MOVING BEYOND ROI:

How to Bring Digital Health Technology to Patients Now

TABLE OF CONTENTS:

INTRODUCTION

Digital health technology is transforming the way hospitals operate.

Although the evolution is being accelerated by the COVID-19 pandemic, a system-wide change was underway even before the disease hit. For instance:

- In most areas of Canada, provincial and regional digital health strategies have been established to give patients and providers access to digital records and tools that help improve experience, efficiency and care.
- Globally, in the past decade, attention has increasingly been put on patient engagement applications, patient experience software and other similar technology.

These strategies, in addition to the internationally recognized *Quadruple Aim* framework, encourage hospitals to leverage digital health technology to achieve better outcomes and provide better experiences for patients and providers, all at a lower cost. Stakeholders – from healthcare professionals and hospital administrators, to government agencies – increasingly recognize that patient engagement and empowerment is good for patients, clinicians and the healthcare system more broadly.

While the shared vision is clear, traditional decision-making methods limit hospital administrators' ability to adopt transformational technologies.

Too often, these models rely heavily on identifying the hospital's return on investment (ROI) in procurement decisions, which can be challenging to quantify for emerging solutions. In fact, favouring ROI as the most important metric can have negative impacts on the adoption of new technologies even when the solution makes sense, achieves stated digital health goals and improves clinical outcomes.

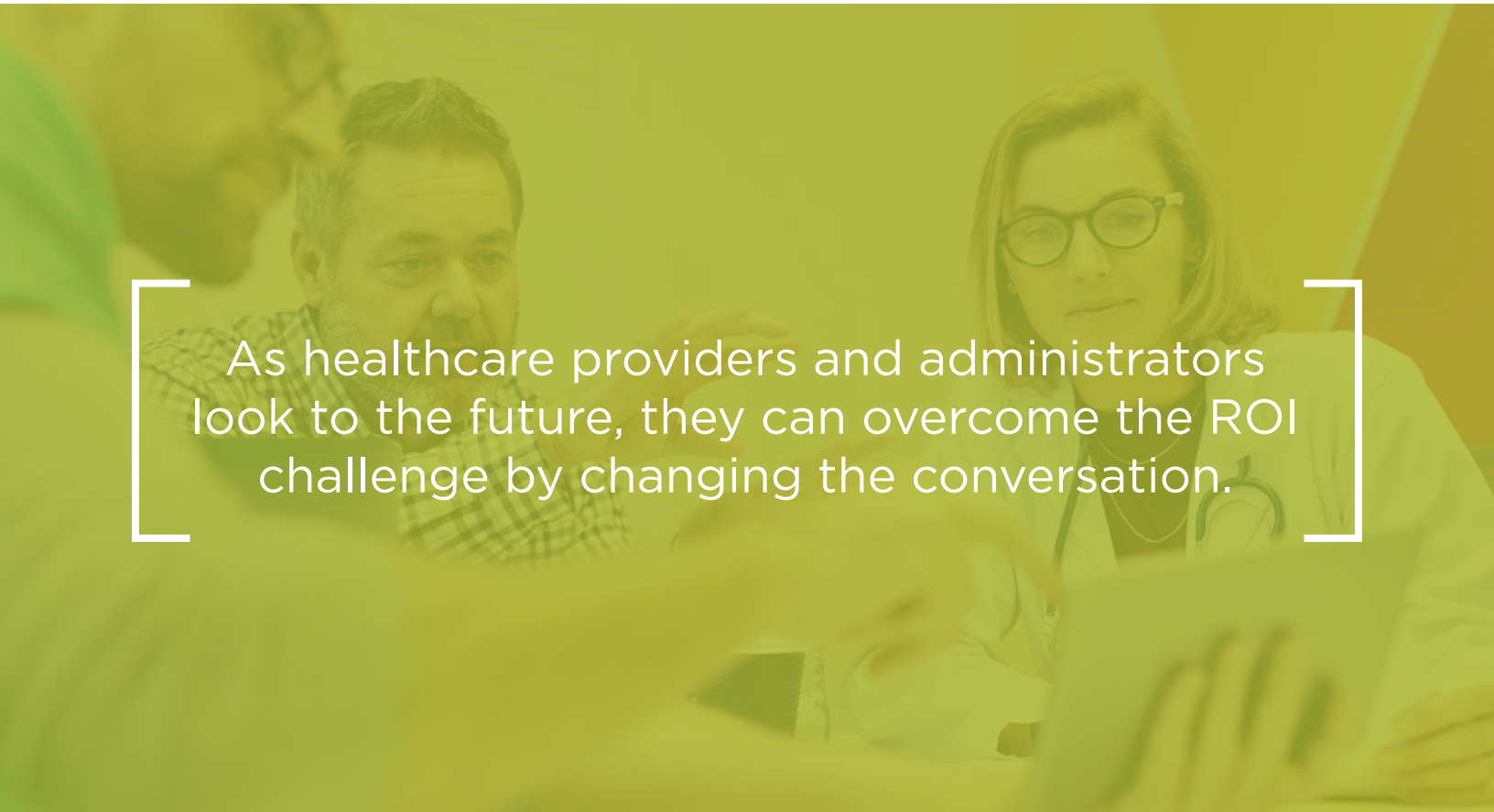
INTRODUCTION (CONTINUED)

