nurses experience as they creatively improve care delivery processes.”

–Senior Nursing Leader, Boston Children’s Hospital

## Tools and Resources

**IHI Psychology of Change Framework:** This white paper provides a framework and set of methods to help leaders understand the psychology of change and provides guidance on how to apply it to quality improvement efforts to achieve and sustain results.

<https://www.ihl.org/resources/white-papers/ihl-psychology-change-framework>

**Sustainability Planning Worksheet:** This worksheet offers five areas for your team to consider when planning for the long-term sustainability of your improvement. It includes a table of important activities that support making change a permanent part of daily, routine operations. <https://www.ihl.org/resources/tools/sustainability-planning-worksheet>

## Measurement Methodology: Thriving from Work Questionnaire

*Thriving from Work* is defined by Harvard's T.H. Chan School of Public Health as "the state of positive mental, physical, and social functioning in which workers' experiences of their working conditions enable them to thrive in their overall lives, contributing to their ability to achieve their full potential in their work, home, and community."<sup>5</sup> The short-form Thriving from Work Questionnaire from the Harvard T.H. Chan School of Public Health was selected as the primary outcome measure to evaluate the change ideas tested. The project aim was to achieve a 5 percent improvement in thriving from work, as measured through a survey of nurses at three different points: pre-, mid-, and post-project implementation.

Areas assessed on the Thriving from Work short-form questionnaire included:

- I love my job
- I am treated fairly at work
- I can achieve a healthy balance between my work and my life outside of work
- I am paid fairly for the job I do
- I am happy with how much input I have in decisions that affect my work
- I can easily manage the demands of my job
- I feel psychologically safe at work
- I can voice concerns or make suggestions at work without getting into trouble

In addition to using the short-form questionnaire, each team addressed Job Design and Experience of Work using five items from the Thriving from Work long-form questionnaire:

- I am happy with how much input I have in my decisions that affect my work
- I can easily manage the demands of my job
- I have adequate control over the pace of my work
- I am happy with how much control I have over my work schedule
- I have access to the resources I need to do my job well

## Tools and Resources

**Thriving from Work Questionnaire and User Manual:** These resources are available from the Harvard T.H. Chan School of Public Health’s Center for Work, Health, and Well-Being. Both the short-form and long-form questionnaires, as well as user manual, are available to download at no charge. <https://centerforworkhealth.sph.harvard.edu/resources/thriving-work-questionnaire>

Because each organization participating in the project designed and tested individualized solutions focused on their specific project aim and challenges, they selected additional process, outcome, and balancing measures appropriate to what they were testing. These individualized measures focused on domains such as quality outcomes, patient satisfaction, time savings, and staff engagement and satisfaction. Utilizing both Thriving from Work and individualized measures (see Figure 5) enabled the teams to understand whether, and how quickly, they were moving in the right direction. Table 2 outlines the benefits of utilizing a comprehensive set of measures and how each measure type can assist in learning throughout improvement projects.

**Table 2. Types of Measures**

Measure Type	Description	Example
Outcome (usually 1-2 of these)	Tracks progress toward your aim (voice of the customer or patient)	Rate of hospital-acquired infections
Process (usually 3-5 of these)	Tracks whether you are on track in efforts to improve the system (voice of the system)	Percent of the time staff wash hands before patient encounters
Balancing (usually 1-2 of these)	Tracks whether your changes may be impacting other parts of the system (unintended consequences)	Cost of materials for handwashing

