2022 State Medicaid Health IT Plan (SMHP) Update:

Creating a Digital Health Roadmap for the District of Columbia

Mission Statement

To improve health outcomes by providing access to comprehensive, cost-effective and quality healthcare services for the residents of the District of Columbia.

Acknowledgements

The District of Columbia (DC) *2022 State Medicaid Health IT Plan (SMHP) Update* was developed by the DC Department of Health Care Finance (DHCF), through the Health Care Reform and Innovation Administration (HCRIA) and in collaboration with the DC Health Information Exchange (HIE) Policy Board and District agency partners, including the DC Department of Health (DC Health) and the DC Department of Behavioral Health.

DHCF acknowledges the tremendous support and feedback from these stakeholders in the development of the SMHP. Between June 8 and August 19, 2021, HCRIA and its consultants conducted 41 stakeholder interviews and 11 focus groups. These participants included Medicaid beneficiaries, District residents, representatives from hospitals and health systems, ambulatory providers, behavioral health providers, long-term care supports and service providers, community service organizations, managed care organizations, private payers, and DC government agencies. The information gathered as part of these stakeholder outreach efforts was vital to the SMHP's development.

While the *2022 SMHP Update* serves as the final update of the District's SMHP required by CMS via the HITECH Act, DHCF and stakeholders recognize that the work of building digital health infrastructure to support the Medicaid program and the District is not finished. The SMHP is a *living document* and will be updated regularly to address ongoing needs and opportunities and refine the District's digital health strategy in partnership with health system stakeholders.

DHCF looks forward to continued collaboration with these stakeholders, and others, as the goal of the SMHP is realized: *to design and implement an electronic network that provides actionable health-related information whenever and where it is needed to support patient-centered care and improve health outcomes.*

DHCF was supported in this work by John Snow, Inc. and the DC Primary Care Association.

# Table of Contents

Executive Summary

Executive Summary

The District of Columbia (DC or the District) has come a long way since the passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009. The District has leveraged more than $20 million in HITECH funding to support a range of programs aimed at increasing access and use of health information technology and health information exchange (HIE). Electronic health record (EHR) adoption and HIE capacity in the District has grown significantly over the past three years with the creation of the DC HIE and increase in digitally connected providers.

During the mid-2010s electronic health record (EHR) systems proliferated with federal support for EHR adoption by hospital and primary care providers. Overall, more than thirty (30) distinct EHR systems were implemented across the District's health system within the District's sixty-eight square miles resulting in a fragmented, siloed healthcare system.

THE DISTRICT HAS SIGNIFICANT VARIATION IN HEALTH IT SYSTEMS
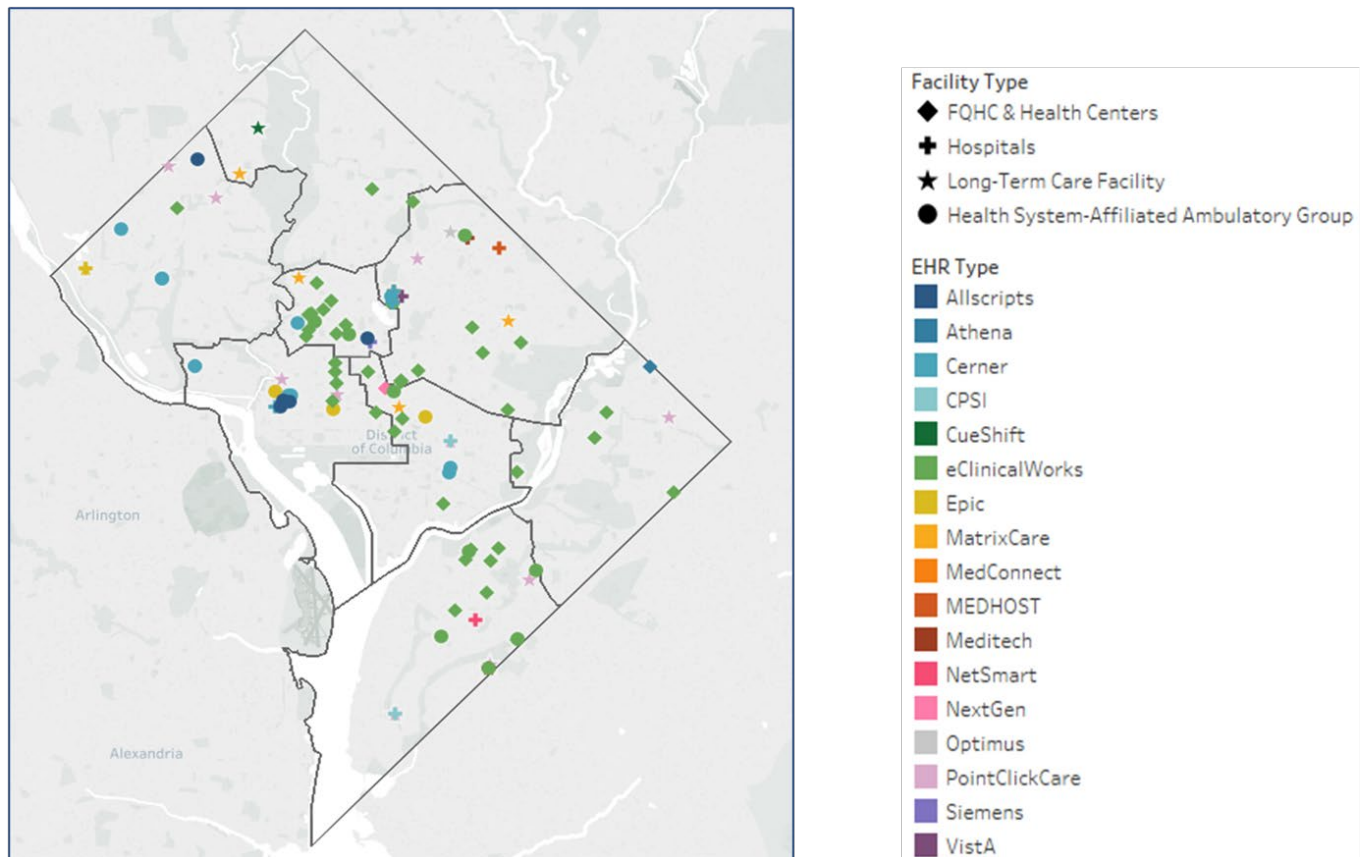
Given the District's small geographic footprint and the extent to which District residents and Medicaid beneficiaries are known to access health services in bordering states, including Maryland and Virginia, a true picture of whole-person care requires a regional view. As a result, the District has embraced a *health data utility* model for HIE.

A *health data utility* is a public good enabled through cross-sector partnerships that: 1) provide shared services; and 2) foster a culture of shared responsibility for ensuring the availability and quality of actionable health information. In this model, the primary value of the tools and services is the extent to which each can draw data from across the network to support user stories – real world examples – that demonstrate ways health information exchange is essential to high-quality, person-centered care.

The core concept embedded in the health data utility model is the idea that a utility makes it possible for health information to flow across diverse EHR systems. This process supports regional *interoperability* and is key to integrating care because it ensures care partners: 1) are digitally connected to each other; 2) can view the same information regarding the individuals that they collectively serve; and 3) can use the same standard of communication to address symptoms and therapies. This community-governed approach to the DC HIE is a practical, privacy-preserving strategy that ensures the flow of health-related information *whenever and wherever it is needed to support patient-centered care and improve health outcomes.*

The 2022 State Medicaid Health IT Plan (SMHP) Update Creates a Digital Health Roadmap for the District of Columbia

The District of Columbia Department of Health Care Finance (DHCF) is the District's State Medicaid Agency (SMA) and serves as its State Health IT Coordinator.

The SMHP is a Centers for Medicare and Medicaid Services (CMS) requirement for all SMAs. The District articulated the strategy and planned activities to advance health IT and HIE in its 2018-2023 State Medicaid Health Information Technology Plan. The purpose of this update is to:

» Describe how the health IT and HIE landscape has changed since the original SMHP environmental scan;

» Assess the impact of HITECH and other DHCF efforts over the past three years; and

» Update DHCF's plan for the future of digital health initiatives.