In this ebook, we show that *there is another way.*

As healthcare providers and administrators look to the future, they can overcome the ROI challenge by changing the conversation. Digital health technology has a key role to play in driving patient-centered healthcare in the twenty-first century and it's time to put more value on patient engagement and empowerment.

This ebook is divided into several parts:

- It begins by exploring the role ROI currently plays in healthcare decision-making including its benefits, limitations and how it limits the adoption of new technologies.
- Next, it considers what other metrics can be used to make decisions and make a case for the role of intuition in healthcare administration. It argues that it is possible to responsibly take the leap into digital health technology, while continuing to measure results.
- And finally, it provides actionable steps for healthcare administrators and their teams to bring better digital health technology to their patients now.



THE ROLE OF ROI IN DECISION MAKING

In a landscape of limited financial resources and public reporting requirements, healthcare providers are rightly focused on ensuring that expenditure is fiscally responsible and provides value for money. This is especially true when large capital investments are made. Return on investment (ROI) is the metric that decision-makers often rely on when making decisions about where to allocate finite resources.

ROI is typically expressed as an equation, as follows:

$$ROI = \frac{benefits - costs}{costs}$$

The simplicity of this formulation is attractive. When the benefits can be quantified easily in dollar values, it is easy to use ROI to:

- Choose between competing vendors
- Identify the long-term financial gain of a purchase
- Measure the actual results against projections

Some hospital expenditures are easy to measure in this way. However, not all benefits are easily quantifiable in financial terms. Moreover, while cost is an important consideration, it is not the only factor that healthcare administrators need to evaluate. Clinical outcomes, patient experience, quality of care and so on are all critical considerations.

THE ROLE OF ROI IN DECISION MAKING
(CONTINUED)

Emerging digital health technology offers broad tangible and intangible benefits. However, quantifying the value of an engaged patient or a positive personal healthcare experience can be challenging. The traditional approach fails to capture the full scope of the benefits that can accrue from pursuing digital health strategies, thus skewing the ROI equation.

Digital health technology is the future of healthcare. But quantifying its impact is difficult, particularly when the pace of change is rapid and long-term data is missing. Hospital administrators are under pressure to pursue a digital transformation yet lack the metrics to track the impact of these changes. The situation can feel like a Catch-22.

That's why it's time to think beyond ROI and identify new tools for better decision making.

BROADER METRICS FOR BETTER DECISION MAKING

ROI is a useful accounting tool for investments with direct financial benefits that can be weighed against the investment made.

When making decisions on investments that have both tangible and intangible benefits, it can be more useful to use a Cost-Benefit Analysis (CBA). A cost-benefit analysis identifies both tangible and intangible benefits (and costs) and is typically used for large-scale implementations. However, because CBA involves assigning values to intangible costs and benefits via economic methodologies, it may not be possible or desirable to conduct a CBA on all procurement decisions.

However, the conceptual framework of CBA provides a useful model for thinking beyond straight ROI in decision making. What additional metrics can administrators collect and consider when making their decisions? How can the intangible benefits of digital health technology be captured?

We don't need to reinvent the wheel to go in search of these metrics.

Multiple studies have looked at various aspects of digital health technology across jurisdictions. These studies can offer alternative metrics for measuring the efficacy of digital health tools. Let's take a look at them now.