Figure 5. Project Measurement Plan

	Measure	Description	Numerator	Denominator	Data Collection Guidance	Frequency
Outcome	Thriving from Work Questionnaire	Average overall Thriving from Work score  Average Job Design and Experience of Work score	Average score for each survey question and average score or the category of thriving and job design based on responses of those surveyed	N/A	Distribute short Thriving from Work survey and Job Design and Experience of Work questions to all unit team members engaged in changes specific to the project  Focus on questions that most align with changes being tested	Pre-, mid-, and post-project
Process	Virtual Care Implementation	Percentage of virtually supported care (e.g., percentage of admissions, discharges, wound care visits, care rounds, or patient education with virtual support)	Number of virtual admissions, discharges, wound care visits, care rounds, or patient education sessions in the measurement month	Total number of admissions, discharges, wound care visits, patient education sessions offered in the measurement month	Collected daily; tallied monthly  May be collected manually with a log or electronically when available  May include other virtual support activities  Develop a series of charts for each discrete activity to enhance learning	Monthly
	Time Saved from Team Support	Time saved in minutes by distributing RN tasks	Minutes of time saved per day by distributing RN tasks. Calculate daily and aggregate monthly into hours.	N/A	Collect time in minutes for activities that are distributed from RN (e.g., linen, virtual admissions, discharge, med tech)	Monthly
Balancing	Patient Experience	Patient experience scores from units that are testing innovative solutions	Dependent on measure selection	Dependent on measure selection	Organizations should use the patient experience questions that provide feedback on processes they are redesigning or improving to improve a thriving nursing workforce	Monthly
	Clinical Quality Outcome Measures (specific to intervention)	Clinical quality and patient outcome measures specific to the innovative solution being tested (e.g., falls, pressure injuries, admission wait times)	Dependent on measure selection	Dependent on measure selection	Organizations should select a few clinical quality indicators that relate mostly closely to their redesign work (e.g., if working on virtual support for wound management, select a pressure ulcer measure; or when using remote patient visual monitoring to prevent falls, a falls measure)	Monthly

“Do something simple to start. You don’t need fancy reports. Don’t be afraid of change.”  
—Project Team Member, Inova Health System

## Measurement Outcomes

### Quantitative Data

Aggregate results revealed a 2.12 percent increase in average Thriving from Work scores over the nine-month testing period and a 3.15 percent increase in average Job Design and Experience of Work scores. Over the course of the project, one theme that emerged was that some of the areas assessed in the survey did not directly apply to the innovative solutions that were being tested by pilot teams. Therefore, sites found it difficult to realize greater improvement in average Thriving from Work and Job Design scores, despite their anecdotal impressions that they were improving.

When teams analyzed the responses to individual areas on the questionnaire, each organization saw increases in scores for those areas that directly aligned with changes they were testing. On average, teams saw a 7.78 percent increase in agreement with the statement, “I love my job,” a 5.85 percent increase for “I can easily manage the demands of my job,” and an 11.33 percent increase for “I have adequate control over the pace of my work” (see Figure 7).

Figure 7. Aggregate Team Results for Thriving from Work Survey Questions



### Qualitative Data

In addition to the quantitative measures, it is recommended to collect qualitative data to evaluate progress. Qualitative data was collected throughout the project through staff interviews, staff surveys, and coaching calls. Table 3 summarizes themes from qualitative data.

Table 3. Qualitative Data Themes Reported by Participating Organizations

Theme	Examples
Time Savings	<ul style="list-style-type: none"> <li>• Reduced burden for bedside RNs</li> <li>• Increased time at the bedside</li> <li>• More time to do what matters to me</li> <li>• Less walking and travel time for consults (case manager/wound care)</li> </ul>
Increased Support	<ul style="list-style-type: none"> <li>• Nurses like having a second pair of (virtual) eyes</li> <li>• Increased support for novice nurses</li> <li>• Removing tasks, to focus on “top of scope” practice</li> <li>• Expansion of virtual availability</li> </ul>
New Opportunities	<ul style="list-style-type: none"> <li>• Able to retain nurses who had planned to leave by offering virtual roles</li> <li>• Nurses like having the opportunity to utilize skills in new ways</li> <li>• Flexibility of virtual roles</li> </ul>
Staff Involvement	<ul style="list-style-type: none"> <li>• Staff are providing feedback earlier in the process</li> <li>• Staff feel more involved</li> <li>• Leaders spend more time listening</li> <li>• Teams feel invigorated by participating in improvement work</li> </ul>
Improved Outcomes	<ul style="list-style-type: none"> <li>• Positive impacts to patient care</li> <li>• Mitigation of moral distress felt by staff</li> <li>• Increased satisfaction in work with improved quality and patient experience</li> </ul>



“When I leave the end of my shift as a virtual nurse, I am feeling very accomplished. Knowing that I’ve impacted a nurse’s day for the better is very gratifying. The one-on-one time spent with the patient without distraction, especially for educational purposes, means a lot to me personally. Overall, I feel it has significantly impacted my overall nursing stress levels.”

