
A Nurse's perspective on interoperability



Introduction

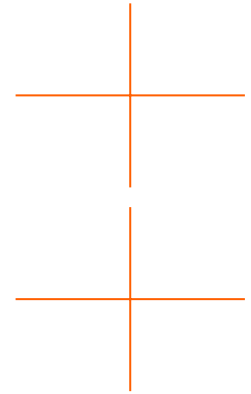


The interoperability regulations for Health Information Exchange (HIE) platforms aim to accelerate broad-based healthcare data sharing and appropriate information access. Promoting open system interfaces, restricting information blocking, supporting health information access that adheres with privacy and jurisdictional laws and policies and implementing other interoperability requirements promises to usher in a new era of optimised, consumer-friendly health records.

We often discuss health data sharing from the enterprise or physician perspectives. However, examining data sharing through a nursing lens is also imperative. Nurses use critical thinking to understand and plan for the needs of the whole patient, not just their immediate medical issues. We must prioritise their access to high-quality, real-time, broad-based patient

health information to support nurses.

This white paper explores the nurse's relationship to robust data exchange and management. How does interoperability help a nurse working on the front lines of healthcare? This white paper identifies the nursing challenge as critical thinking about the care of individual patients while adapting to the healthcare industry's near-constant state of transformation. It outlines the strategic context for nursing and the specific data requirements that context engenders. This report offers recommendations regarding the technology capabilities best suited to meet the needs of nurses on the front lines of healthcare. A glimpse into some high-value nursing use cases helps frame the substantial benefits of the right interoperability platform. In this respect, we highlight the unique role of Health Information Exchanges (HIE).



Nursing's Strategic Context: Critical Thinking While Adapting to Industry Transformation

- Globally and within the United States, an overarching objective of healthcare reform initiatives is to move the system toward value-based care (VBC). Payers and governments typically define “Value” as the ratio of two numbers “the quality of healthcare achieved” and “the cost of achieving that quality.” One of the early thought leaders in this space is Professor Michael Porter, who defines value as the ratio of “outcomes that matter to patients” divided by the “cost of achieving those outcomes.”¹ In Porter’s rendering of value, a fundamental improvement to the model is its emphasis on outcomes that matter to patients. Since nurses typically prioritise outcomes that matter to their patients, it should not be surprising that nursing is key to achieving value.
- Value-based care has not yet achieved full adoption across the health system, but it has made progress in recent years. For instance, The Health Care Payment Learning & Action Network (LAN) latest APM Measurement report released in December 2021 showed that 40.9 percent of US healthcare payments, representing approximately 238.8 million Americans and over 80 percent of the covered population, stemmed from value-based reimbursement models last year.²
- Value-based care is also helping propel changes in where care happens. A growing range of inpatient procedures are now being done at ambulatory or alternative facilities or in virtually supported home care settings to deliver more cost-effective care. Of necessity, the COVID-19 pandemic increased the adoption of virtual care to such an extent that telehealth usage has been forecasted to increase sevenfold by 2025.³ As an indication of the impact on nurses, a study found that “use of telehealth resulted in twice as many activities completed by nurses and showed better outcomes resulting from greater patient-nurse communications.”⁴

¹ Porter, Michael E., and Elizabeth O. Teisberg. *Redefining Health Care: Creating Value-Based Competition on Results*. Boston: Harvard Business School Press, 2006.

² Rev Cycle Intelligence, *The State of Value-Based Reimbursement, Financial Risk in Healthcare*, December 2021

³ M. Miliard, “Telehealth set for ‘tsunami of growth,’ says Frost & Sullivan,” *Healthcare IT News*, May 15, 2020

⁴ C. Davis, “Telehealth Increases Nurses’ Workload,” *HealthLeaders*, April 30, 2021

Nursing Data in Context



Healthcare industry trends, including the move to VBC and increasing patient empowerment, are shaping the context of nursing care. The clinical indicators of each health care condition being trended are, for example, a new Care Coordination model with pertinent markers, change frequently and often; they require a high degree of adaptability. An essential thread throughout is the expansion of nursing roles and the multidisciplinary team model of care. Unsurprisingly, the availability of comprehensive, high-quality patient data is a crucial element. Even more is the ability to turn that data into meaningful information.

Expanding & evolving roles:

Nursing roles are expanding and evolving. In many cases, nurses now lead a team of clinicians and non-clinicians all attending to the patient in specific ways. Nurses take on leadership roles and apply their critical thinking skills, reviewing and applying pertinent health guidelines for every patient. In this way, they ensure that the needs of every patient they are responsible for are met and that the next steps in care are appropriately planned.