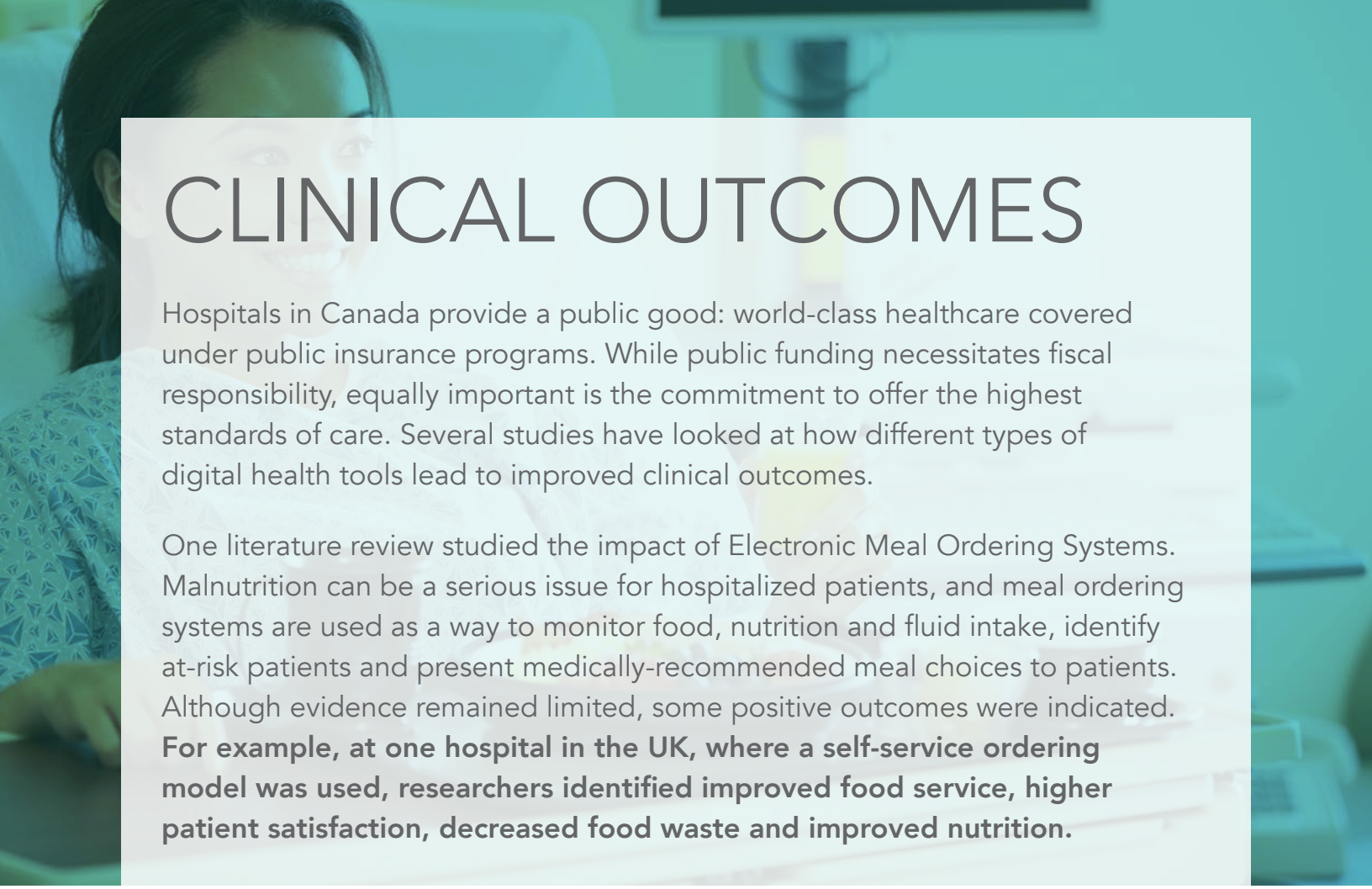
You can also visit **https://healthhubsolutions.ca/hospital-resources/** for a listing of these resources.

Efficiency

Efficiency, or deploying resources and energy while reducing waste, is a core goal of effective hospital management. Improving the efficiency of operations has direct impacts on the costs and level of service healthcare professionals are able to provide.

In 2020, Canadian Health Infoway surveyed Canadian Nurses on the use of digital health technologies in their work. The study found a growing use of digital technology, such as virtual care. **When asked, more than half (57%) of the respondents reported that these tools had increased their efficiency, among other benefits.** However, given the barriers nurses described (such as lack of integrations, lack of equipment and inadequate training), this number could potentially rise even higher with greater supports.