—Virtual RN, WellSpan Health

### Tools and Resources for Creating Measures

Model for Improvement: Establishing Measures

<https://www.ihi.org/how-improve-model-improvement-establishing-measures>

Quality Improvement Project Measures Worksheet

<https://www.ihi.org/resources/tools/quality-improvement-project-measures-worksheet>

## Phase 3: Synthesis and Dissemination of the Project Learnings

Phase 3 of the project included the synthesis and dissemination of project learnings, implementation guidance in this toolkit, and wide dissemination through published articles, podcasts, blogs, other online resources, and presentations and discussions at conferences.

Throughout the lifespan of the project, results and learnings have been regularly shared with the American Organization for Nursing Leadership (AONL) Workforce Committee, the American Hospital Association (AHA)/AONL Learning Community, the American Nurses Association Virtual Nurse Professional Issues Panel, the American Academy of Nursing Policy Dialogue on virtual nursing, and other organizations focused on innovative care delivery. Johnson & Johnson highlighted the project in two monthly newsletter *Notes on Nursing*, which features the many ways nurses’ innovation and leadership drive transformative change in health care.<sup>6,7</sup> This work has also been published in *AONL Nurse Leader*<sup>8</sup> and featured in a PSQH podcast.<sup>9</sup>

Two participating organizations’ projects and results are highlighted below as illustrative examples.

## Example: Inova Health System

Inova is a leading nonprofit health care provider in Northern Virginia. Its five hospitals offer integrated health care services with a staff of over 20,000 team members, providing 2 million patient visits annually.

### Project Aim

Inova selected the following aim for expansion of virtual care: *By June 30, 2024, we will test solutions to broaden the scope of virtual care by introducing additional virtual care modalities to improve thriving in nursing by 5 percent.*

### Results

Although the pilot initially focused on the use of virtual nurses to support colleagues at the bedside, virtual care delivery expanded to other areas such as wound care management and nursing case management. Nurses embraced the pilot with enthusiasm and little resistance because nursing leaders were meaningfully engaged during the project and communicated with project team members about the potential for long-term positive benefits.

Some nurses, however, expressed a fear of technology or concerns about whether and how virtual nursing could help them with complex patients. Inova hosted two-day Accelerator Events that engaged representatives from a variety of disciplines (including nurses, physicians, advanced practice providers, case management, clinical techs, and professional services departments such as nutrition, pharmacy, laboratory, transport, and rehabilitation therapists). By involving frontline team members in this process, leaders were able to identify “pebbles in the shoes” of the staff and engage them in the project work and tests of change. This process enhanced collaboration and staff enthusiasm for this work, ultimately fueling the team’s success.

Inova achieved success by employing its existing but previously underutilized wound photography capability in its electronic health record (EHR) to determine whether certain wound assessments could be conducted virtually. Using virtual wound nurses and EHR photographic capability, Inova experienced considerable nursing time savings (for example, a significant reduction in time commuting between units for wound care nurses). This test of change also reduced the workload burden on the primary nurses, enabling them to spend more time on other aspects of patient care such as patient and family education. Based on the reduced workload burden and time savings, this change idea was adopted.

Virtual pain reassessments also led to time savings for bedside nurses as well as positive feedback from patients, who expressed their appreciation that their pain was being reassessed and managed in a timely manner. Based on these results, this change idea was also adopted.

Inova tested another change idea using a virtual “four eyes” skin assessment approach, utilizing a virtual nurse as the second resource for skin assessments that require dual RN verification. This change idea was found to be more labor intensive than anticipated and not conducive to a virtual care approach within their setting. Therefore, this change idea was abandoned.

“Our most compelling change with a positive impact for patients is our increased pain reassessment compliance on all virtual nurse pilot units. Virtual nurse pain reassessments and interventions are completed in a timely manner, and time is saved for the primary onsite RN. Completion of multiple PDSA rapid-cycle tests of change revealed opportunities for process improvements, navigating EHR reports, manual data collection, all of which allowed for alignment virtually and onsite. We began seeing improvements in real time.”

—Leader, Inova Health System

Inova reported that their engagement in the project brought them together as a system and within departments, helping them think from a “systems perspective” rather than from “silos.” A siloed approach had often impeded the effectiveness of previous improvement projects. Senior leadership engagement was robust throughout the project, with notable leader presence, communications, and support. Nurse managers on the test units played a vital role in disseminating information and data about the project to all staff, with ongoing communication throughout the project a key to success. The project team members found that they had underestimated the amount of time required to implement and communicate the changes, and noted the importance of blocking off time in the calendar for follow-up and communications.