- **Leading and participating in multidisciplinary care teams.** Teams now must be more patient-centric, including all clinicians participating in the patient's care working across traditional departmental silos and "outside the four walls" of the hospital. Today, teams must include the patient and their caregiver. Nurses are key to ensuring the multidisciplinary care teams are well functioning and focused on the service of each patient's needs.
- **Care coordinator.** Acting as Care Coordinators, nurses take a proactive, data-driven approach to managing a cohort of patient's needs with a focus on the continuum of care. Because nurses are trained to understand the whole clinical context and each patient's desired outcomes, they can coordinate care more than say an administrative coordinator. In surveys, patients state they think their clinicians should help them efficiently navigate the healthcare system, and not just provide clinical advice on the current complaint. Nurses are often the primary person helping patients navigate the system.
- **Patient advocate.** Healthcare is complex and delivered by busy clinicians juggling multiple



patients and tasks. In this situation, it is easy for an individual patient's needs to be overlooked or deprioritised. Nurses play an essential role in advocating for the needs of each patient. Nurses, backed by their holistic knowledge of the patient and having the correct patient information presented to them, can apply appropriate guidelines and assess the patient's needs in the context of the patient's current health conditions.

- **Population health management.** Analytic tools enable clinicians and care managers to address care at the population level, which 79% of leaders in one survey said is critical or very important to future success.⁵ Well - configured analytics tools allow nurses to accurately target and manage their patients, focusing on those patients with gaps in their care when compared to evidence-based guidelines.
- **Patient participation and empowerment.** Nurses are patient advocates and educators – their primary goal is to assist their patients in self-managing their conditions. In the 21st century, nurses play a significant role supporting patients' use of new digital tools including patient

portals, telehealth, remote monitoring devices, and the digital front door. Nurses are essential in partnering with patients and educating them on their health and care plan information. An example may be a patient managing a chronic illness such as Diabetes; nurses are well positioned to partner with the patient and play a key role in educating and empowering them to be participants, and where possible, self-manage their condition with access to the right tools and information.

⁵ Numerof & Associates, The State of Population Health: Fifth Annual Numerof Survey Report, August 2020.

Essential Information Requirements for Optimal Support of Nursing

To support critical thinking and decision making, nurses need information that is:

- **Trusted.** Nurses make life and death decisions and take direct actions every day, mainly based on the information they have access to at the time. Nurses need to know what they are looking at and what source it is from.
- **Readily accessible** to support nurses' caring for their patients. Critical thinking involves analyzing the available information about each case and deciding on the best course of action. Rather than being "drowned with data," nurses want relevant, organised, pertinent information that supports their critical thinking.
- **Comprehensive.** Depending on the individual patient situation, nurses may need complete information from all the care sites and encounters that have provided care to their patients. A thorough clinical picture emerges when data is available from the community, hospital care, and other relevant sources such as patient-generated data, behavioral health data, and social determinants of health data. Even though it's good to have comprehensive data, the solution must organise all available data and present it to reflect the information of value to the clinician.
- **Respects the importance of a single source of truth.** Understanding the single source of truth is a concept that is key

to managing integrated data. It follows that it's crucial to take the time and effort to ensure that all data is displayed with its relevant metadata, including source, time, facility, or author, so that nurses know and fully understand the information on which they rely. The first step in building a comprehensive Health Information Exchange is to view data pulled from underlying Electronic Medical Records (EMRs) and other source systems. Solution architects pay detailed attention to the visual integration process to ensure clinicians understand what they are "viewing." When nurses enter data into the shared HIE record (sometimes called "doing"), the data or subsets of the data, once saved or submitted, must be appropriately available for viewing by all other participants caring for the patient.

- **Real-time.** The nurse's real-world patient-facing role involves making real-time decisions that depend on access to data that is as current and up to date as possible.

The right vision for clinical care supported by information technology is to return time to caregivers while supporting efficient, high-quality care. We present a conceptual model for how this can work in Figure 1 below. The software supports data aggregation, analysis, and taking action based on the data. Further, the software wraps around the care team to help them in their job of delivering care in a patient-centric way (the patient is at the center of the circle).