Healthcare administrators can rely on health professionals as expert advisors. When considering or piloting new technologies, engage your team to find out how tools impact efficiency and effectiveness.



CLINICAL OUTCOMES

Hospitals in Canada provide a public good: world-class healthcare covered under public insurance programs. While public funding necessitates fiscal responsibility, equally important is the commitment to offer the highest standards of care. Several studies have looked at how different types of digital health tools lead to improved clinical outcomes.

One literature review studied the impact of Electronic Meal Ordering Systems. Malnutrition can be a serious issue for hospitalized patients, and meal ordering systems are used as a way to monitor food, nutrition and fluid intake, identify at-risk patients and present medically-recommended meal choices to patients. Although evidence remained limited, some positive outcomes were indicated. **For example, at one hospital in the UK, where a self-service ordering model was used, researchers identified improved food service, higher patient satisfaction, decreased food waste and improved nutrition.**

Another study by iMD (2020) assessed the impact of using educational videos in addition to regular counselling by a pharmacist to support patients undergoing chemotherapy. **The outcome of the study revealed that 100% of the patients were satisfied (29%) or very satisfied (71%) with the counselling they received.** Furthermore, the average time pharmacists spent counselling patients with the support of videos was lower than with standard counselling, even when time for setup/troubleshooting was considered. Finally, the study concluded that videos can be easily shared with family, friends and caregivers for improved support, and can overcome language barriers with the use of subtitling.

The outcome of the study revealed that 100% of the patients were satisfied (29%) or very satisfied (71%) with the counselling they received.

CLINICAL OUTCOMES (CONTINUED)

At the Collaborative Chronic Care Network in Cincinnati, OH, a mobile application was developed to collect and monitor patient health data, track symptoms and outcomes, and identify issues. **As a result of this program, clinicians saw improved medication adherence and a reduction in dosages; increased patient satisfaction and overall happiness levels; and increased remission levels (from 55% to 79%).**

A study in BMJ Open examined the links between patient experience, patient safety and clinical effectiveness. The meta-study demonstrated that there are positive associations between improved patient experiences and both self-rated and objectively measured health outcomes. Other positive outcomes identified included:

- adherence to recommended clinical practice and medication;
- enhanced preventative care, such as accessing screening services and adopting health-promoting behaviour; and
- improved resource use such as reductions in hospitalizations, length of stay and primary-care visits and primary-care visits.

PATIENT ENGAGEMENT

Patient engagement (the extent to which patients are actively engaged in their treatment and experience) is increasingly recognized as an important metric to be measured in healthcare. This is due, in part, to the link between patient engagement, clinical outcomes and cost.

In one study (based on analysis of more than 30,000 patients at a large healthcare delivery system in Minnesota) researchers investigated how patient "activation" influenced both outcomes and costs. In this study, patient activation was defined as the skills and confidence that enabled patient engagement, quantified through the Patient Activation Measure, an assessment that produces a score between 0–100.

The results showed that patients with lower activation scores had higher than average predicted costs (8% in the base year, and 21% in the first half of the next year) compared to patients with the highest activation scores. Further, the patient activation scores predicted costs even after factors such as demographics, severity of condition and health risk scores were controlled for, demonstrating that patient activation and engagement has the potential to impact outcomes even for patients with significant health needs.

How do digital health tools impact patient activation and engagement?

As already seen in the previous section, digital health tools that improve clinical outcomes can also have positive impacts on patient engagement and satisfaction.

A case study analysis of Beth Israel Deaconess Medical Center further demonstrates the positive role digital health technology can play. Researchers studied how the Center uses a web-based portal intended to increase patient engagement and involvement

PATIENT ENGAGEMENT (CONTINUED)

in their care. Through the portal, patients can access their clinical records, see test results, communicate with their physician/practice, request appointments, order prescription refills and correct any incorrect medical information (such as allergies or lists of medication taken). **A study of almost 12,000 patients found that 77-87% of those accessing their records felt more in control of their care and 60-78% stated that their medication adherence had improved.**

