

The Journey to Digital Health Transformation: The Digital Health Indicator (DHI)

Natasha Ramontal, RN, DHSc

Digital Health Strategist – Community Outcomes

Our Business Philosophy

Vision

To realize the full health potential of every human, everywhere.

Mission

Reform the global health ecosystem through the power of information and technology.

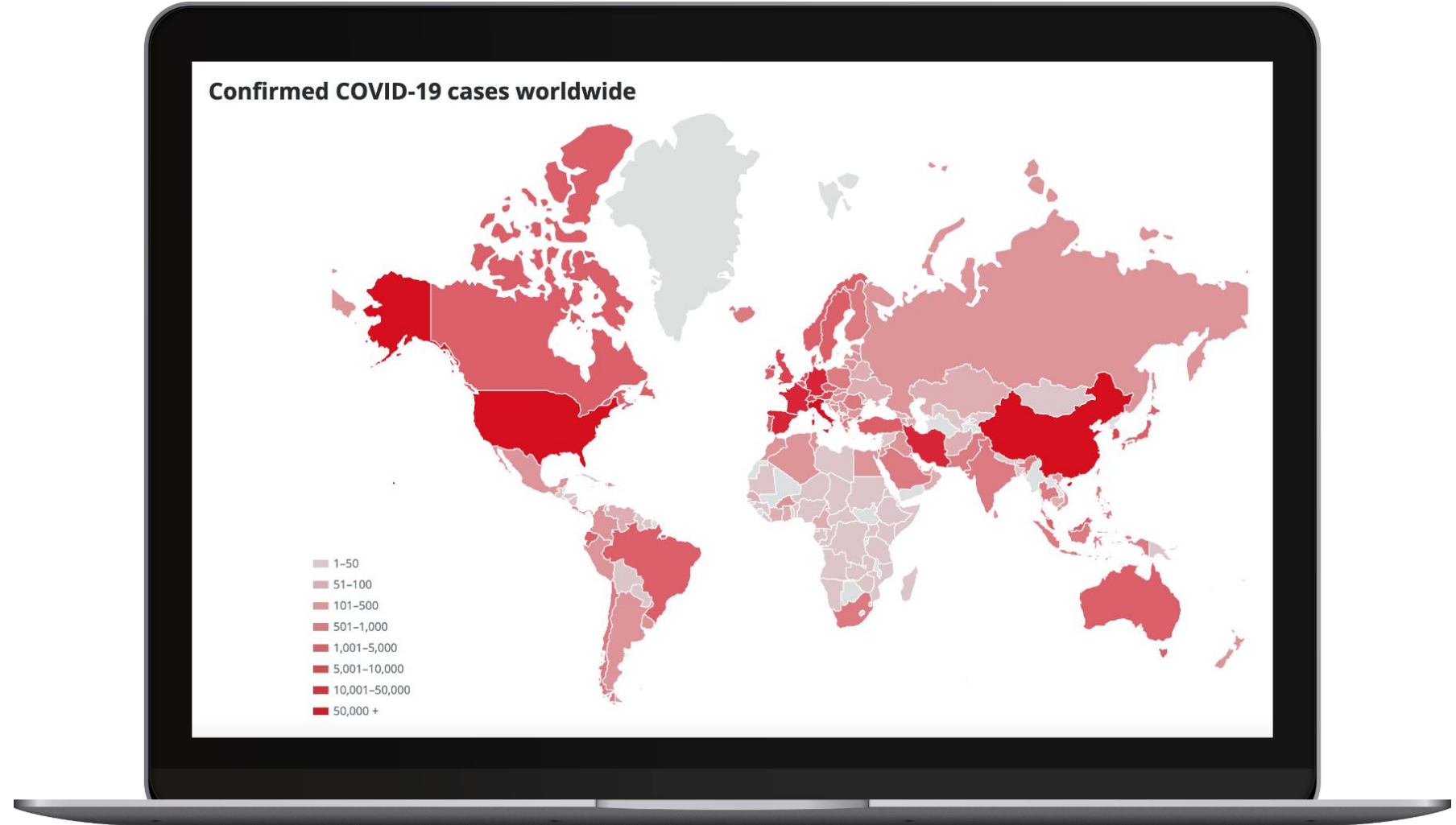
Objectives

- Define Digital Health and share the emerging opportunities to advance health system capacity and sustainability
- Learn about the Digital Health Indicator (DHI)
- Understand how digital health transformation impacts care delivery and operations
- Recognize how the DHI aligns with policies and regulatory requirements
- Discover the value of the DHI in establishing a benchmark for gauging progress toward digital health transformation

What is Digital Health?

Digital health **connects and empowers people and populations to manage health and wellness**, augmented by highly accessible and **supportive provider teams** working within flexible, integrated, interoperable, and **digitally-enabled care environments** that strategically leverage digital tools, technologies, and services to transform care delivery.