DHCF engaged the DC Primary Care Association (DCPCA) and a private healthcare consulting firm, John Snow, Inc. (JSI), to conduct the analysis using a mixed-methods approach. The team collected and analyzed both qualitative and quantitative data. Between June 8, 2021 and August 19, 2021, 41 interviews and 11 focus groups were conducted with HIT/HIE stakeholders

in the District via virtual meeting platforms. JSI also gathered and analyzed quantitative data on HIE utilization patterns provided by the Chesapeake Regional Information System for our Patients, the District's formally Designated HIE.

While this report, the *2022 SMHP Update*, serves as the final update of the District's SMHP required by CMS via the HITECH Act, DHCF and stakeholders recognize that the work of building digital infrastructure to support the Medicaid program and the District is not finished. As health IT investments transition to become "modules" in the overall CMS Medicaid Enterprise System (MES), community members have expressed interest in continuing ongoing biennial updates on the District's digital health strategy. The report explicitly addresses opportunities for ongoing reporting, accountability, and governance in later sections of the report.

Moving forward, the District anticipates expanding the program's focus and name from "health IT" to "digital health." Doing so signals the relevance and utility of a breadth of digital health tools including telehealth, mobile health (mHealth), and other emerging modalities of care that support the Medicaid program's commitment to patient-centered, whole-person care.

The District's Digital Health Model to Support Patient-Centered Care

Implementing the DC HIE Concurrent with the District's Health System Transformation

Important changes have taken place in the District of Columbia's health system over the past several years that have shaped the District's investments and progress implementing health IT and digital health. While the District continues to have one of the highest health insurance coverage rates in the nation – with DHCF's programs alone providing coverage to four in ten District residents, including 70 percent of children[1] – health challenges remain.

These include the District's high use of emergency services, rather than preventative services, and disparities in health – especially for Black residents who face stark disparities in maternal and infant health, chronic and complex disease, behavioral health conditions, and infectious disease. The District's 2018 Health Equity Report details the direct link between healthcare disparities and social determinants of health, including housing, nutrition, and transportation – an impact that has only been exacerbated by the COVID-19 pandemic.

Seeking to address these challenges, critical health system events and initiatives have shaped DHCF's approach to digital health infrastructure over the past few years.

- » Mayor's Commission for Health Care System Transformation (2019)
- » Expansion of the managed care program for Medicaid beneficiaries (2020)
- » CMS approval of the District's 1115 Waiver for the Medicaid Behavioral Health Transformation Demonstration (2020)
- » Planned Districtwide transformation of behavioral health services, including substantial investments in funding for new services and technical assistance to support evidence-based practice transformation (2020)
- » Development of a new GW Health Hospital and Ambulatory Pavilion at St. Elizabeth's East to be operated and maintained by Universal Health Services (2020)

Evaluating the Network: The DC HIE in 2022

Following the publication of the 2018 SMHP, DHCF prioritized the following activities in the 2018 Health IT and HIE Roadmap, to ensure the DC HIE's sustainability and utility:

1. Finalizing the DC HIE Rule, formally establishing the DC HIE and implementing robust governance policies to regulate DC HIE partners

2. Expanding the DC HIE network of participating providers

3. Enhancing the design, development, and implementation of DC HIE core capabilities (i.e. technical services) for District providers

On July 19, 2019, the publication of the District's "HIE Rule" (Chapter 87, District of Columbia Health Information Exchange, of Title 29, DCMR) formally established the DC HIE as a regulated and interoperable system of registered and designated HIE entities in the District that follow best practices on the transmission of health information according to nationally recognized standards. The "HIE Rule" formally authorizes DHCF to oversee and administer the DC HIE.

Per the Rule, there are two ways HIEs can participate in the DC HIE, as either a District *Registered* HIE Entity or the District's *Designated* HIE Entity. There are currently two participating DC HIE entities, the Chesapeake Regional Information System for our Patients (CRISP) and Capital Partners in Care (CPC).

THE **DC HIE** REGULATED BY **DHCF**
Department of Health Care Finance

The DC HIE Rule (*Chapter 87 District of Columbia Health Information Exchange of Title 29 (Public Welfare) of the District of Columbia Municipal Regulations*) formalizes partnerships to facilitate more cooperation between DHCF and HIE entities.

DISTRICT REGISTERED HIE ENTITIES

CRISP   **CPC HIE**
CAPITAL PARTNERS IN CARE HEALTH INFORMATION EXCHANGE

- Is a HIE entity that **meets or exceeds privacy, security, and access requirements** for health information exchange.
- Receives **key opportunities** to engage in discussions with other DC HIE entities.
- The District Registered HIE Entity status is awarded for a term of **three (3) years.**

The DC HIE Registration Application is accepted on a rolling basis

DISTRICT DESIGNATED HIE ENTITY

CRISP

- Is a District Registered HIE Entity that **meets or exceeds the consumer education and auditing requirements** in the DC HIE Rule.
- Is a key partner to DHCF, the District Designated HIE Entity **supports the ongoing maintenance and operation of the DC HIE infrastructure or services.**
- The District Designated HIE Entity status is awarded for a term of **five (5) years.**

The DC HIE Designation Application closed September 18, 2019

In addition to regulating the DC HIE, the DHCF actively works with key stakeholders via inter-related governance bodies: the DC HIE Policy Board; CRISP DC's Board and committees; CPC-HIE's Board; and inter-District efforts to evaluate and develop policy guidance on health information exchange in the District.

As of November 2021, the DC HIE demonstrated substantial progress to expand the network and reach as many participating providers as possible:

12,000+ Approved Users

of DC HIE – **a significant increase of 49%** from November 2018

600+ Practice Sites

now have **access to admit**, **discharge** and **transfer** (ADT) alerts via the **CRISP DC** encounter notification system (ENS).

~300 Practice Sites

now **share ADT information, resulting in a substantial increase in bi-directional exchange** compared to 2018.

TODAY, THE VAST MAJORITY OF PROVIDERS AND HEALTH SYSTEMS ARE CONNECTED TO DC HIE INCLUDING:

8
Acute Care
Hospitals

8
Federally Qualified
Health Centers (all)

20
Home Health
Providers

36
Long-Term Care
Facilities, including
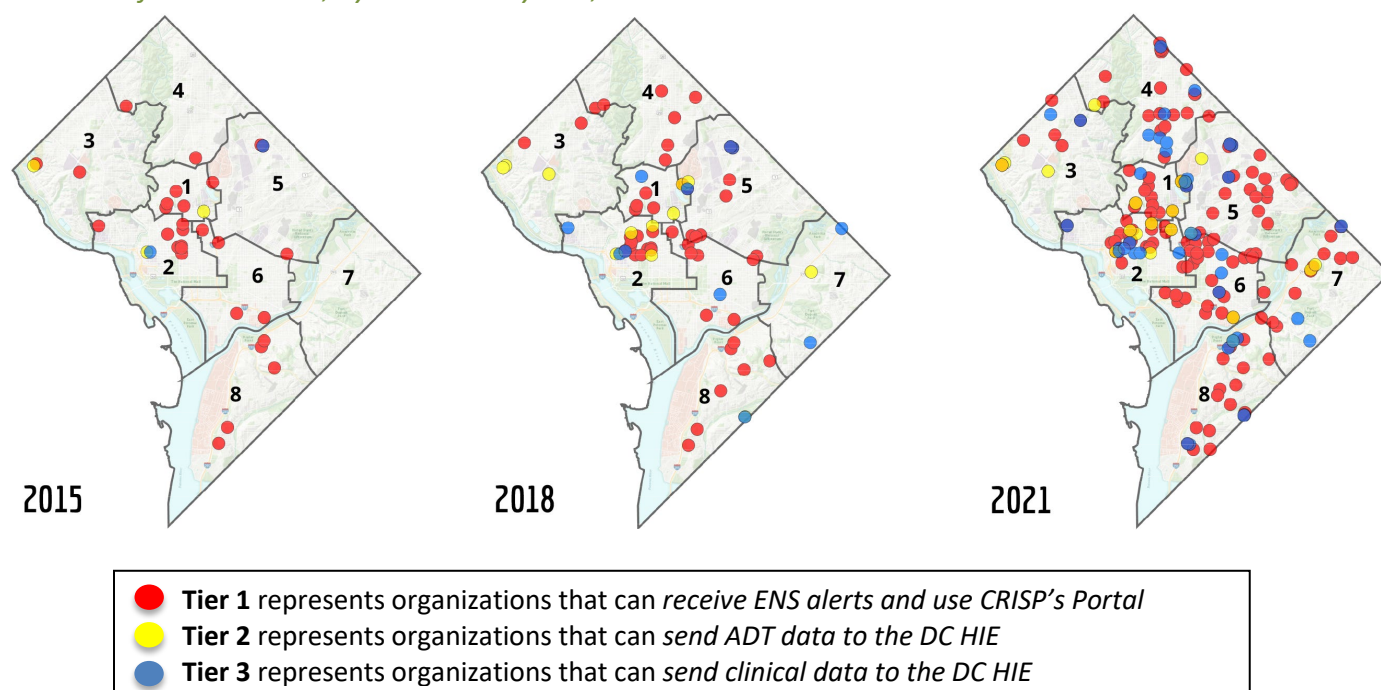15 Nursing Facilities

30
Behavioral
Health Sites

There are three tiers of connectivity to reflect growth of the network over time and increasing sophistication in use of the DC HIE:

» Tier 1 represents organizations that can *receive ADT* alerts via the Encounter Notification Service (ENS) within the CRISP DC Portal;

» Tier 2 represents organizations that can *send ADT* data to the DC HIE; and

» Tier 3 represents organizations that can *send clinical data* to the DC HIE.

Compared to 2015 and 2018, the District has substantially expanded data exchange across all eight wards and tiers of connectivity.

Location of DC HIE Users, by Connectivity Tier, 2015-2021

Tier 1 represents organizations that can *receive ENS alerts and use CRISP's Portal*
Tier 2 represents organizations that can *send ADT data to the DC HIE*
Tier 3 represents organizations that can *send clinical data to the DC HIE*

Another important development is the degree to which other District health agencies are now engaging with the DC HIE via CRISP DC, including the DC Department of Health (DC Health), Department of Energy and Environment (DOEE), Fire and Emergency Medical Services (FEMS), Department of Corrections (DOC), DC Public Schools (DCPS), Office of the Chief Medical Examiner (OCME) and Department of Behavioral Health (DBH) have signed participation agreements in place that enable access and use of DC HIE tools. *Collaborative Case Studies* featured in *Section 3* details a variety of approaches District agency partners have used to work with the DC HIE since 2018.
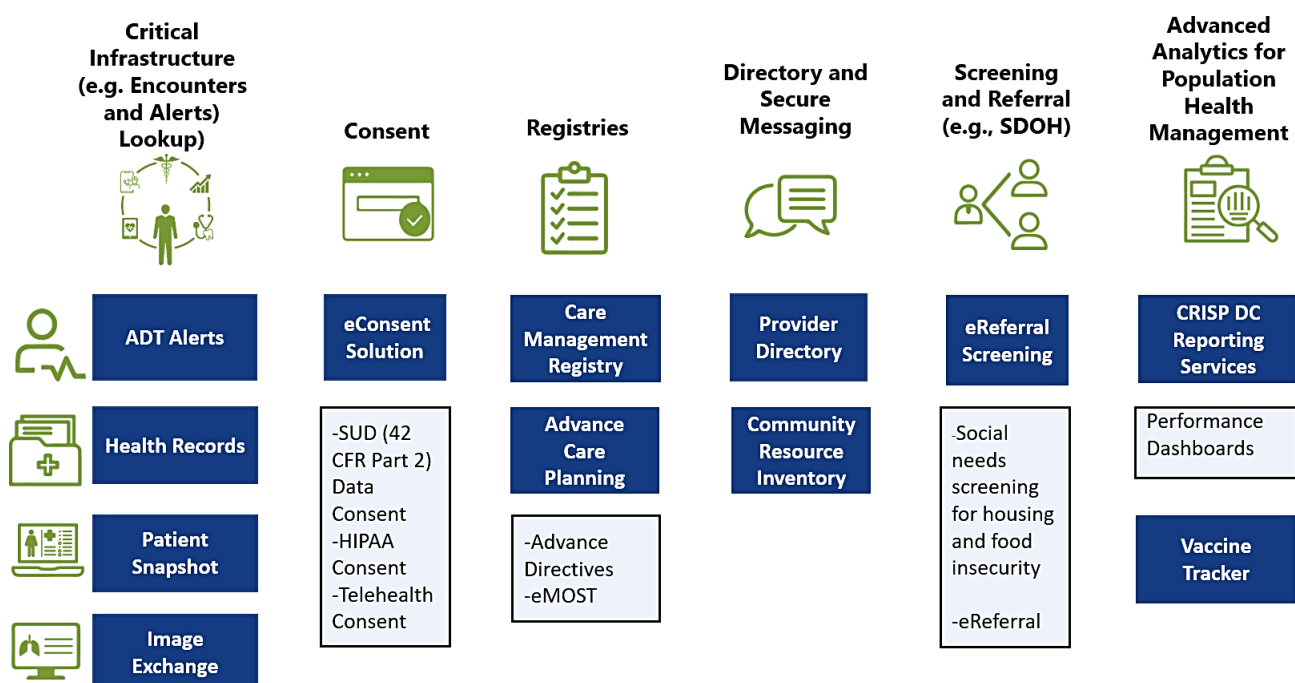
Evaluating DC HIE Services: DC HIE Core Capabilities for our Providers

In the 2018 SMHP, DHCF and the HIE Policy Board developed four priority areas – transitions of care for individuals, social determinants of health, population health management, and public health – to guide the design development and implementation of health IT and HIE. The priority areas represent key functions of the District health IT and HIE infrastructure that had stakeholders identified as essential for delivery of care to residents and patients.

The technological building blocks that operationalize the priority areas were further developed and implemented as *core capabilities for District providers*.

The DC HIE is a Health Data Utility with Six (6) Reliable Core Capabilities for Providers

Critical Infrastructure (e.g. Encounters and Alerts) Lookup)

Consent

Registries

Directory and Secure Messaging

Screening and Referral (e.g., SDOH)

Advanced Analytics for Population Health Management

ADT Alerts	eConsent Solution	Care Management Registry	Provider Directory	eReferral Screening	CRISP DC Reporting Services
Health Records	-SUD (42 CFR Part 2) Data Consent -HIPAA Consent -Telehealth Consent	Advance Care Planning	Community Resource Inventory	-Social needs screening for housing and food insecurity -eReferral	Performance Dashboards
Patient Snapshot		-Advance Directives -eMOST			Vaccine Tracker
Image Exchange					

The DC HIE's critical infrastructure tools are currently the most used core capabilities. These tools – ADT Alerts, Health Records, Patient Care Snapshot, and Image Exchange – have been available to providers the longest, since 2014 (for ADTs) and 2019. CRISP DC has also made it easier to fully integrate CRISP tools into providers' EMRs, which is known to greatly improve adoption. Furthermore, health records and image exchange are conceptually familiar to providers – these are essentially electronic versions of documentation traditionally received via fax, but are now delivered through a centralized mechanism, the DC HIE.

Other newly developed tools, such as screening and referrals for social determinants of health and advanced analytics for population health management are newer concepts in their first or second phases of release and will require changes in clinical workflow. Furthermore, upcoming releases of eConsent and advance care planning will increase patient engagement with the DC HIE infrastructure. These four newer HIE capabilities will require additional education, training, and technical support to ensure they are most effectively used to promote patient-centered care.