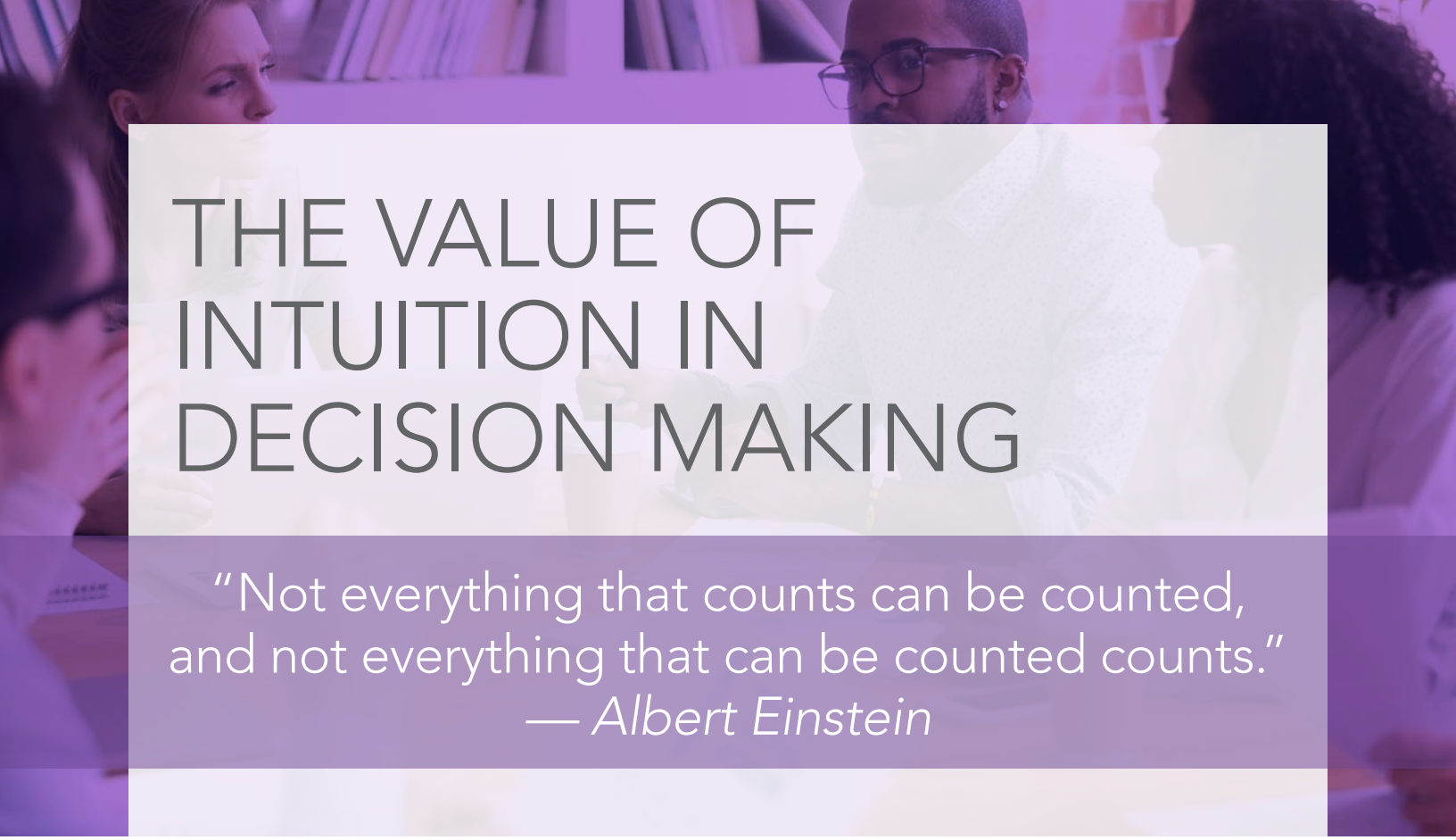
Significantly, Beth Israel Deaconess Medical Centre decided not to directly measure the impact of these innovations on quality of care, the burden on physicians, or costs. Rather they have accepted other findings as implicit evidence of a positive impact.

Is your healthcare facility currently collecting data on patient engagement? How are these numbers currently being used? What tools may support greater patient-participation in their care?

Throughout this chapter, we've identified key metrics—outside of ROI—that can be used to demonstrate the efficacy and value of digital health tools. However, what is also clear is the interrelated impact of such tools:

- As patient engagement rises, clinical outcomes improve.
- As clinical outcomes improve, costs are reduced.
- As efficiency increases, patient satisfaction rises.