Global pandemic: Surge Demand for Health Systems



<https://newsinteractives.cbc.ca/coronavirustracker/>
Adapted from Johns Hopkins University data

Health Workforce: Sustainability

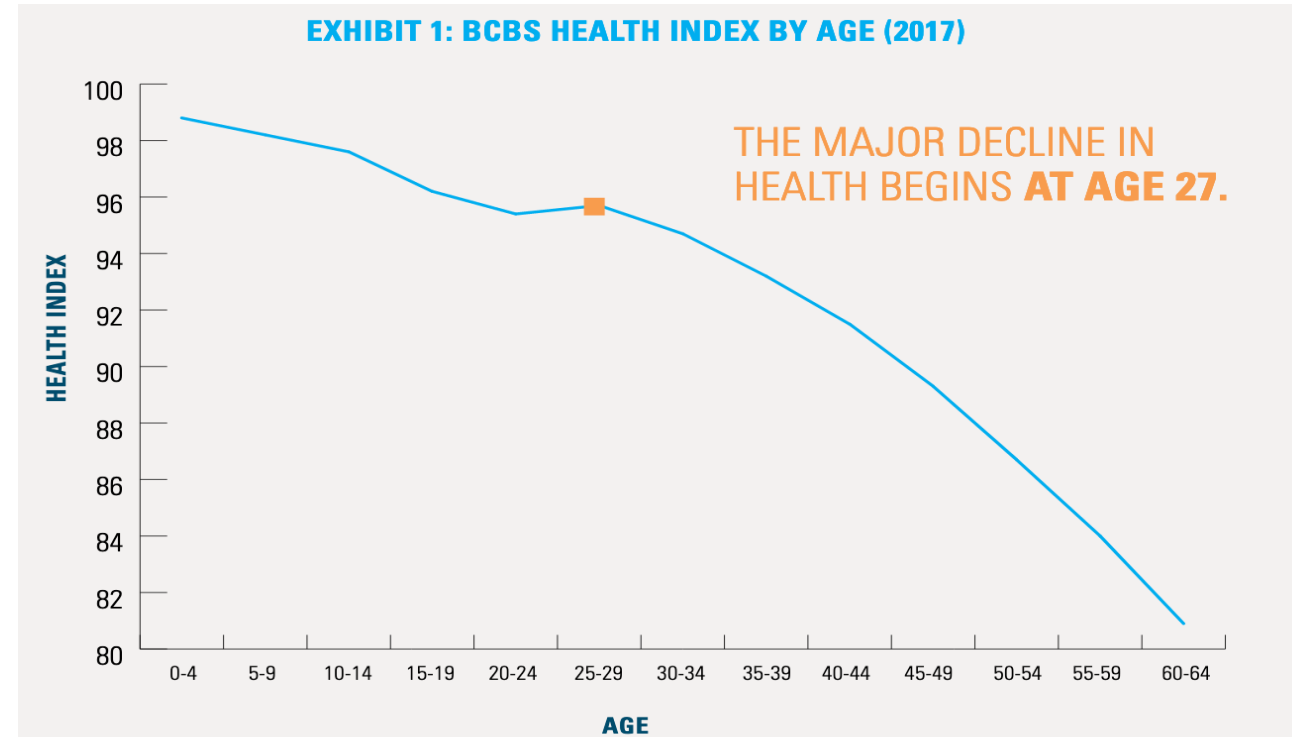
Workforce Health Pre COVID-19:

Double digit increase in prevalence of 8 of the top 10 chronic health conditions since 2014

Older millennials (age 34-36) have **higher prevalence rates for nearly all of the top 10 conditions** than Generation X members when they were in the same age range

Millennial women have **20% higher prevalence of the top ten conditions compared to men**

(<https://www.bcbs.com/the-health-of-america/reports/the-health-of-millennials>)



THE TOTAL ADVERSE HEALTH FOR MILLENNIAL WOMEN IS 20% LARGER THAN FOR MEN.

- THIS GAP IS MAINLY DRIVEN BY:
- MAJOR DEPRESSION
 - TYPE II DIABETES
 - OTHER ENDOCRINE CONDITIONS^{7,8}

Evidence of Impact of COVID-19 on the Workforce

- **High levels of fear and anxiety** - fear for their own health, and fear for the health of their family
- **Erosion of Clinician Autonomy: “taking the professionalism away from the professional”**
 - Protective equipment in critical shortage, precautionary principles abandoned
 - Erosion of trust in health system capacity to protect the workforce
- **Workforce Sustainability at Risk:**
 - high resignation rates (20-30%)