Together, these six core capabilities make up the health data utility model, which is highly modular and scalable. The shared services infrastructure implemented by CRISP, with approval from the CRISP DC Board, also creates opportunities for re-use of technology among

participating states. For example, Maryland's adoption of the Patient Care Snapshot developed by DC.

Measuring Progress is Critical to Sustaining Health Information Exchange in the District

DHCF developed a framework to monitor and evaluate health IT and HIE connectivity. The Framework demonstrates a progressive spectrum of sophistication for providers' use of health IT and HIE and will be discussed in greater length in *Section 4: Roadmap Evaluation.*

Health IT and HIE Evaluation Framework

Access	Exchange	Use	Improve
Are you *capturing or accessing* data electronically?	Are you *sending and receiving* ehealth data?	Are you *using* the data?	Are you using data to *improve* health?

Using this framework, the District demonstrated that it has witnessed an accelerated growth in HIE connectivity and use of technology since 2018. As detailed in *Section 4* and *Appendices H and I*, DHCF and its partners have made demonstrable progress in improving digital access and exchange of data in the District, with incremental improvements in the use and health improvement goals.

Notably, digital health investments were critical to supporting the District's response to the COVID-19 public health crisis. Telehealth, HIE, and a well-established network enabled providers to deliver care in a timely manner using new modalities of service.

Certainly, challenges remain, and some health system stakeholder needs require additional focus. Stakeholder interview and focus groups participants specifically indicated the need for greater standardization and timeliness of data flowing *into* the DC HIE from participating providers. Likewise, more education, training, and technical assistance to promote the use of the DC HIE, including resources to support the development of practice-level guidelines, protocols, and tools is requested. Lastly, there is a need for greater financial support from diverse sources to ensure that providers, particularly those who are small and/or under resourced, have the tools and knowledge to participate in the DC HIE.

Recommendations

In the next phase of its work, the District must continue to support and incentivize use of digital health tools in a more consistent and sophisticated way. As DHCF works with sister agencies and partner organizations to plan future investments and priorities for digital health, the following recommendations are provided for consideration. These recommendations were largely drawn from the interviews and focus groups that were conducted as part of the stakeholder engagement effort for this project, as well as a synthesis of strategies to address needs and challenges identified in the Roadmap evaluation.

The following seven recommendations are provided to support DHCF's goal of providing whole-person, integrated care:

1. Develop and Publish a Bi-Annual Evaluation and Strategic Plan, including Metrics to Effectively Assess Digital Health Impact
2. Broaden and Diversify Investments in the DC HIE through Interagency Collaboration to Address Technology Gaps, Build District-wide Digital Health Capacity, and Support the Long-Term Sustainability of the DC HIE
3. Invest in District-wide Population Health Analytics, including Access to Priority Data
4. Engage Community-Based Organizations and Facilitate Partnerships with Clinical Providers to Expand Access and Use of Social Needs Information in the DC HIE
5. Enhance the DC HIE Consumer Experience, for both Providers and Patients
6. Improve Education and Communication to Increase Awareness of the DC HIE
7. Develop and Promote Payment Models and Provider Incentives to Drive Adoption and Use of the DC HIE

A discussion of these recommendations is provided in *Section 5* of the full report. By developing a digital health infrastructure using the proposed health data utility model described in the *2022 SMHP Update*, DHCF has proposed a robust, future-oriented strategy to ensure District resident's health data is available *whenever and wherever it is needed to support patient-centered care and improve health outcomes.*

Section 1

Introduction

Background and Purpose

Electronic health record (EHR) adoption and health information exchange (HIE) capacity in the District of Columbia (DC or the District) has increased significantly over the past three years, with the creation of the DC HIE and substantial increase in digitally connected providers. The District has come a long way since the passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009, leveraging more than $20 million in HITECH funding to support a range of programs aimed at increasing the District providers' health information technology and health information exchange (HIE) capacity across the District.

What are Health IT and Health Information Exchange?

Health Information Technology (Health IT): The programs, services, technologies and concepts that store, share, and analyze health information in order to improve care.[4]

Health Information Exchange (HIE): The movement of health information electronically across multiple organizations.[5]

During the mid-2010s, electronic health record (EHR) systems proliferated with this federal support for EHR adoption by hospital and primary care providers. Overall, more than thirty (30) distinct EHR systems (see *Figure 1*) were implemented across the District's health system within the District's sixty-four square miles.

Figure 1: The District's Significant Variation in Health IT Systems

Given the District's small geographic footprint and the extent to which District residents and Medicaid beneficiaries are known to access health services in bordering states, including Maryland and Virginia, a true picture of whole-person care requires a regional view. As a result, the District has embraced a *health data utility* model for HIE.

A *health data utility* is a public good enabled through cross-sector partnerships that: 1) provide shared services; and 2) foster a culture of shared responsibility for ensuring the availability and quality of actional information. In this model, the primary value of the tools and resources is the extent to which each can draw data from across the network to support user stories – real world examples – that demonstrate ways health information exchange is essential to high-quality, person-centered care.

The core concept embedded in the health data utility model is the idea that a utility makes it possible for health information to flow across diverse EHR systems. This process supports regional *interoperability* and is key to integrating care because it ensures that care partners: 1) are digitally connected to each other; 2) can view the same information regarding the individuals that they collectively serve; and 3) can use the same standard of communication to address symptoms and therapies. This community-governed approach to the DC HIE is a practical, privacy-preserving strategy that ensures the flow of health-related information *whenever and wherever it is needed to support patient-centered care and improve health outcomes.* The *health data utility* model for the DC HIE is described further in *Section 3.*

The District of Columbia Department of Health Care Finance (DHCF) is the District's State Medicaid Agency (SMA) and serves as its State Health IT Coordinator. In its role as SMA, DHCF works with the federal Centers for Medicare and Medicaid Services (CMS), its DC public sector sister agencies, and hundreds of service providers across the District to ensure that those eligible for Medicaid services have access to comprehensive, cost-effective, and high-quality health care services. As the State Health IT Coordinator, DHCF is responsible for:

» Administering the Medicaid Electronic Health Record Incentive Program (MEIP);
» Facilitating funding to support health IT projects that directly support Medicaid providers while building infrastructure to serve all District residents;
» Developing health IT strategies for the District that are responsive to the complex health care needs of a diverse population;
» Coordinating ongoing, District-wide public input through the DC HIE Policy Board and stakeholder outreach activities; and
» Regulating the District's Health Information Exchange.

As required by CMS, the District articulated the strategy and planned activities to advance HIE in its 2018 State Medicaid Health Information Technology Plan (SMHP). The District anticipates

expanding the program's focus and name from "Health IT" to a broader focus on "Digital Health." Doing so signals the relevance and utility of a breadth of digital health tools including telehealth and other emerging modalities of care that support the Medicaid program's focus on patient-directed, whole-person care.

What is Digital Health?

The U.S. Food and Drug Administration defines Digital Health in a broad scope of categories that include mobile health (mHealth), health information technology (Health IT), wearable devices, telehealth and telemedicine, and personalized medicine.

Digital health technologies can use computing platforms, connectivity, software, and sensors for healthcare and related uses. These technologies span a wide range of uses, from applications in general wellness to applications as a medical device. They include technologies intended for use as a medical product, in a medical product, as companion diagnostics, or as an adjunct to other medical products (devices, drugs, and biologics). They may also be used to develop or study medical products. Two major components of digital technologies include telehealth and remote patient monitoring.

For Providers and Payers, the evolution towards Digital Health means… A reduction in inefficiencies and costs of care, improvement in access and quality of care, and opportunity to make healthcare more personalized for patients.

For Patients/Healthcare Consumers the evolution towards Digital Health means…. Better management, tracking, and engagement of their health and wellness in coordination with their care team.

The 2021 update to the District's SMHP, reflects the intention for the SMHP to be a "living document" subject to biennial updates. This report:

- » Documents changes in capabilities and utilization of current DC HIE services;
- » Assesses stakeholder feedback to evaluate the District's progress against the roadmap goals expressed in 2018; and
- » Outlines future post-HITECH directions and recommendations to inform the District's digital health strategy.