Over the course of the project, Inova saw an increase in several Thriving from Work questionnaire items:

- 5 percent increase in “I love my job”
- 7.1 percent increase in “I can easily manage the demands of my job”
- 6.53 percent increase in “I have adequate control over the pace of my work”

Encouraged by the success of its pilot projects with wound care management and pain reassessment, Inova plans continued expansion of virtual care to other areas aligned with their system priorities. In addition to time savings and patient and staff satisfaction, Inova was able to retain nurses who were otherwise planning to leave the organization by offering them new career path opportunities providing virtual nursing care.

“We assess our effectiveness through patient and RN feedback. Positive testimonials from patients emphasize the virtual nurse impact on workflow, reducing the burden for bedside RNs. This is evident when RNs express feeling less task-oriented, enabling them to focus more on patient needs in the room.”

—RN, Inova Health System

## Example: VA San Diego Healthcare System

VA San Diego Healthcare System provides comprehensive health care to military veterans in San Diego County, California. Their mission is to “honor America’s veterans by providing exceptional health care that improves their health and well-being.”

### Project Aim

VA San Diego Healthcare System identified the following project aim: *By July 1, 2024, we will implement an Early Mobility Assistant (EMA) role to reduce the workload for the RN role with a goal of improving thriving in nursing by 1 percent from baseline.*

### Results

VA San Diego identified an opportunity to test an innovation through the establishment of a trained Early Mobility Assistant. This new role is focused on early mobilization of veterans, with a goal to return them to their home environment as quickly as possible and alleviate the workload of nurses through a redistribution of tasks. Mobilization, which includes ambulating patients and supporting range-of-motion exercises, may take one to two hours for each patient. Two nursing units trained existing nursing assistants for this EMA role, who learned how to use the VA Mobility Screening and Solutions tool to determine and provide appropriate individualized interventions to improve each Veteran's mobility.

Some staff expressed initial concern about the EMA role, fearing it would put a strain on available nursing assistant resources. However, once the test was underway, nurses began to experience the benefits of the EMA role, including reducing RN workload through delegation of tasks and improving patient outcomes due to early and consistent mobilization.

Although the VA San Diego team was accustomed to using small tests of change to design and test change ideas, they faced a challenge in ensuring that this project remained budget neutral. During busier times of the year, they also experienced some tension regarding the allocation of resources since EMAs were sometimes assigned to serve as therapeutic sitters. To address concerns about sufficient staff resources, the Early Mobility Team assisted with other mobility-related activities.

Key to the VA’s success was adopting “team champions” – both RNs and EMAs – to serve as early adopters, coaches, and communicators. Ultimately, the pilot succeeded in reducing the amount of time that RNs were required to spend on patient mobilization.

**“We found it was important to our success to have assigned team champions – both RNs and CNAs – who provided consistency, helped to market the change to staff, and secure buy-in.”**

**–Team Member, VA San Diego Healthcare System**

Patient education on the importance of early mobilization to recovery and overall health was key to success. Patient feedback on EMAs was positive, with one patient stating, “I feel human again!” because he was able to ambulate and was discharged home.

VA San Diego saw impressive increases in their data throughout the project:

- 7.38 percent increase in overall Thriving from Work score
- 6 percent increase in Job Design and Experience of Work
- 10 percent increase in “I love my job”
- 12.66 percent increase in “I am happy with how much input I have in decisions that affect my work”
- 6.68 percent increase in “I can easily manage the demands of my job”

Upon completion of the test period, 99 percent of nurses supported continuing and expanding the Early Mobility Assistant role. Given the positive results regarding RN time savings and patient outcomes, VA San Diego plans to expand the EMA role into other nursing units that were not involved in this pilot project.

“I think it’s great that we are doing something for our patients that I cannot normally do because of the workload.”

—Registered Nurse, VA San Diego Healthcare System

# Getting Started: Learnings and Recommendations

The project offered important lessons that can help other organizations interested in testing and adopting new change ideas to transform health care through innovative nurse-led care delivery solutions. These lessons and recommendations are highlighted in Table 4 below. These learnings also serve as the basis for the Getting Started Checklist (see Figure 9).