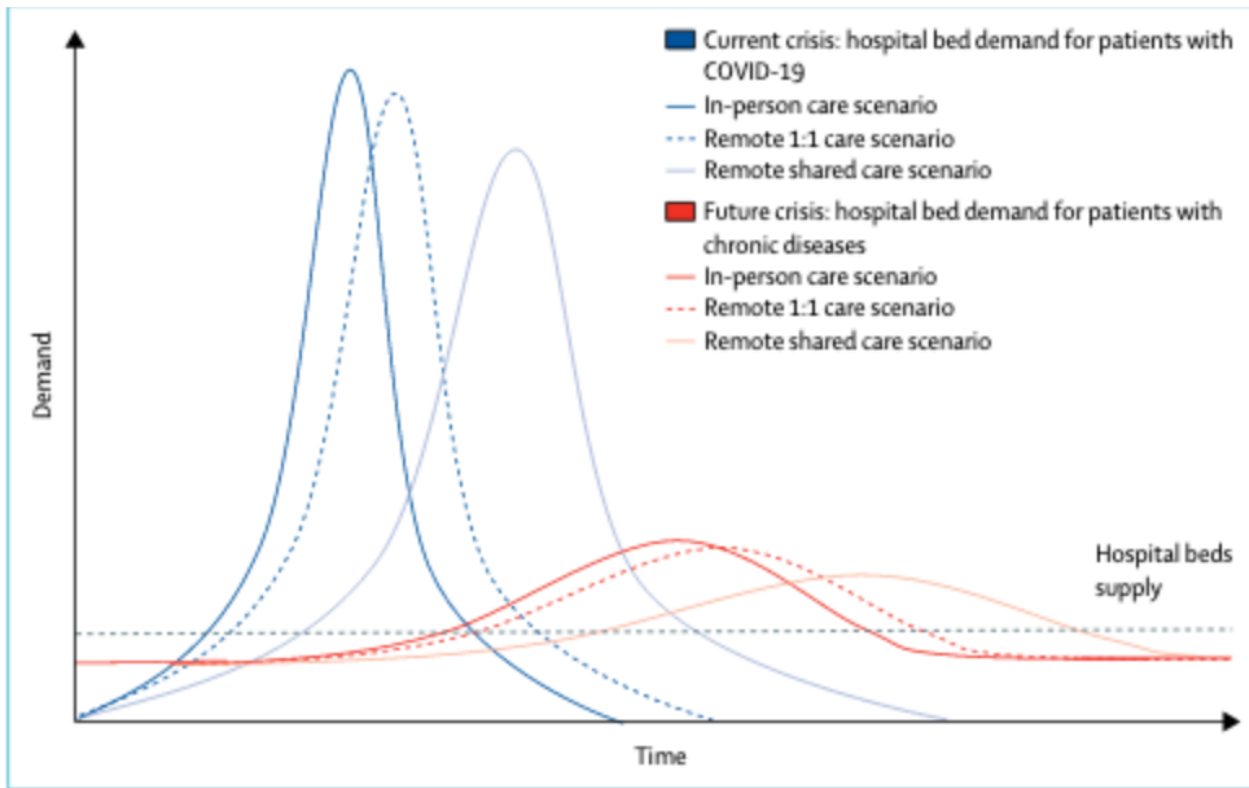
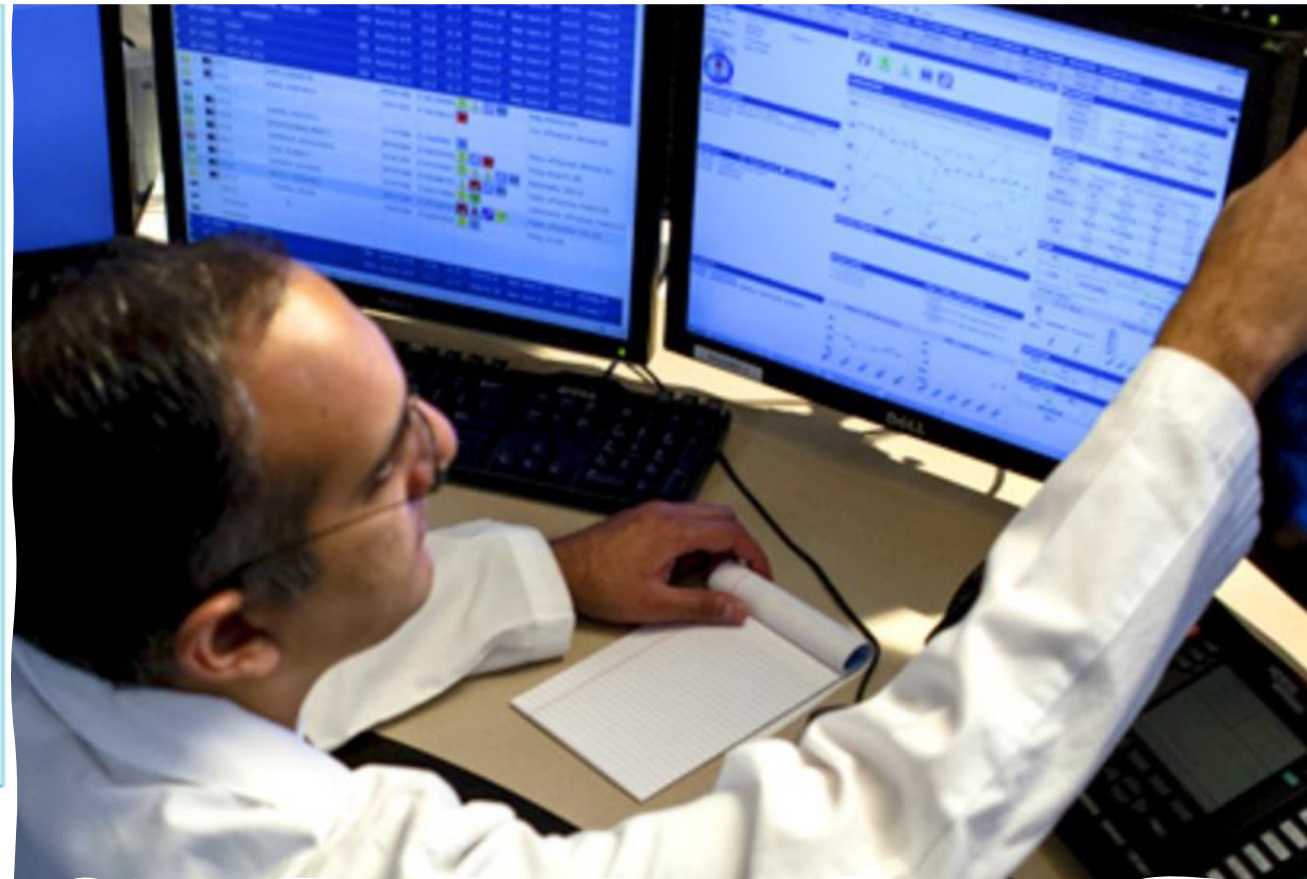