To examine how Health IT/HIE is used in the District, the *2022 SMHP Update* gathers both qualitative and quantitative data to review who is participating in the DC HIE, as well as the use of HIE tools and data exchange among District partners. In addition, contextual factors that have promoted or hindered the success of the DC HIE are addressed, including the current state

of health and healthcare in the District given the COVID-19 pandemic, as well as health priorities set by the District.

While this report serves as the final update of the District's SMHP required by the HITECH Act, DHCF and stakeholders recognize that the work of building digital infrastructure to support the Medicaid program and the District is not done. As Health IT digital health investments transition to become "modules" in the overall Medicaid Enterprise System framework, community members have expressed interest in continuing ongoing biennial updates on the District's digital health strategy. The report explicitly addresses opportunities for ongoing reporting, accountability, and governance in later sections of the report.

DIGITAL HEALTH DEFINITIONS

Telehealth – The delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies.[2]

Mobile health (mHealth) – The use of mobile and wireless devices (cell phones, tablets, etc.) to improve health outcomes, health care services, and health research.

Wearable devices – Wearable technologies that enable the continuous monitoring of human physical activities and behaviors, as well as physiological and biochemical parameters during daily life. The most commonly measured data include vital signs such as heart rate, blood pressure, and body temperature, as well as blood oxygen saturation, posture, and physical activities through the use of electrocardiogram (ECG), ballistocardiogram (BCG) and other devices. Some wearable technology applications are designed for prevention of diseases and maintenance of health, such as weight control and physical activity monitoring. Wearable devices are also used for patient management and disease management.

Remote Patient Monitoring (RPM) – The collection, storage, and evaluation of health information through live monitoring via devices that transmit information from the patient's location to the provider.[3]

Consumer-Facing Digital Health Innovation

In the era of the HITECH Act, efforts to improve connectivity to and utilization of digital health tools were largely focused on healthcare providers. In recent years, the scope of this work has expanded to engage patients as healthcare consumers, the importance of which was reinforced by the promulgation of the *CMS Interoperability and Patient Access Rule* on May 1, 2020, which drives interoperability and patient access to health information by using CMS authority to regulate certain health plans.

- **Patient Access API (Third-Party Applications):** The Interoperability and Patient Access Rule, beginning July 1, 2021, required all impacted payers to implement a secure, standards-based (HL7 FHIR Release 4.0.1) Patient Access application programming interface (API). This will allow patients to easily access their claims and encounter information, including cost, as well as a defined subset of their clinical information through third-party applications of their choice.

DHCF is working closely to align local needs and federal strategies to support, improve, and empower patients to take better control of their healthcare. Some examples of current DHCF consumer-facing digital health innovation efforts are outlined below.

- **eConsent Management:** Refers to using electronic systems and processes that obtain consent from a consumer/patient to manage the exchange of their personal health information. The eConsent processes may guide HIE across multiple electronic media, including text, graphics, audio, video, passive and interactive web sites, biological recognition devices, and card readers.

- **Electronic Advance Care Planning:** A process that aims to inform and facilitate electronic medical decision-making that reflects patients' preferences in the event that patients cannot communicate their wishes. These preferences are often captured in an advance directive or other types of forms (e.g., MOST, MOLST, POST, POLST), a legal document that goes into effect only if the individual is incapacitated and unable to speak for themselves.

Approach and Methods

To conduct this work, DHCF engaged the DC Primary Care Association (DCPCA) and a private healthcare consulting firm, John Snow, Inc. (JSI).

To support the SMHP Update, DHCF with JSI's support applied a comprehensive, mixed-methods approach. The team collected and analyzed both qualitative and quantitative data. Between June 8 and August 19, 2021, 41 interviews and 11 focus groups were conducted with Health IT/HIE stakeholders in the District via virtual meeting platforms. With respect to its

quantitative efforts, JSI gathered and analyzed data provided by the Chesapeake Regional Information System for our Patients (CRISP), the District's formally Designated HIE.

What's Included in the District's 2022 SMHP Update?

This report is divided into five sections that summarize findings, identify opportunities, and articulate recommendations derived from this SMHP Update effort:

» **Section 1: Introduction** provides a high-level overview of the purpose, approach, and structure of the *2022 SMHP Update*.

» **Section 2: Opportunities to Improve Healthcare in the District** provides background and context on the current state of health and healthcare in the District.

» **Section 3: What does the DC HIE Look Like Today?** summarizes the current state of the DC HIE, including the development of the network of connected providers, new services, and DC HIE governance.

» **Section 4: Roadmap Evaluations** discusses the progress that has been made to date, as well as challenges encountered related to the priority areas established in the 2018 SMHP. This section discusses DHCF's focus on design, development, and implementation of core HIE capabilities for District providers.

» **Section 5: Recommendations** elevates areas of opportunity and identifies future actions that should be taken to expand digital health in the District

» **Appendices A-K:** Summarizes key findings from stakeholder interviews and focus groups with District patients, providers, large payers, hospital and health systems, and agencies. It also provides further detail on progress toward Health IT projects, HIE core capabilities, metrics and goals.

As will be addressed in *Section 4*, the 2018 SMHP included a Health IT and HIE Roadmap. The Roadmap presented strategic goals and outlined a vision for a multi-faceted, inclusive, participatory governance model that would help to foster trust, ensure open dialogue, facilitate oversight, drive innovation, and support the successful implementation of projects. The model includes a series of formal structures and systems along with several official rules and regulations that are part of the District's legal code. While some aspects of the proposed governance model were in place prior to the 2018 SMHP publication, most components were implemented after 2018 and are among the DC HIE's most significant accomplishments since then.

The *2022 SMHP Update* also includes detailed discussion of the achievements made on the projects, as well as challenges, with respect to the priority areas proposed in the 2018 Health IT and HIE Roadmap. The recommendations provided in *Section 5* integrate feedback on progress and challenges over the past several years in comparison to both the Health IT and HIE Roadmap, and future directions prioritized by community stakeholders. While the perspectives provided in this report identify progress that has been made as well as needed areas of renewed focus and opportunities for new uses of the DC HIE, the vision remains the same to ensure District resident's health information is available "whenever and wherever it is needed to support patient-centered care and improve health outcomes."

Section 2

Opportunities to Improve Health Care in the District

The District's Health System Has Experienced Significant Changes

Important changes have taken place in the District of Columbia's health system over the past several years that have shaped the District's investments and progress implementing health IT and digital health. First and foremost, the COVID-19 pandemic placed unprecedented demands on the health system and demonstrated the value of digital modes of service, such as telehealth. Furthermore, a series of federal and local initiatives, investments, and strategic plans – both pre- and post-pandemic - provided important context for the District's work and emerging priorities. This section reviews a timeline of major developments influencing the District and DHCF's key priorities for health system transformation, key initiatives underway, and proposed approaches to drive accountability and improvement.

Key Health Priorities in the District

As the District's state entity for administering Medicaid services, DHCF has responsibility for setting health system priorities to support the care of more than 300,000 individuals. DHCF's strategic priorities focus on whole-person care, value, and accountability: 1) Building a health system that provides whole-person care; 2) Ensuring value and accountability; and 3) Strengthening internal operational infrastructure.

DHCF's strategic priorities align well with principles for health system redesign as provided below.

<div style="border:1px solid #ccc; padding:10px;">

DHCF's Health System Redesign Principles Underpin the State Medicaid Health IT Plan

Principle 1: Expand Access to Care

» Ensure appropriate and adequate access to services across all eight wards.

Principle 2: Improve Quality

» Promote the measurement and improvement of quality health care.

Principle 3: Promote Health Equity

» Develop programs and services for the District's high-need populations and address social determinants of health.

Principle 4: Enhance Value and Efficiency

» Pay for value, not for volume of health care services.