**Table 4. Transforming Health Care Through Innovative Nurse-Led Care Delivery Solutions: Summary of Lessons Learned and Recommendations**

Lessons Learned	Recommendations
Evaluate Readiness for Change Prior to Project Start	<ul style="list-style-type: none"> <li>• A strong commitment to and strategy around building and maintaining a healthy work environment for staff needs to be a continuous priority.</li> <li>• Ensure that there are no significant barriers or challenges that will impact the ability to fully participate in the project (e.g., major organizational transitions, platform changes/upgrades).</li> <li>• Allocate adequate time and resources to ensure success in the project.</li> <li>• Ensure that project goals address current pain points.</li> <li>• Align organizational strategic goals and initiatives with the project goals.</li> <li>• Teams need to have knowledge and ability to execute improvement projects.</li> <li>• Teams need the ability to collect and review data in order to evaluate if change is an improvement.</li> </ul>
Senior Leadership Support and Engagement	<ul style="list-style-type: none"> <li>• Support and engagement from senior leaders at the onset of the project is critical for nurses to successfully test innovations in care delivery.</li> <li>• Senior leadership involvement is necessary to acquire resources, mitigate barriers, and promote buy-in for project success.</li> <li>• Leaders must set clear expectations and outline how success will be measured.</li> </ul>
Financial Considerations	<ul style="list-style-type: none"> <li>• Gain a clear sense of resource considerations and potential financial implications or constraints for testing and adopting a change idea before the project gets underway (e.g., a technology innovation may require consideration of a major financial investment if the change idea is successful, adopted, and spread beyond the original pilot units).</li> <li>• It is possible to remain budget and staff neutral by getting creative with and shifting resources already available. Most of the project pilot sites did not add resources as they tested these innovative solutions.</li> <li>• Allocate adequate staff time for design, testing, and adoption of the change idea.</li> <li>• At the beginning of the project, it is helpful to design a methodology for evaluating the return on investment if the change idea is adopted, such as</li> </ul>

	<p>cost savings through a reduction in overtime hours, use of outside agency staffing, or staff turnover.</p> <ul style="list-style-type: none"> <li>• Early discussions with finance leaders can help set expectations as the project is designed, as small tests of change occur under different conditions, and before the changes are spread more broadly. Finance can help identify potential metrics to later evaluate the cost-effectiveness of the change idea.</li> </ul>
Project Management	<ul style="list-style-type: none"> <li>• A project manager and project management tools are invaluable for keeping the project moving forward and meeting deadlines.</li> <li>• Plan for interruptions in the use of virtual technologies by establishing downtime procedures given the potential for power or platform failures or cybersecurity breaches.</li> </ul>
Active Engagement of Frontline Staff	<ul style="list-style-type: none"> <li>• Engaging frontline staff in the design and testing of a change idea is critical, as they are often the ones closest to and most knowledgeable about the underlying issues being addressed.</li> <li>• It is important to actively elicit staff ideas and gather regular feedback on changes being tested to ensure continuous learning and improvement.</li> <li>• Identify opportunities to “engage the detractors” and bring different perspectives, create buy-in, and make them part of the solution. Being involved in the quality improvement process and having their voices heard as changes are being made brings increased work satisfaction to nurses.</li> </ul>
Involvement of Key Partners	<ul style="list-style-type: none"> <li>• Interdisciplinary team representation is critical to bring a variety of perspectives to the project design and testing.</li> <li>• Identify and engage key partners within the organization that might influence or be impacted by changes being made. These might include members of a Nursing Governance Council, nursing informatics, quality and data analytics, information technology, case management, legal and risk management, finance, marketing and communications, human resources, pharmacy, rehabilitation therapies, case management, education, patient and family councils, and leaders and staff from the medical department.</li> <li>• Depending on the size and scope of the project, a more formal governance structure may be needed. For example, WellSpan Health utilized an Executive Steering Team comprising the chief nurse executive, other designated nursing leaders, nursing informatics staff, and the chief medical officer. Two subteams at WellSpan – one for clinical issues such as instructional design, and one for technology, which communicated with vendors and executed “go live” timelines – met on a weekly basis.</li> </ul>
Use of Improvement Methodology	<ul style="list-style-type: none"> <li>• Use a structured improvement process (e.g., Model for Improvement) to design, test, and scale improvements.</li> <li>• Using a rapid-cycle improvement process and beginning with small tests of change will allow you to start and learn quickly.</li> <li>• The first tests of change can be as small as one patient, one hour, or one shift. As confidence builds in the changes, gradually increase.</li> <li>• Test under a variety of conditions to understand why changes might work in one setting and not another.</li> <li>• Use data to understand if the changes are leading to improvement.</li> <li>• Keep data simple and specific to what you are trying to measure.</li> </ul>