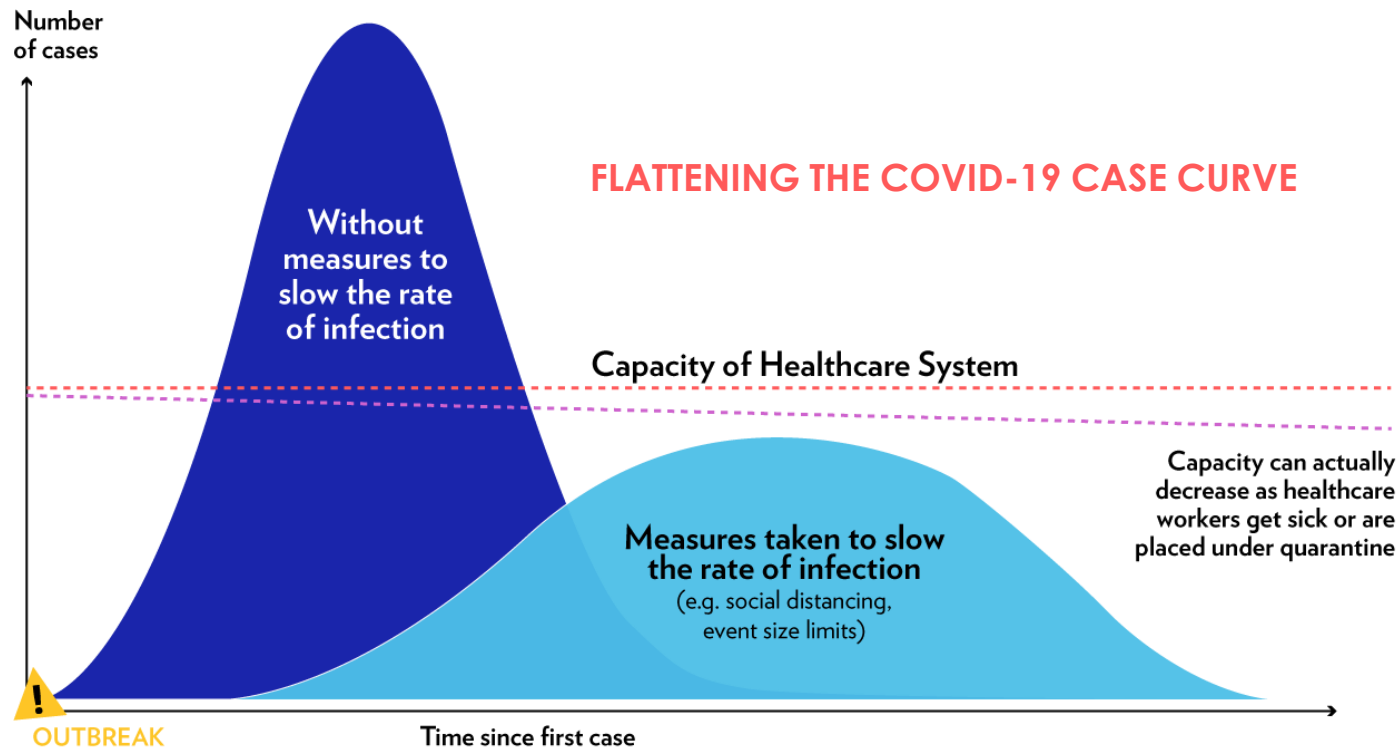
Figure: Hospital bed demand and supply for patients with COVID-19 and chronic diseases under in-person care, remote 1:1 consultations, and remote shared care delivery scenarios



Rapid Emergence of Virtual Care

- Dramatic shift in care delivery to virtual
- No measures of value, impact or outcomes
- No access to care for COVID-19 patients
- Shift to digital care delivery for workforce

The Challenge of Health System Capacity and Digital Infrastructure to Track Progress, Outcomes



Chronic Diseases in America

CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)

6 in 10
Adults in the
US have A
chronic disease



4 in 10
Adults in the
US have
two or more

THE LEADING CAUSES OF DEATH AND DISABILITY
and leading drivers of the nation **\$3.3 Trillion** in annual health care costs

Chronic disease is responsible for **75% of total healthcare costs** in the U.S...existing care delivery models not well constructed to manage chronic illness effectively. *(Milani, et al, 2016)*