</div>

The District continues to have one of the highest health insurance coverage rates in the nation – with DHCF's programs alone providing coverage to four in ten District residents, including 70 percent of children.[4] Despite the level of coverage, health challenges remain as the District is eighth in the nation, per capita, for 911 call volume[2] and roughly ten percent of District residents report they delayed medical care due to not being able to get an appointment soon enough. The District also continues to experience significant disparities in health, particularly by race/ethnicity. Black residents, who comprise more than 50% of the District's population, face stark disparities in maternal and infant health, chronic and complex disease, behavioral health conditions, infectious disease, and perception of personal health status. [5,6,7]

In Fiscal Year 2020, Medicaid-enrolled adults were most likely to have the following chronic conditions: Hypertension (28%), Hyperlipidemia (14%), Diabetes (14%), Rheumatoid Arthritis/Osteoarthritis (10%), and Depression (10%). Medicaid-enrolled children were less likely than adults to have a chronic condition and were more likely to have different conditions affecting them: Asthma (11%), Depression (3%), Anemia (2%). The high prevalence of certain conditions in the Medicaid population makes individuals particularly vulnerable to the COVID-19 pandemic.

It is apparent that healthcare disparities are directly linked to social determinants of health – an impact that has only been exacerbated by the COVID-19 pandemic. As demonstrated in the 2018 Health Equity Report (HER) published by DC Health, which assesses nine (9) factors, including housing, nutrition, and transportation by the 51 statistical neighborhoods in the District, there is an undeniable correlation between social factors and health. Of relevance are the impacts of rent burden and limited access to healthy food. Among the data in the HER, in neighborhoods such as Anacostia and Fort Dupont, 59% and 57%, respectively, a household's gross rent is 35% or more of income, demonstrating the significant burden of housing cost of family budgets. Likewise, the report demonstrates limited access to healthy foods in "food deserts" located primarily in Wards 5, 7 and 8, correlated to high rates of obesity in Wards 5 and 7.[8]

Many of the health conditions prevalent in the District are preventable or manageable. When unmanaged or not treated following care protocols, many may result in avoidable admissions and hospital readmissions. These occurrences continue to underscore the need to focus on improving connections between sources of care, including disease management, service coordination among healthcare and community providers, strategies to address Social Determinants of health (SDOH), and public health information sharing for improved surveillance and intervention.

Health IT and HIE connections across and within the health system require continued investment to address District health system challenges, including lack of well-coordinated,

person-centered care, impact of social determinants of health, and disparities in health outcomes across the District.

Based on review and conduct of numerous needs assessments including the State Health Innovation Plan, the 2018 State Medicaid Health IT Plan, Live.Long.DC, DC Health Equity Report, the Substance Use Disorder Community Need and Service Capacity Assessment, Resilient DC, the 2017 DC Health Systems Plan, and others, the big system-level challenges noted in the District are consistently identified as: 1) a lack of system-ness and systems across provider types to facilitate whole-person care and operational efficiencies; and 2) underlying challenges for District residents as a result of social determinants of health, including trauma and systemic racism.

Major developments in the District's Health System Respond to Community Needs

With respect to responding to the District's needs and strategic priorities, the following activities and reports are major health system influences that have shaped DHCF's approach to digital health infrastructure:

» In June 2019, Mayor Muriel Bowser established the *Mayor's Commission for Health Care System Transformation*, which comprised of 30 stakeholders within the healthcare community to think through strategies and investments necessary to transform health care delivery in the District. At the end of 2019, the Commission published a report outlining a series of recommendations to improve equitable distribution of acute and urgent and specialty care while reducing overcrowding in emergency rooms, improving discharge planning and transitions of care, access to critical and urgent care services, allied healthcare professionals and workforce development, and value-based purchasing of healthcare services. See *Appendix B* for a crosswalk that maps HIE services to recommendations from the Mayor's Commission.

» In November 2019, CMS approved the *District's 1115 Waiver for the Medicaid Behavioral Health Transformation Demonstration*, which went into effect on January 1, 2020. The demonstration provides a broader continuum of behavioral health services and supports for individuals with SMI/SED/SUD, or other behavioral health needs. It also supports movement toward a more person-centered system of physical and behavioral healthcare for Medicaid beneficiaries that facilitate coordinated treatment.

» In 2019, DHCF embarked on a path to improve health outcomes by *expanding managed care for Medicaid beneficiaries* as a vehicle to enable more value over volume by increasing expectations for value-based purchasing through managed care, increased access to care by requiring universal contracting for key providers (acute care hospitals and FQHCs), and more coordinated care by transitioning DHCF's FFS Medicaid

population to managed care. Managed Care Organization (MCO) expansion includes a planned carve-in of behavioral health services into managed care contracts beginning in October 2023 with the purpose of improving coordination and providing whole-person care to increase service integration for individuals with behavioral health needs.

» The *Health Equity Report for the District of Columbia 2018 (DC Health):* considered opportunities for health by looking at nine key drivers of health in District neighborhoods – education, employment, income, housing, transportation, food environment, medical care, outdoor environment, and community safety. Key insights in the report demonstrated that overall, clinical care drives only 20 percent of population health outcomes, while the remaining 80 percent are generated by non-clinical factors, such as social and structural determinants of health.

The *public health emergency in response to the coronavirus (COVID-19)* has led to numerous changes in the District's health system. One notable change to Medicaid as a result of the pandemic was the expansion of telemedicine services, reimbursement of those services, and accelerated adoption of HIPAA-compliant telemedicine products. In March 2020, as a response to the COVID-19 Pandemic and lapse of in-person access to covered health services due to the treatment of infection, DHCF adopted an emergency and proposed rule that established authority for Medicaid to pay for telemedicine services delivered in a beneficiary's home. DHCF also authorized payment for audio-only visits delivered via telephone and administered a technical assistance program to support providers' use of telemedicine technology and platforms.

In addition to District initiatives, DHCF has been actively engaged in strategies to implement federal requirements such as the 21st Century Cures Act, the Interoperability and Patient Access Rule which requires CMS regulated payers to make health information more easily accessible and available to patients by implementing new industry standards (e.g., HL7 FHIR APIs, identity authentication, third-party application, etc.) and by preventing information blocking.

Initiatives Underway

The following major projects and programs are generating substantial changes in the District's health system capacity and services:

» ***New Hospital on St. Elizabeth's Campus*** – In June 2020, the District announced the development of a new George Washington (GW) Health Hospital and Ambulatory Pavilion at St. Elizabeth's East to be operated and maintained by Universal Health Services. This new 136-bed hospital and verified trauma center in Ward 8 will include, but is not limited to,

providing maternal health and newborn nursery services, NICU, rehabilitation, orthopedic care, mental health services, and cancer treatment. The new hospital will also be clinically integrated with GW University Hospital at Foggy Bottom, GW Medical Faculty Associates and the GW School of Medicine and Health Sciences. Scheduled to open in fall 2023 (ambulatory pavilion) and fall 2024 (hospital), this new community hospital will serve to improve access to high quality integrated care for all District residents and help address disparities in health outcomes.

» **District Direct** – On November 15, 2021, the District's Direct system (District Direct) was launched as a single-entry point for residents to apply, enroll, and manage cash, medical, and food benefits. Through District Direct, District residents can submit one application for Medicaid, SNAP, and TANF, Alliance and Immigrants Children's Program applications, benefit recertifications and renewals, upload verification documents, view upcoming and past benefit distributions, view benefit notices in real-time, and update personal/household information. This multi-year, multi-agency program has been a substantial undertaking for the District and updates numerous legacy systems. The District Direct app is free and available in the Google Play and Apple app stores. More information on the program is available at districtdirect.dc.gov.

District-wide Behavioral Health Transformation Goals

The District's Behavioral Health Transformation 1115 demonstration began January 1, 2020. The demonstration allows the District's Medicaid program to pay for services provided to adults with serious mental illness (SMI)/serious emotional disturbance (SED) or substance use disorder (SUD) residing in an institution for mental disease (IMD). Additionally, the demonstration added new community-based services designed to improve behavioral health treatment capacity and strengthen transitions from emergency, inpatient and residential treatment.