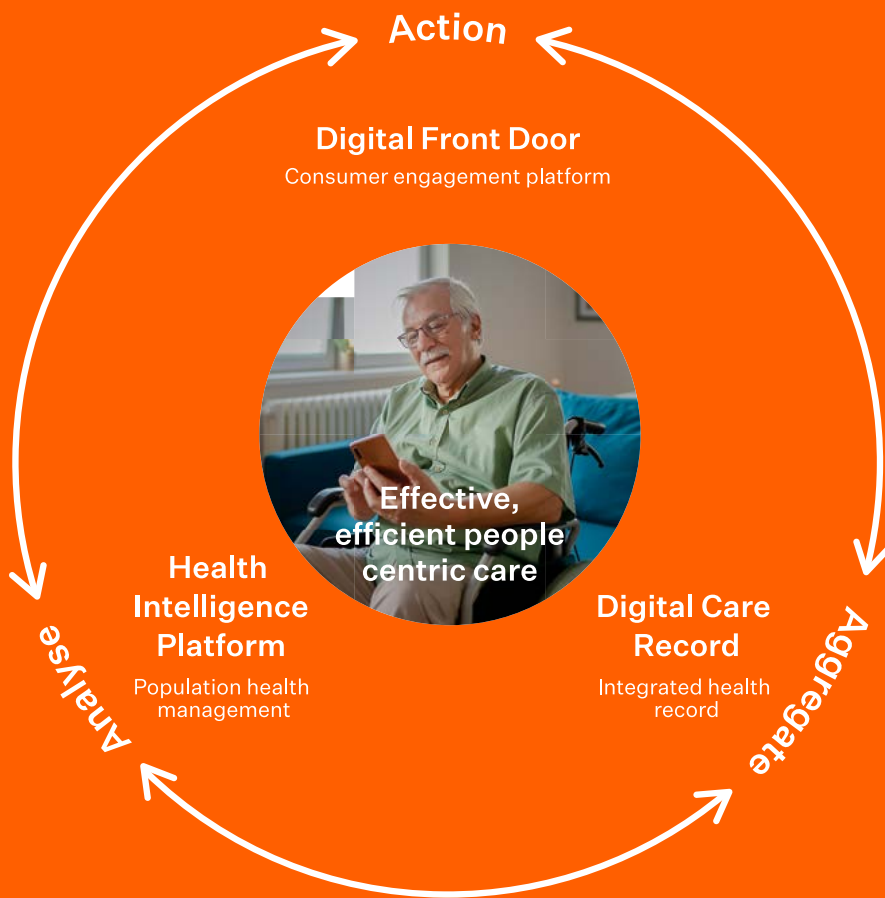


FIGURE 6: DELIVERING CARE IN A PATIENT-CENTRIC WAY

Nursing Use Cases and HIE

Every day nurses require access to comprehensive patient health information. Here are some examples:

Healthcare industry trends, including the move to VBC and increasing patient empowerment, are shaping the context of nursing care. The clinical indicators of each health care condition being trended are, for example, a new Care Coordination model with pertinent markers, change frequently and often; they require a high degree of adaptability. An essential thread throughout is the expansion of nursing roles and the multidisciplinary team model of care. Unsurprisingly, the availability of comprehensive, high-quality patient data is a crucial element. Even more is the ability to turn that data into meaningful information.

- **A New Patient encounter** – Primary, secondary, and tertiary care all can benefit from leveraging patient health information views that are displayed thoughtfully on a comprehensive digital platform. Consider a nurse encountering a patient for the first time at the primary care clinic or a hospital ward and requiring data not available within the charting EMR. Typically, a nurse will spend much of their time calling or requesting required health information. There may be a delay in care, and the patient experience is compromised. If the nurse could access pertinent information from integrated views of multiple patient care records electronically, the nurse could use that information quickly and easily to support critical thinking. There are many places where a new patient encounter can happen, e.g., in the community practice, in the Emergency Department, new admissions in the hospital for surgical or medical care, and transfers of patients to long-term care or rehab facilities.
- **Complex chronic care** – A complex chronic care patient typically has more than two medical conditions and multiple care providers, each requiring a specific care plan. This is in addition to potential mental health, behavioral health and socio-economic barriers and interactions with numerous providers over their healthcare journey. Health Information Exchange and access to comprehensive patient data is critical in caring for these patients. Nurses are an ideal team lead for these patients and are well positioned to facilitate and coordinate complex chronic care. When there is access to complete data, nurses can determine appropriate care plans and care coordination needs for the whole patient.
- **A current patient under the care of multiple caregivers and specialties** –When a nurse's current patient has had treatment/procedures, interventions, medication adjustments, or care from other providers who



are not part of the primary care organisation / or not using the same charting tool, the HIE can give rapid awareness of elements of the patients care, such as new orders, care plans, med changes, specialist visits, new members to the care team and additional new diagnoses or therapies done. In this way, the HIE can support the decision-making and care plan development of the nurse overseeing the current patient's care. Knowing that another clinician has added a new medication, for example, can prompt the nurse to take several further actions to advance the patient's care. For instance, the nurse may perform an in-clinic weight or blood pressure measurement or a lab request to monitor the effectiveness of the new medication and be alerted if there is an adverse effect that requires review.