Shifting the Health System Paradigm

The empowered consumer living in digital societies



Why Digital Health Matters



Speed of Learning: faster and more inclusive

Value of Standards reduce variation

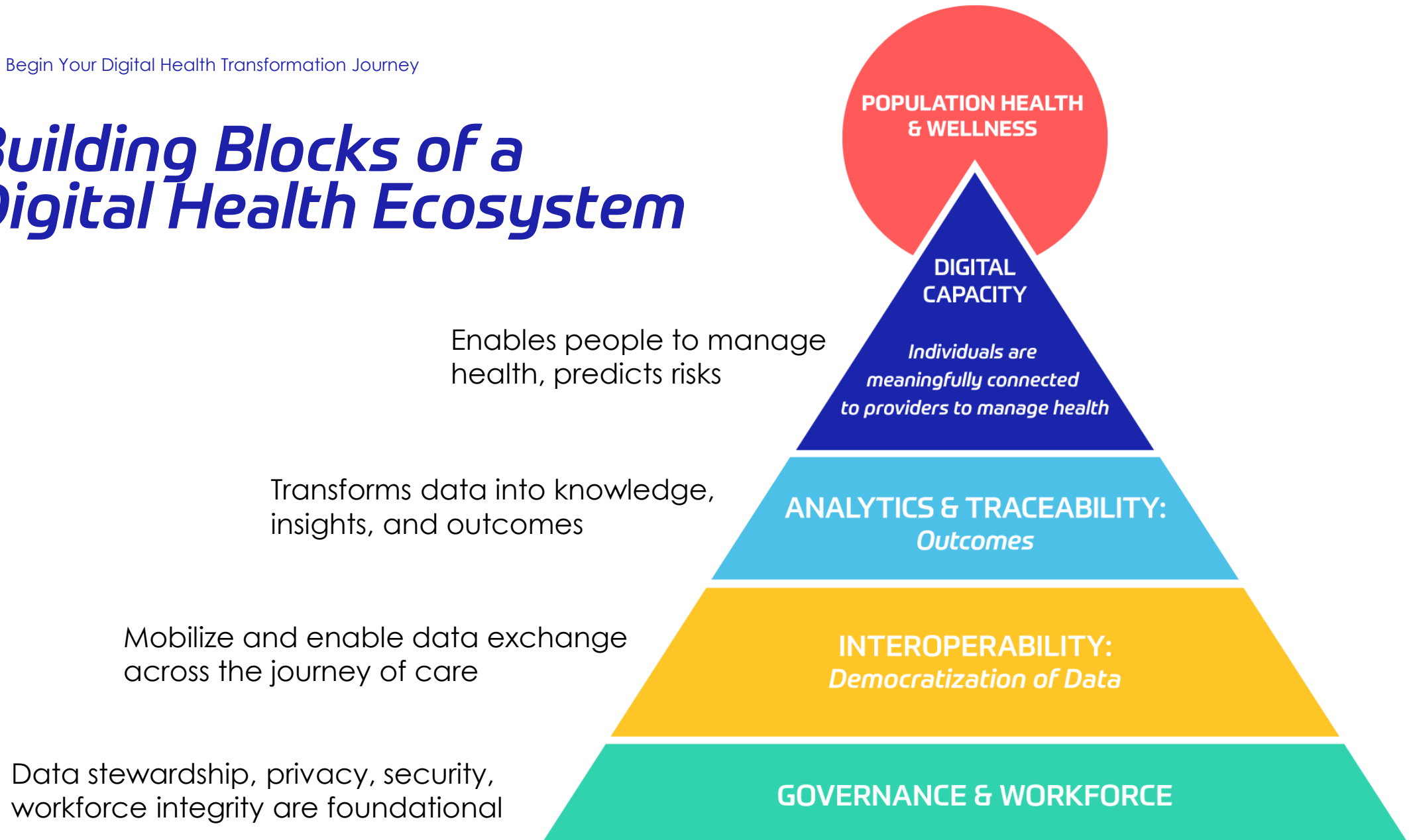
Protecting the Workforce: health, safety, quality of work life

Virtual Care: self management health and wellness

Preparedness: resilience,

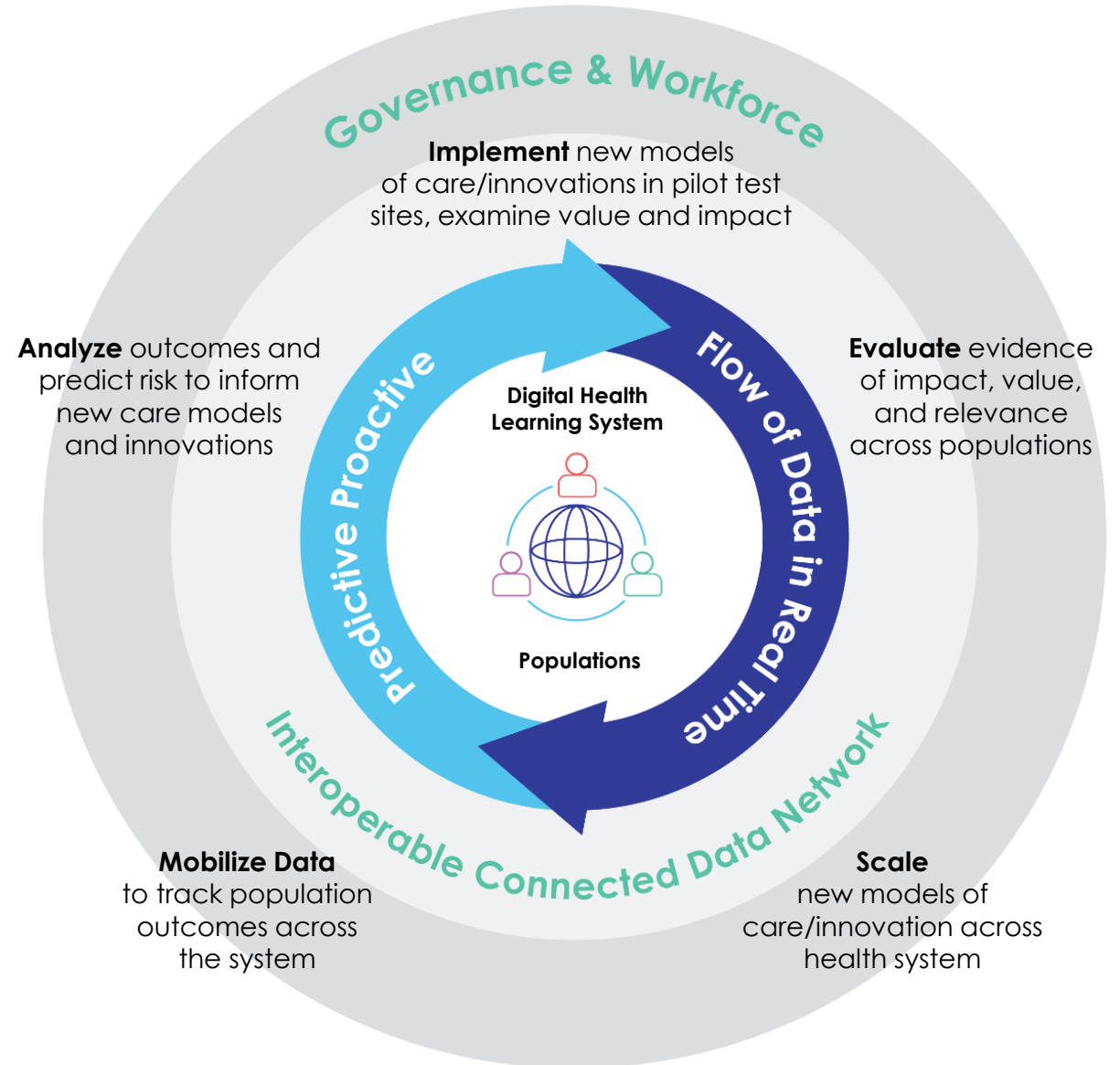
Overcome Inequality: transparency, connected communication that is clear, evidence based