Building on the demonstration waiver, DHCF and the Department of Behavioral Health (DBH) have partnered on a set of initiatives to fully realize the District's three goals for behavioral health transformation:

1) Cover a broader continuum of Medicaid behavioral health treatment for individuals with SMI, SED, or SUD;
2) Advance the goals of the District Live.Long.DC Opioid Strategic Plan by improving outcomes for individuals with Opioid Use Disorder (OUD) and other SUDs; and
3) Support Medicaid's movement towards more integrated medical and behavioral health care to better coordinate prevention and treatment.

District-wide Behavioral Health Transformation Related Efforts

Related efforts to enhance infrastructure and capacity to achieve the goal of "achieve[ing] a whole-person, population-based, integrated Medicaid behavioral health system that is comprehensive, coordinated, high quality, culturally competent, and equitable" include:

- ***CMS SUPPORT 1003 SUD Provider Capacity Grant*** - DHCF awarded $4.76 million 2019-2022 from CMS to increase the capacity of Medicaid providers to deliver SUD treatment and recovery services. Funded initiatives that support health information innovation include:
  - Comprehensive Needs Assessment to enhance the behavioral health system of care;
  - Team-based, competency-driven technical assistance for integrated care; and
  - Infrastructure support for behavioral health providers, including telehealth or e-consult pilots, DC HIE connectivity, and electronic consent management to enable exchange protected SUD clinical data.

- ***State Opioid Response Grants –*** DBH awarded $68.7 million 2017-2022 from SAMHSA to create a person-centered system of care at the community level that increases prevention, harm reduction, treatment, and recovery services to meet the goal of reducing opioid use, misuse, and related deaths. These efforts are consistent with Live.Long.DC 2.0 – the update to the District's Opioid Strategic Plan - which recommends a range of strategies to strengthen connections across the continuum of care, develop scalable programs that utilize telemedicine for treating OUDs, and use data to implement a targeted approach at the community level and with special populations.
- ***Behavioral Health Block Grants –*** DBH administers $794,038 in funding to improve the quality of behavioral health services through activities that support evidence-based practices and innovation, including: 1) behavioral health integration readiness technical assistance; 2) EHR system enhancements; and 3) a remote monitoring and prescription management pilot.

» **ARPA Home and Community-Based Services (HCBS)** – The American Rescue Plan (ARPA) of 2021 was signed into law on March 11, 2021 and provides enhanced Medicaid funding for Medicaid Home and Community-Based Services (HCBS). Eligibility for the enhanced 10% Federal Medical Assistance Percentage (FMAP) funds requires states to enhance, expand

HCBS under the state's Medicaid program. DHCF, in partnership with its sister agencies Department of Disabilities Services (DDS), Department of Behavioral Health (DBH), and Department of Human Services (DHS) collaborated to define enhancement activities scope, narrative, and utilization of funds. The District submitted an initial plan detailing proposed enhancement activities, which were approved by CMS in August 2021. Activities seek to address COVID-19 related needs among HCBS providers. This includes the establishment of 1) a technical assistance program that builds on efforts to expand the use of Certified Electronic Health Record technology (CEHRT), extends telehealth investments made during the pandemic, and encourages the use of remote patient monitoring devices; and 2) an EHR incentive program to incentivize HCBS providers to adopt certified EHRs and connect to the DC HIE.

» **Practice Transformation Collaborative –** The District practice transformation collaborative (PTC) is led by DHCF with funding from the Executive Office of the Mayor starting in FY22-23. The PTC aims to support the District's transition to value-based payment by supporting providers' ability to deliver whole-person, population-based integrated care that is comprehensive, coordinated, high quality, culturally competent, and equitable. The PTC will use www.integratedcaredc.com as a front door to provide best practices and learning, as well as individualized practice support for providers. In addition to ongoing support for a successful model of practice transformation managed by Health Management Associates (HMA) through the Integrated Care Technical Assistance DC program, the program will offer on-demand, cross-sector and cross-agency resources for legal analysis, budgeting, and business development support and coordinate among District agencies to improve system-wide transitions of care.

Proposed Approaches to Drive Accountability and Improvement

The District is actively engaged in federal and local efforts to drive system-wide performance improvement. The following frameworks are key to understanding the future direction of digital health to support population health management using the DC HIE. The same can be said for supporting the level of data transparency and reporting by providers and payers needed to achieve the kinds of accountability and improvement envisioned by CMS in their new Innovation Center Strategy Refresh.

» *Value-Based Payment (VBP)* – Based on lessons learned with prior pay for performance and value-based initiatives, DHCF is at a critical juncture to closely evaluate strategies to implement provider incentives, accountability, and oversight as a consistent component of all of DHCF's programs. Providers' willingness and ability to transform their business models to accept bundled payments; partial financial risk or "downside risk;" or develop

sub-capitation or partial-capitation rates is critical to transforming care delivery to improve outcomes and, therefore, a foundational step to successful VBP models. These types of financial relationships via VBP have proven effective at engaging Medicaid providers in practice transformation, yet also require system-level change to be successful. Infrastructure support, such as the DC HIE, and sufficient investment in population health management (e.g. significant upside risk for an attributed population) are also needed to generate population-level improvement in outcomes. In addition, a subset of key performance measures to assess system-wide performance and methodology for selecting additional priority measures based on populations and co-morbid conditions will be needed.

» **DC Medicaid MCO Quality Strategy** – Aligned with its mission to provide comprehensive, cost-effective, and quality healthcare services to District residents with the goal of improving health outcomes, the *2019- 2023 DC Medicaid MCO Quality Strategy* is the framework used by DHCF to guide the District's Medicaid Managed Care Program. The MCO Quality Strategy established goals and objectives for the District's managed care program and documents DHCF's approach to assessing and ensuring access to quality, whole-person care, improving management of chronic conditions, improving population health, and ensuring high value, appropriate care. To assess performance on these goals, interventions are tied to a set of quality measures and tools, including those required by managed care organizations (MCOs) for health plan accreditation, as well as those publicly reported via the CMS Medicaid and CHIP Scorecard, including:
  » HEDIS
  » CMS Adult and Child Core Set Measures
  » Consumer Assessment of Healthcare Providers and Systems surveys

» **Social Needs Screening** - The District's MCO contracts require each MCO to screen enrollees for social needs. To assess the SDOH needs at the managed care program level, DHCF requires the MCOs to incorporate and use a minimum set of SDOH screening questions in their screening processes and address priority domains, including housing, food insecurity, and behavioral health.

» **Measurement-Based Care** – Building on the work of the Integrated Care DC program, DHCF has begun exploring initiatives that support measurement-based care. Measurement-based care (MBC) can be defined as the practice of basing clinical care on client data collected throughout treatment. MBC provides insight into treatment progress, highlights ongoing treatment targets, reduces symptom deterioration, and improves client outcomes.[9] Since validated, evidenced-based tools including the PHQ2,

28

PHQ, CIDI 3.0, MDQ, GAD-7, PCL-C, AUDIT-C, DAST, Mini-Cog, Montreal Cognitive Assessment are available through EHR platforms, the DC HIE has potential to enable District-wide measurement and accountability for improving care and outcomes.

Together, the District's investments and strategic plans have created a framework for a dynamic system poised to make big changes in the next few years. The role of digital health infrastructure must adhere to key principles regarding person-centered care and make it easier for all consumers to access needed health services – across all wards. Overall, the District is positioned to expand digital health services in tandem with sites for onsite care; the imperative is that this next stage of health system development must reduce disparities and disrupt the status-quo. This will enable the District to make substantial progress in improving health care and well-being. In the subsequent sections, the current state of the digital health infrastructure is discussed with this goal in mind.

Section 3

What Does the DC HIE Look Like Today?

A Snapshot of the DC HIE in 2021

Following the publication of the 2018 SMHP, DHCF prioritized the following activities in the 2018 Health IT and HIE Roadmap, to ensure the DC HIE's sustainability and utility:

» Finalizing the DC HIE Rule, formally establishing the DC HIE and implementing robust governance policies to regulate the DC HIE entities

» Expanding the DC HIE network of participating providers

» Enhancing the design, development and implementation of DC HIE core capabilities (i.e. technical services) for District providers

This section reviews progress to date on each of these key tactics. Further discussion on several issues and the priority areas established in the 2018 SMHP is covered in Section 4. Recommendations to address ongoing challenges and identified gaps are discussed in section 5.