	<ul style="list-style-type: none"> <li>• Several project pilot sites used multiday process improvement events or Accelerator Projects to engage frontline staff at the start of the project in defining and prioritizing the most urgent needs, “the pebbles in their shoes.”</li> </ul>
<p>Communication Strategies</p>	<ul style="list-style-type: none"> <li>• Understanding the art and science of human behavior and leveraging the people involved in the improvement work is key to achieving and sustaining success. IHI’s Psychology of Change Framework<sup>10</sup> can help organizations understand the human side of change and apply it to their improvement projects to engage teams and achieve their goals together.</li> <li>• Defining a “narrative” for the project can be part of the change management process and consistent communication strategy.</li> <li>• Collaboration with marketing and communications early in the design of the change idea can be helpful in project planning. For example, several organizations piloting virtual nursing found it essential to engage communications staff in developing a patient instructional video that explained the concept and how patients could access and engage with virtual nurses.</li> </ul>

“It’s critical to have funding discussions in the early days of the project and to have a clear scope and budget. That includes budgeting time for a project manager as well as time for the bedside nurses to be involved.”

—Project Team Member, Mercy



### **Figure 9. Getting Started Checklist: Transforming Health Care Through Innovative Nurse-Led Care Delivery Solutions**

- Identify a senior executive sponsor to lead and be accountable for the project.
- Engage direct care nurses in identifying workload burden and the “pebbles in their shoes” that might lead to innovative solutions.
- Partner with senior leaders to set the vision and expectations for the proposed change ideas, project aim, and pilot project design and testing. The continuous engagement and support of senior leaders are critical to the success of any pilot project.
- Set a clear and measurable project aim.
- Ensure support of other key parties for the change ideas and pilot project, including, as appropriate, staff representing information technology (IT), human resources, marketing and communications, and partners such as IT vendors.
- Determine a plan for the financial implications of the change ideas, such as allocating staffing resources, project management, and technology costs.
- Use a tested quality improvement methodology like the Model for Improvement that includes the PDSA cycle, rigorous measurement and data analysis, and change management strategies.
- Focus on rapid-cycle improvement and small tests of change: “What can we do by next Tuesday?”
- Use principles of effective project management to establish detailed plans expectations, timeframes, and accountabilities for the pilot project. When feasible, designate a project manager to keep the design and testing process on track, with important milestones met.
- Select team members to lead the project who understand the underlying issue and are committed to identifying and testing new solutions. When possible, seek multidisciplinary representation on the project team.
- Engage frontline staff early on and throughout the project. Plan and, as needed, allocate the time for frontline staff to be involved on the project team and in testing the change ideas.
- Identify and listen to “early detractors” of a change idea, as their concerns can often help to shape the direction of the project. Detractors can become vigorous champions.
- Throughout the project, actively communicate the project aim, the progress on the pilot, and ultimately, the conclusions about whether the pilot project will or will not be adopted and why. Consider designating “champions,” whose role it is to communicate to frontline staff about the project and the change idea being tested.

## Conclusion

The *Transforming Health Care Through Innovative Nurse-Led Delivery Solutions* project demonstrated that a robust quality improvement approach, focused on small tests of change in designing, testing, and adopting innovative care delivery solutions, can be effective in increasing Thriving from Work scores for nursing staff. The approach can also lead to higher scores for individualized measures selected by the pilot organizations. This project included use of the PDSA cycle, rigorous measurement and analysis, engagement of, and mentorship by, senior leaders across disciplines, and change management strategies such as early engagement of frontline staff and continuous communication with staff, partners, and, as appropriate, with patients and families.

Results from the project demonstrate that using the Model for Improvement for care delivery innovation has the potential to help health care organizations identify and test innovative and sustainable solutions that ease the workload burden on nurses and, ultimately, create a thriving nursing workforce that meets the demands of today's health care environment.

**“Over three quarters of our staff feel that virtual nursing and monitoring is improving or greatly improving patient safety and over half feel that it is increasing their workplace flexibility and improving their well-being.”**

—Nurse Leader, WellSpan Health

## Appendix A: Innovation Cycle Expert Panel

IHI appreciates the important contributions of the expert panel members, who generously shared their knowledge and recommendations (titles and affiliations at time of expert panel).