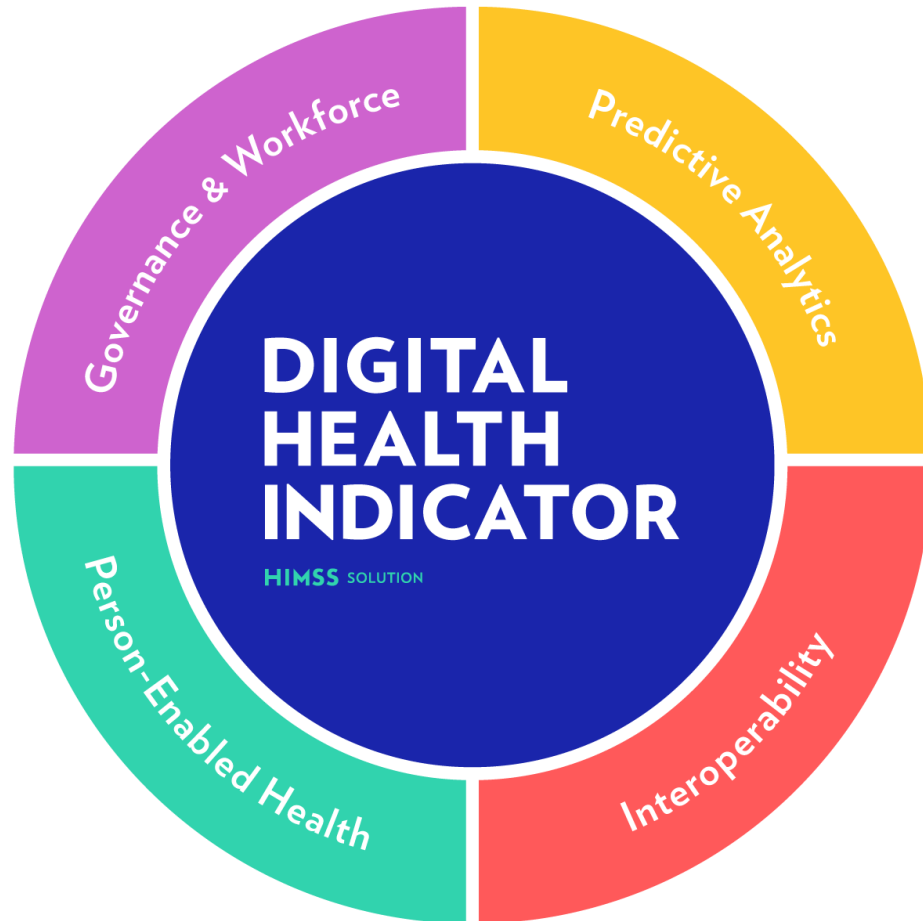
Building Blocks of a Digital Health Ecosystem



A Mature Digital Health Ecosystem

- Digital health systems prioritize population health outcomes, informed by robust analytics, tracked in real-time
- Outcomes data informs the design, implementation and scalability of new models of care innovations focused on health and wellness
- Interoperability makes it possible for data to flow across the system in real-time
- Governance supports a sustainable workforce and ensures system accountability





The Digital Health Indicator (DHI) **measures progress toward a digital health ecosystem.** An ecosystem that connects clinicians and provider teams with people, enabling them to manage their health and wellness using digital tools in a **secure and private environment** whenever and wherever care is needed. Operational and care delivery processes are **outcomes-driven**, informed by data and real-world evidence to achieve exceptional quality, safety, and **performance that is sustainable.**

Methodology

1. Critical analysis of current state of the evidence related to digital health:
 - analysis of digital health definitions
 - review of current measures, frameworks, and models
2. Design a digital health framework and measurement strategy
3. Pilot tested globally: Across 8 health systems, in 5 countries across 3 continents for validation, feedback, and fine tuning (U.S., Canada, Denmark, Singapore, Australia)

Understanding the Dimensions

Interoperability

FOUNDATIONAL: Exchange of data accessible across clinical settings

ORGANIZATIONAL: Use of governance tools such as policy, security and privacy

SEMANTIC: Use of analytics tools and reporting to streamline data access and management

STRUCTURAL: Data centralization, automation and integration for seamless data flow

Person-Enabled Health

PERSONALIZED: People set their health and wellness goals and choose the digital tools that enable self management connected to providers when needed

PROACTIVE: Predictive analytics mobilize patient-level outcomes data to track progress toward goals

POPULATION HEALTH: Predictive analytics enable mobilization of data to track population health outcomes to enable proactive health and wellness