- **Cohort management** – Shared characteristics define a cohort. The cohort is typically under the responsibility of a doctor or clinic. Nurses carefully track patients in a cohort as part of the provider's daily management routine.
1. Data once again takes center stage in these efforts. On the front end, comprehensive patient information is essential to forming logical panels based on identified pertinent patient elements and attributes. Ongoing group management, especially to achieve population and public health objectives, requires

complete visibility to care across all appropriate providers. That might mean knowing that a patient has seen a specialist outside of the region or accessed community-based health programs, knowledge often hidden to the nurse today. Also becoming indispensable is full support for remote monitoring devices and patient self-reporting.

2. Data harvested from these sources can also help nurses with their overall critical thinking and decision-making. Rich panel data animates trend analysis. Nurses and physicians want to anticipate problems, not just react. Tracking variables such as weight loss, kidney function lab results or disease-specific indicators such as blood pressure or blood sugar readings can identify individual or population trends that may signal a need for intervention. Accessing all the pertinent data can also prevent duplication of tests ordered or outreach calls if the patient has already met their healthcare needs.

There are many other valuable use cases.

The good news is that organisations can identify the relevant health data viewing requirements and easily implement health data platforms that enhance patient and population level views for nurses. Optimising health digital tool supports can be achieved with greater success when a committed partnership is made with an organisation, an HIE and clinician workforces such as nurses.

Generating Benefits for Nurses

Substantial benefits accrue from wide adoption of the kind of interoperable data management platforms delineated in this report. Among the most important:

Streamlined nursing workloads

Even prior to COVID-19, clinicians were overburdened and highly stressed. In a 2019 survey, 44% of RNs said they often feel like quitting.⁶ A recent study that accounts for the pandemic experience found 22% indicating they may exit patient care within the next year, with over half citing insufficient staffing levels and intensity of the work.⁷ The pressure continues to mount in the face of looming shortages. A supply-demand gap of 1.5 million nurses is projected by 2026.⁸ Reliable, single source of truth, current information that is readily accessible boosts nursing efficiency considerably, minimising frustration levels, maximising ability to manage workloads, and fostering retention.

Better care decisions

Reducing routine documentation and “hunting for data” returns time to nurses, allowing them to focus less on administrative detail and instead focus on critical decision making and patient centered care. This information best supports Holistic care. The impact on outcomes is significant and durable. Optimal viewing of patient health data supports the nursing critical thinking skills core to excellent nursing care.

Enabling team-based care

A recent survey on hospital priorities for 2021 found care coordination topping the list, with nearly two-thirds focused on the effort.⁹ Nurses are central agents in collaborating across a complex landscape of settings and caregivers. Full interoperability will help nurses and others coordinate effectively by providing data that creates 360-degree views of the patient for the entire team.

Advancement of population health management and personalised medicine

This ecosystem is also helping care become increasingly individualised, leading to what experts describe as “precision medicine,” while simultaneously supporting population health management. Covering this scale spectrum is fundamental to optimising care delivery for all.

New Models of delivering health care fast - tracked by the COVID-19 Pandemic

The COVID-19 pandemic has impacted the health system in many ways; most relevant are two things:

1. Massive impact on clinicians at the front line because of increased staffing requirements, increased nursing workloads, reduced staffing availability has led to burnout.
2. The realisation that more care can move to the home supported by community-based telehealth expansions. The evolving parameters around telehealth, such as what’s safe to do at home or remotely and when does the patient need to see a clinician to be reexamined or even admitted for care are changing the standard care delivery paradigm. Nurses have been at the cutting edge of new approaches to delivering health care.

⁶ AMN Healthcare, Survey of Registered Nurses, 2019.

⁷ McKinsey & Company, 2021 McKinsey Future of Work in Nursing Survey, May 2021.

⁸ American Hospital Association, 2021 Environmental Scan, December 2020.⁹ C. Davis, “Telehealth Increases Nurses’ Workload,” HealthLeaders, April 30, 2021

⁹ Xtelligent Healthcare Media, Healthcare Industry Priorities 2021, May 2021.

Conclusion

Nurses have a tremendous stake in health data interoperability and health data management. At Orion Health, we are proud of the contributions of our nursing colleagues. Nurses are transforming the future landscape of healthcare by ensuring that patients receive high-quality, compassionate, and appropriate care in the best way for our patients, families, friends, community members, and society. They both create and consume copious amounts of patient information. The great promise

of broad interoperability makes it imperative to implement the right data management platform that respects the changing demands of contemporary nursing. Nursing is one of the highest volume of clinicians utilising HIEs. Their contributory value will increase as they have opportunities to be included in developing, using, and optimising health information interoperable clinical tools.