The complexity of healthcare means it will often be challenging to isolate a single factor, such as ROI, and track direct impacts. However, by thinking in systemic terms and widening the lens of factors that are considered, healthcare administrators can still make evidence-backed decisions with measurable outcomes.



THE VALUE OF INTUITION IN DECISION MAKING

"Not everything that counts can be counted, and not everything that can be counted counts."
— Albert Einstein

While concrete evidence is of course valuable, it is important to remember that not everything can be measured – as Einstein famously pointed out. Rather than ruling out digital health technologies because their ROI cannot be easily predicted or demonstrated yet, how can you decide what "counts" even when it can't yet be counted?

One underrated decision-making tool is intuition.

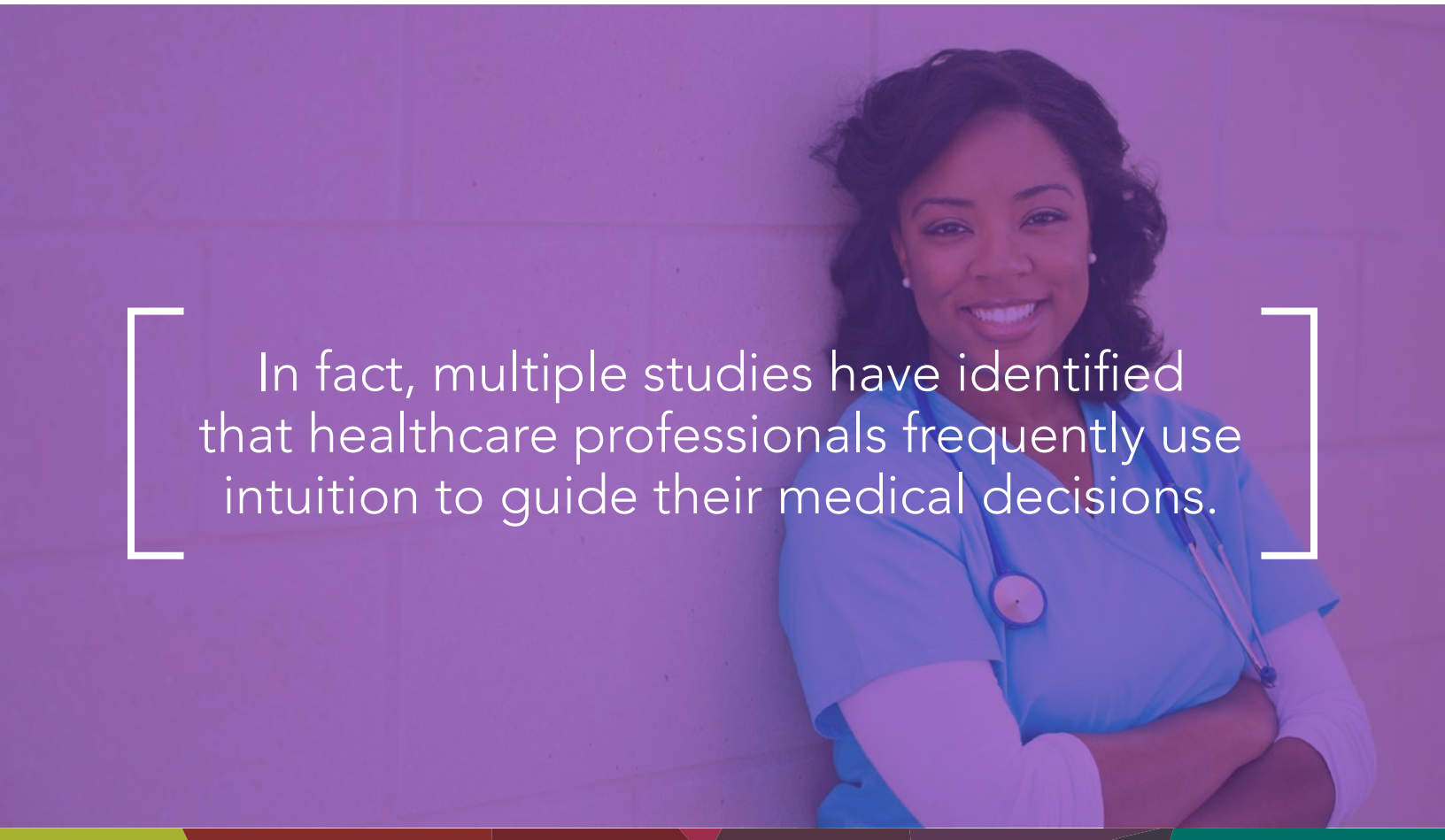
Most of us are familiar with those moments when our "gut-instinct" kicks in: even without quantitative data, an idea just "makes sense." We tend to mistrust this instinct, as we are trained to rely on observable evidence and be wary of subjective bias skewing decision-making processes.