Predictive Analytics

PERSONALIZED ANALYTICS: Connection between individuals and their provider teams for outcomes reporting

PREDICTIVE ANALYTICS: Tracking and tracing of outcomes across the journey of care identifying risk and strategy for care quality and safety

OPERATIONAL ANALYTICS: Data mobilized to track and improve health system performance

Governance & Workforce

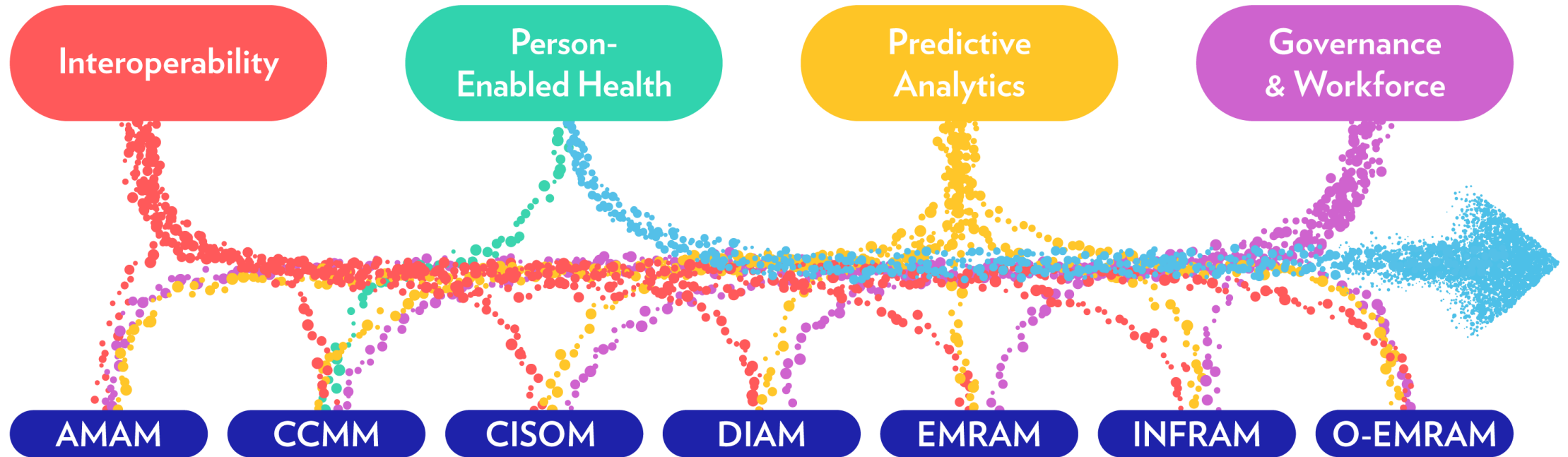
STEWARDSHIP: Leadership strategy informing oversight and accountability policies

TRANSPARENCY: Connectivity with people and populations provides indicators of quality, safety and outcomes

POLICY AND DECISION-MAKING: Alignment of processes and strategy that support and incentivize performance

WORKFORCE CAPACITY AND COMPETENCY: Transformation of care delivery by advancing digitally enabled care delivery, informed by outcomes data

Digital Health Indicator



DHI Aligns with Regulatory Requirements



The Interoperability and Patient Access final rule (CMS-9115-F)

- Focused on driving interoperability and patient access to health information by liberating patient data using CMS authority to regulate Medicare Advantage (MA), Medicaid, CHIP, and Qualified Health Plan (QHP) issuers on the Federally-Facilitated Exchanges (FFE).
- The CMS Interoperability and Patient Access final rule establishes policies that break down barriers in the nation's health system to enable better patient access to their health information, improve interoperability and unleash innovation, while reducing burden on patients, payers and providers.
- **Addresses 3 of the 4 DHI Dimensions: Interoperability, Person-Enabled Care, and Governance & Workforce**

Digital Health Indicator Virtual Assessment



HIMSS

Your Digital Health Indicator Virtual Assessment Is Ready



DIGITAL HEALTH INDICATOR
HIMSS solution

Hello,

Thank you for your interest in the HIMSS Digital Health Indicator (DHI) Virtual Assessment.

The DHI measures progress toward a digital health ecosystem. An ecosystem that connects clinicians and provider teams with people, enabling them to manage their health and wellness using digital tools in a secure and private environment whenever and wherever care is needed. Operational and care delivery processes are outcomes-driven, informed by data and real-world evidence to achieve exceptional quality, safety and performance that is sustainable.

We are looking forward to guiding you through the DHI process.

A link to your DHI Virtual Assessment can be found at the bottom of this email.