- Katie Boston-Leary, PhD, MBA, MHA, RN, NEA-BC, Director of Nursing Programs and Healthy Nurse, Healthy Nation, American Nurses Association
- Lynda Benton, Senior Director, Global Community Impact Strategic Initiatives, Johnson & Johnson Nursing
- Vicki Good, DNP, RN, CENP, CPPS, Executive Director of Professional Development, Mercy Hospital
- Kathy Howell, MBA, BSN, RN, CNE, UCHHealth (University of Colorado)
- Marian Johnson, MPH, Senior Research Associate, IHI
- Joseph Lindell, PhD, RN, FAAN, FAONL, Clinical Professor and Director (DNP and MSN programs), University of Iowa College of Nursing
- Julie Kennedy Oehlert, DNP, RN, Chief Experience and Brand Officer, East Carolina University Health
- Annette Macias-Hoag, DNP, MHA, BSN, RN, NEA-BC, CENP, Executive Vice President, Chief Nursing and Patient Care Officer, Rochester Regional Health
- Daniel Marchalik, MD, MBA, Executive Director, MedStar Health Center for Wellbeing
- Patricia McGaffigan, MS, RN, CPPS, Vice President, IHI
- Todd Nelson, FHFMA, MBA, Chief Partnership Executive, Healthcare Financial Management Association
- Kristine Olson, MD, MSc, Chief Wellness Officer, Yale New Haven Hospital
- Maureen Sintich, DNP, MBA, RN, WHNP-BC, NEA-BC, Chief Nurse Executive, Inova Health System
- Jasmine St. Cyr, BS, Associate Project Manager, IHI
- Charleen Tachibana, DNP, RN, FAAN, Senior VP, Chief Quality, Safety & Patient Experience Officer, Common Spirit Health and Virginia Mason Franciscan Health
- Jane Taylor, MBA, MHA, EdD, Improvement Advisor, IHI
- Nicola Truppin, JD, Principal, Health Navigator Partners
- Amy Walsh, MSc, Project Manager, IHI
- Amy Weckman, MSN, APRN, CNP, CPHQ, Project Director, IHI
- Deb Zimmerman, DNP, RN, NEA-BC, FAAN, CEO, DAISY Foundation; President-Elect, American Organization for Nursing Leadership

## Appendix B: Innovation Cycle Expert Interviews

IHI is thankful to the many experts who shared valuable insights during the Innovation Cycle that serves as the foundation for this work (titles and affiliations at time of interviews).

- Claire Zangerle, DNP, MBA, RN, NEA-BC, FAONL, FAAN, Chief Nursing Officer, Allegheny Health Network
- Katie Boston-Leary, PhD, MBA, MHA, RN, NEA-BC, ANA Director of Nursing Programs and Healthy Nurse, Healthy Nation
- Robyn Begley, DNP, RN, NEA-BC, FAAN, CEO, American Organization of Nursing Leadership
- Ronda Hughes, PhD, MHS, RN, FAAN, Senior Director for Professional Practice, American Organization for Nursing Leadership (AONL)
- Deb Zimmerman, DNP, RN, NEA-BC, FAAN, CEO, DAISY Foundation, President-Elect, AONL
- Lesly A. Kelly, PhD, RN, Assistant Professor of Nursing, Arizona State University
- Mary Ann Donohue-Ryan, PhD, RN, APN, NEA-BC, CPHQ, FACHE, Executive Consultant, Chilton Medical Center
- Patti Lisk, MSN, DACCE, Professor of Nursing, Germanna Community College
- Pat Rutherford, RN, MS, Vice President, Continuum Portfolio, IHI
- Jessica Perlo, MPH, Senior Project Director, IHI
- Maureen Bisognano, MS, Senior Fellow, IHI
- Eileen Dohmann, RN, MBA, NEA-BC, Vice President, Nursing, Mary Washington Healthcare
- Terri Gaffney, Assistant Professor, Marymount University Malek School of Nursing Professions
- Vicki Good, DNP, RN, CENP, CPPS, Executive Director, Mercy
- Patricia Hart, DNP, MSN, RN, CPN, NE-BC, Chief Nursing Officer, Medical University of South Carolina, Charleston
- Lisa James, DNP, RN, MHA, NEA-BC, Assistant CNO, MUSC, Kershaw Medical Center
- Christine Kovner, FAAN, PhD, RN, Professor, New York University
- Farinaz Havaei, RN, MERM, PhD, Assistant Professor, University of British Columbia
- Pamela Cipriano, PhD, RN, FAAN, Professor, University of Virginia School of Nursing and President, International Council of Nurses