However, clinicians often have to act on imperfect information, relying on their training and expertise to make decisions based on their best educated guess. They blend evidence, knowledge and experience to make the best decisions they can on behalf of their patients.

THE VALUE OF INTUITION IN DECISION MAKING (CONTINUED)

In fact, multiple studies have identified that healthcare professionals frequently use intuition to guide their medical decisions. For example, studies examining the role of intuition in nursing found that intuition is a critical guide for nurses as they analyze and respond to patients. In addition, intuition is more frequently employed by nurses with greater experience and expertise. While the causal direction between intuition and experience is not well-understood, it does appear that there is a strong link between expertise and trusting intuition.

Healthcare administrators can follow this example: gathering the evidence that does exist, drawing on their knowledge and trusting their expertise to identify solutions that will improve patient care and outcomes. By accepting the value of patient-empowerment and placing it at the heart of the decision-making process, it is possible to create value, even if it is difficult to measure today with quantitative certainty.



TAKING THE LEAP

The pandemic has ushered in a period of global uncertainty and change.

Canadian healthcare providers and systems have been forced to rapidly adapt to challenging circumstances. While the strain this has placed on individuals and the system as a whole should not be underplayed, we can also look for the opportunities to build upon the innovations that have been developed in response to the crisis.

In this moment, patients, providers and systems are primed for change. In the last ten months, we have seen more rapid change than in the past ten years. "Virtual is here to stay," has become the rallying cry of policy makers and industry experts alike. The pandemic has also increased patients' and providers' willingness to adopt new digital tools.

It's time to seize this opportunity and usher in new ways of working and adopt tools that will empower patients and transform our healthcare system for the better.

As adoption of digital health tools rises, results will come and the system will respond to emerging evidence. As with any new venture, we may not be able to identify all the benefits at the outset. However, this shouldn't hold us back from holding pilots and trials of digital health tools and expanding implementations of existing tools that have shown promising results.

CONCLUSION

Politicians, policymakers, clinicians and patients are all invested in strengthening our healthcare system—and recognize the role that digital health technology will play in creating a patient-centred system.

Within Canada and globally, the pandemic has brought uncertainty and disruptive change. How we respond to these challenges will shape our healthcare system for a generation.

By looking to the future and embracing new methods of measuring value creation, together, we can transform Canada's healthcare system.

ABOUT HEALTHHUB

HealthHub Patient Engagement Solutions is the provider of myHealthHub, Canada's leading digital patient engagement platform that is changing the patient experience starting at the bedside. Found in hospitals across Canada, myHealthHub is trusted by partners to provide innovative technology that enables connected care and empowered patients.

Learn more about how HealthHub can support your digital health goals, book a free demo today.

Learn more about how HealthHub can support your digital health goals, **book a free demo today**.

BLUEPRINT FOR DIGITAL HEALTH TECHNOLOGY DECISION-MAKING

STEP ONE:

IDENTIFY DESIRED OUTCOMES

Through consultation with key stakeholders, identify desired project outcomes. Considerations may include ROI but should also include other metrics such as impact on healthcare professionals, clinical outcomes for patients, patient engagement and so on.

STEP TWO:

REVIEW EXISTING RESEARCH

Identify relevant research into digital health technologies and its impact. Although each situation is unique, we can learn generally from past studies and the experiences of others. This can help in drawing preliminary conclusions about the value of digital health technology.

STEP THREE:

DEVELOP A PATIENT CENTERED FRAME-WORK FOR ASSESSING TECHNOLOGY OPTIONS

Working with stakeholders, develop a framework for how you will review possible options. This may include qualitative and quantitative measures and should include consideration of how new technologies may impact patients.

STEP FOUR:

IMPLEMENT AND MEASURE

After you've made a decision and moved to the implementation phase, ensure you create a method for measuring success. This could be a blend of metrics and qualitative measures.