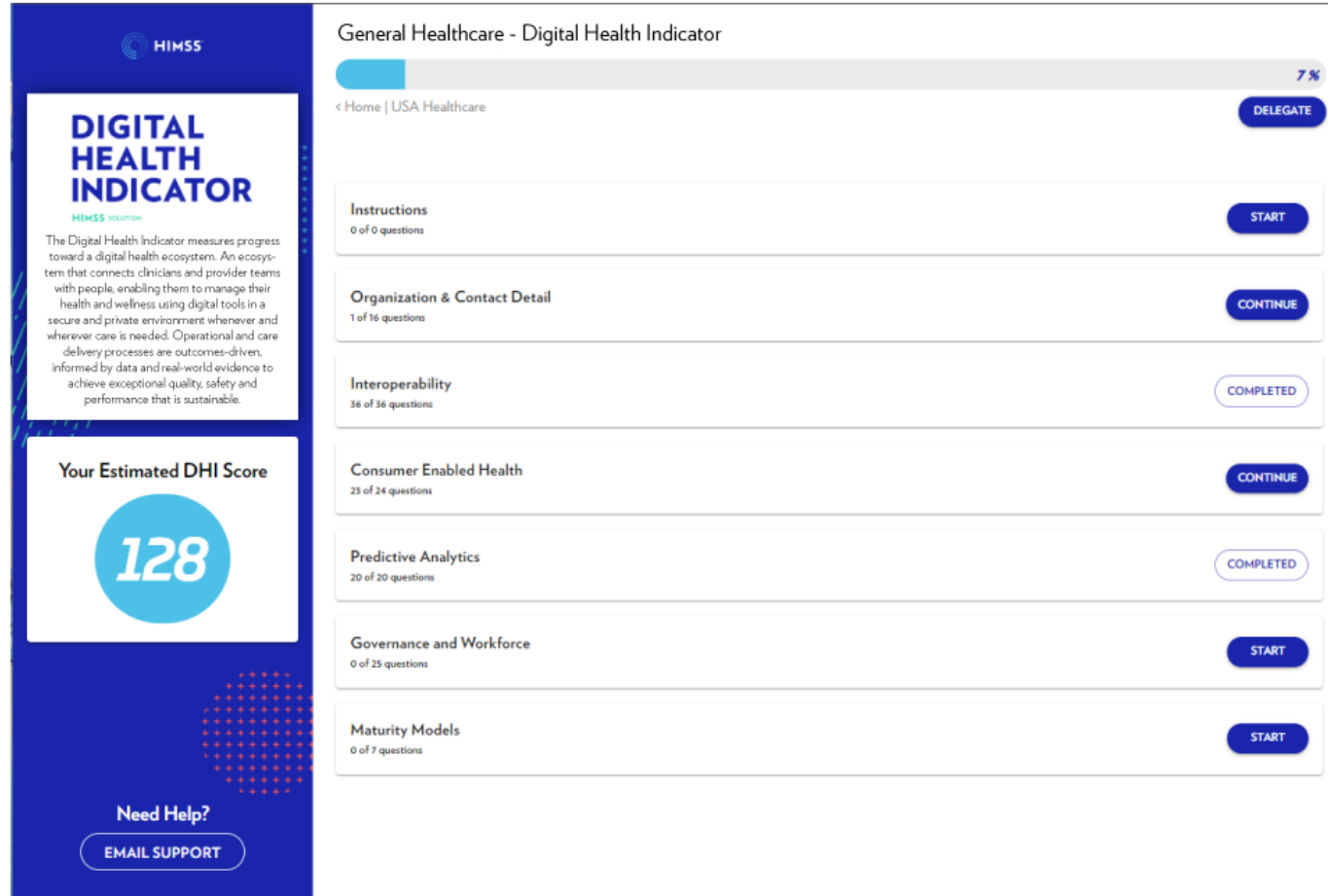
Please take your time filling this out, there is no deadline for completion. We want to make sure your responses are as precise as possible, so please [contact us](#) with any clarifying questions we can answer for you.

When prompted to enter your email address, please enter the email address the DHI Virtual Assessment link was sent to. Failure to do so will result in the assessment not being generated.

We will contact you within five business days after you have completed the assessment to set up time to review your DHI Virtual Assessment Report. We look forward to working with you.

Thank you again,
The HIMSS Team

[Begin DHI Virtual Assessment](#)



HIMSS

DIGITAL HEALTH INDICATOR
HIMSS solution

The Digital Health Indicator measures progress toward a digital health ecosystem. An ecosystem that connects clinicians and provider teams with people, enabling them to manage their health and wellness using digital tools in a secure and private environment whenever and wherever care is needed. Operational and care delivery processes are outcomes-driven, informed by data and real-world evidence to achieve exceptional quality, safety and performance that is sustainable.

Your Estimated DHI Score

128

Need Help?
[EMAIL SUPPORT](#)

General Healthcare - Digital Health Indicator

7%

< Home | USA Healthcare

[DELEGATE](#)

Instructions
0 of 0 questions [START](#)

Organization & Contact Detail
1 of 16 questions [CONTINUE](#)

Interoperability
36 of 36 questions [COMPLETED](#)

Consumer Enabled Health
23 of 24 questions [CONTINUE](#)

Predictive Analytics
20 of 20 questions [COMPLETED](#)

Governance and Workforce
0 of 25 questions [START](#)

Maturity Models
0 of 7 questions [START](#)

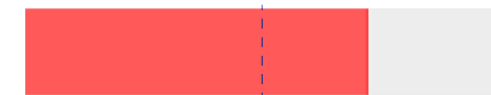
DHI: Virtual Assessment for Example Health System

320

OVERALL RECOMMENDATIONS

- How data flows across organizations, clinician teams and people managing their health to inform decisions and ensure meaningful connectivity using mobile tools.
- Identify capacity and use of prescriptive analytic tools to support proactive identification of risk and enable alerts to inform prevention efforts.
- Policy frameworks that support transformation of digitally enabled models of care, workforce capacity to deliver digitally enabled care, transparency in publishing health system outcomes.
- Use of personalized approaches to care, capacity for personal reported health outcomes and self-management of health, use of predictive tools to identify population health risk and proactive interventions.
- DHI roadmap services to advance digital health capacity

Interoperability



Strong

Predictive Analytics



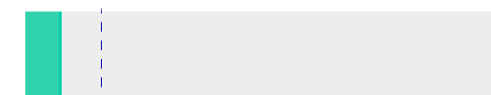
Medium

Governance & Workforce



Strong

Person-Enabled Health



Focus Area

Questions?