- Jacquelyn Claude, MSPH, BSN, RN, Nurse Manager, VA Hampton Virginia Healthcare
- Jacquelyn Wilmonth, RN, MSN, Deputy Executive Director, Virginia Board of Nursing
- Jeannette Bronsord, DNP, MS, RN, NEA-BC, Executive Director, Surgical Services, Yale New Haven Hospital
- Ena Williams, PhD, MBA, RN, CENP, Chief Nursing Officer, Yale New Haven Hospital
- Joanne Disch, PhD, RN, FAAN, Member, Lucian Leape Institute; Former Board Chair, Advocate Aurora; Former President, ANA/AACN
- Deborah B. Laughon, MSN-ED, MS, DBA, CCEN, CENP, Director of Professional Development, Advent Health Celebration
- Morgan May, DNP, MSN, MBA, RN, CENP, Vice President and CNO, Ballard Health Johnson City Medical Center
- Jennie McInnis, MSN, Director of Centralized Nursing Support, UNC Rex Hospital
- Lori Rhine, MSN, Chief Nursing Officer, UNC Health
- Patricia Mook, MSN, RN, NEA-BC, CAHIMS, FAONL, Vice President of Nursing Operations, Atrium Health
- Julie Kennedy Oehlert, DNP, RN, Chief Experience and Brand Officer, East Carolina University Health
- Kathy Howell, MBA, BSN, RN, Chief Nurse Executive, UHealth (University of Colorado)

# Appendix C: Comprehensive List of All Proposed Change Ideas

Primary Driver	Change Idea
Interprofessional Support, Teams, and Resources	Utilize early mobility technicians to mobilize patients
	Troubleshoot technology and equipment issues utilizing a patient technology technician
	Provide concierge services through non-clinical support roles
	Establish experience coordinator positions using non-clinical staff
	Document care utilizing scribes
	Utilize a non-clinical linen aide to provide support for bed changes and towel services
	Deliver select patient education through trained non-clinical support roles
	Implement nurse practitioner team lead on hospital unit
	Create safe teams with interdisciplinary partners (e.g., security, chaplain, supervisor, BH expert)
	Utilize pharmacy technician for medication administration and reconciliation
	Conduct proactive patient rounding with dedicated behavioral health specialists
	Utilize virtual care for interpreter services
	Create a non-clinical call bed respondent role
	Utilize a room assistant for non-clinical support needs
Virtual Care Delivery	Conduct proactive ED admissions virtually
	Perform routine admissions virtually
	Coordinate transfer of patients utilizing virtual nurse
	Complete social drivers of health assessment virtually
	Utilize virtual nurse for patient rounding
	Perform patient observation virtually
	Complete pre-procedure and pre-op checklists virtually
	Perform pain reassessments virtually
	Conduct audits virtually (e.g., fall mats, hand hygiene, reposition sheet)
	Establish virtual process for Epic handoff tool completion during downtime
	Utilize technology assistance virtually (e.g., BeWell network, Amazon Echo)
	Establish nurse-to-nurse consult/resource/mentor support virtually
	Utilize a virtual nurse partner for “four eyes” skin assessment
	Implement virtual case management
Manage wound consults virtually	

	Conduct virtual diabetes nurse education and consults
	Utilize virtual nurses for chart review
	Complete documentation virtually
	Perform patient education virtually
	Manage discharge preparation virtually (e.g., discharge checklist, EDD compliance, barrier assessments)
	Conduct discharges virtually
	Coordinate care through remote mission control nurse expeditor/facilitation of care
	Monitor telemetry virtually
	Implement a virtual support team for code/rapid response/sepsis/falls
	Conduct virtual multidisciplinary rounds
<b>Innovative Technology</b>	Create equitable nursing staff assignments using an Epic workload tool
	Utilize integrated wearable patient monitoring (e.g., charting, alerts, vital signs)
	Monitor patient status using predictive analytics technology
	Create documentation and administrative efficiencies utilizing AI
	Enable AI for enhanced patient care delivery
	Utilize MOXI/Robots for patient care (e.g., pharmacy, supply, and equipment delivery)
	Utilize MOXI/Robots for staff needs (e.g., coffee and food delivery)
	Establish unified communication system (e.g., Cisco, Jabber, Vocera) for rapid communication between staff members or departments

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