Establishing the DC HIE, A Community-Led Approach to Governance

The 2018 SMHP outlined the governance and accountability structures, policies, and systems that were thought to be necessary to manage, monitor, and oversee the development of the DC HIE. HIE governance encompasses the processes, policies, and rules, along with the associated committee structures that guide and regulate the activities of the HIE. The governance model developed to establish, manage, and operate the DC HIE marketplace is among the DC HIE's most significant accomplishments. While there are specific DC HIE governance functions that continue to require refinement, promotion, and implementation, DHCF and the agency's core partners are committed to creating transparent, participatory governance structures and accountability systems.

The key governance functions developed by DHCF and partners to oversee the DC HIE include:

Privacy and security. DHCF governance will support transparent policies that align with privacy and security best practices and undergo review on an ongoing basis. Governance will also guide HIE entities to ensure providers and residents: 1) clearly understand their privacy, security rights, and responsibilities; and 2) are educated about safeguards to protect their information.

Data access. DHCF governance will clearly articulate the data access scenarios, permissions, and monitoring processes for DC HIE participants – including residents, care givers, providers, CSP personnel, and District government employees – who interact with health-related data.

Data quality. DHCF governance will promote national standards for data capture, advance best practices for timely data sharing, and – in accordance with emerging standards – facilitate the incorporation of HIE data (including data source validation) into EHRs.

Permitted data use. DHCF governance will specify the scenarios whereby HIE data may be used for research, public health, and other secondary purposes, and will ensure these scenarios are conveyed for all HIE users in clear, understandable consent forms.

DHCF recognizes the importance of continued stakeholder input and agreement on the areas outlined above. Overall, the DC HIE's governance approach aims to ensure that all health system stakeholders, including patients and consumers, are integrally involved and empowered to help guide the management and oversight of HIE operations as well as short-term and long-term development and implementation efforts. DHCF has also committed to ensuring that there is clarity across all stakeholders regarding the vision, mission, and principles that underlie the HIE.

The DC HIE Marketplace

On July 19, 2019, the publication of the District's "HIE Rule" (Chapter 87, District of Columbia Health Information Exchange, of Title 29, DCMR) formally "establish the DC HIE, govern the registration and designation of HIE entities in the District, and set out guidance to regulate the efficient and secure transmission of health information according to nationally recognized standards." The "HIE Rule" also formally authorizes DHCF to oversee and administer the DC HIE.

The DC HIE is a marketplace of privately-operated registered and designated HIE entities that work together to ensure health information exchange (HIE) is private, secure, and effective. The governance structure and requirements, and participants are described below.

DC Registered and Designated HIE Entities

The DC HIE provides a level playing field and a citywide governance structure to help exchange health information and meet customer needs. There are two ways HIEs can participate, as either a District *Registered* HIE Entity or District *Designated* HIE Entity.

District Registered HIE Entities are organizations that demonstrate that they meet or exceed core minimum privacy, security, and access requirements for HIE identified by DHCF and District stakeholders in the DC HIE Rule. District Registered HIE Entities have key opportunities to engage in discussions with other District Registered and Designated HIE entities that make up the DC HIE to ensure policy and operational alignment among partners. Applications to

participate as a District Registered HIE Entity are accepted on an ongoing basis and must be renewed every three years.

Once an HIE entity has demonstrated it meets the District's privacy and security requirements to become a District Registered HIE Entity, the HIE entity may apply to be competitively selected as the District Designated HIE Entity. The application process to be selected as a Designated HIE is only opened on a competitive basis, and at specific times, generally once every five years. The District Designated HIE Entity is DHCF's organizational partner that supports the ongoing maintenance and operation of the DC HIE infrastructure and services. The District Designated HIE Entity is committed to: 1) supporting the development, maintenance, and sustainability of HIE services; and 2) facilitating the secure, electronic exchange of health information among the District Registered HIE entities and participating organizations in the District.

Participation in the DC HIE is voluntary. HIE entities that do not apply are able to continue their business operations in the District, however, they will not be considered to meet any rulemaking requirements related to "participating in the DC HIE". For example, the Behavioral Health Transformation 1115 Demonstration rule requires that institutions for mental disease (IMDs) participate through a formal agreement with a registered HIE entity of the DC HIE.

The DC HIE is currently made up of two DC HIE Entities (see *Figure 2*): 1) the CRISP HIE earned its District Registered HIE status in November 2019, and 2) the DC Primary Care Association (DC PCA) Capital Partners in Care (CPC) HIE earned its District Registered HIE status in February 2020. In April 2020, CRISP was competitively selected as the District's Designated DC HIE. These entities met all of the requirements related to governance, operations, oversight, and accountability as codified in the DC HIE Rule, were vetted by DHCF, and formally approved by the DC HIE Policy Board.

Since 2020, DHCF has convened DC HIE entities via two regular forums designed to promote engagement in DC HIE operations and governance. The DC HIE Designation Meeting is a quarterly forum to engage in ongoing monitoring requirements per the memorandum of agreement established between DHCF and CRISP Inc. in 2020. The DC HIE Interoperability meeting is a monthly forum for DC HIE entities and DHCF to discuss interoperability issues/challenges and opportunities with each other and DHCF (as the DC HIE convener/regulator). These forums help to promote an open-dialogue and an inclusive participatory process with respect to DC HIE governance and implementation.

Figure 2: The DC HIE Marketplace of Registered and Designated HIE Entities

THE **DC HIE** REGULATED BY **DHCF**
Department of Health Care Finance

The DC HIE Rule (*Chapter 87 District of Columbia Health Information Exchange of Title 29 (Public Welfare) of the District of Columbia Municipal Regulations*) formalizes partnerships to facilitate more cooperation between DHCF and HIE entities.

DISTRICT REGISTERED HIE ENTITIES

CRISP   CPC HIE
CAPITAL PARTNERS IN CARE HEALTH INFORMATION EXCHANGE

- Is a HIE entity that **meets or exceeds privacy, security, and access requirements** for health information exchange.
- Receives **key opportunities** to engage in discussions with other DC HIE entities.
- The District Registered HIE Entity status is awarded for a term of **three (3) years.**

The DC HIE Registration Application is accepted on a rolling basis

DISTRICT DESIGNATED HIE ENTITY

CRISP

- Is a District Registered HIE Entity that **meets or exceeds the consumer education and auditing requirements** in the DC HIE Rule.
- Is a key partner to DHCF, the District Designated HIE Entity **supports the ongoing maintenance and operation of the DC HIE infrastructure or services.**
- The District Designated HIE Entity status is awarded for a term of **five (5) years.**

The DC HIE Designation Application closed September 18, 2019

WHO ARE THE DISTRICT REGISTERED AND DESIGNATED HIE ENTITIES?

Chesapeake Regional Information System for our Patients, Inc.	
Start Date	Expiration Date
November 27, 2019	November 28, 2022

District of Columbia Primary Care Association (CPC-HIE)	
February 24, 2020	February 24, 2023

Chesapeake Regional Information System for our Patients, Inc.	
Start Date	Expiration Date
April 13, 2020	April 14, 2025

Since the implementation of the DC HIE Rule, the DC HIE entities have been active partners with DHCF and have been instrumental in ensuring public trust by meeting together regularly and reporting key issues to the HIE Policy Board and subcommittees. As a result, the DC HIE has exceeded standards and policies related to the secure exchange and use of patient data in the District.

A Governance Model with 'Checks and Balances'

In addition to regulating the DC HIE, DHCF actively works with key stakeholders via three inter-related governance bodies: 1) the DC HIE Policy Board; 2) CRISP DC's Board and sub-committees; and 3) inter-District efforts to evaluate and develop policy guidance on health information exchange in the District.

Figure 3: DC HIE Governance Model
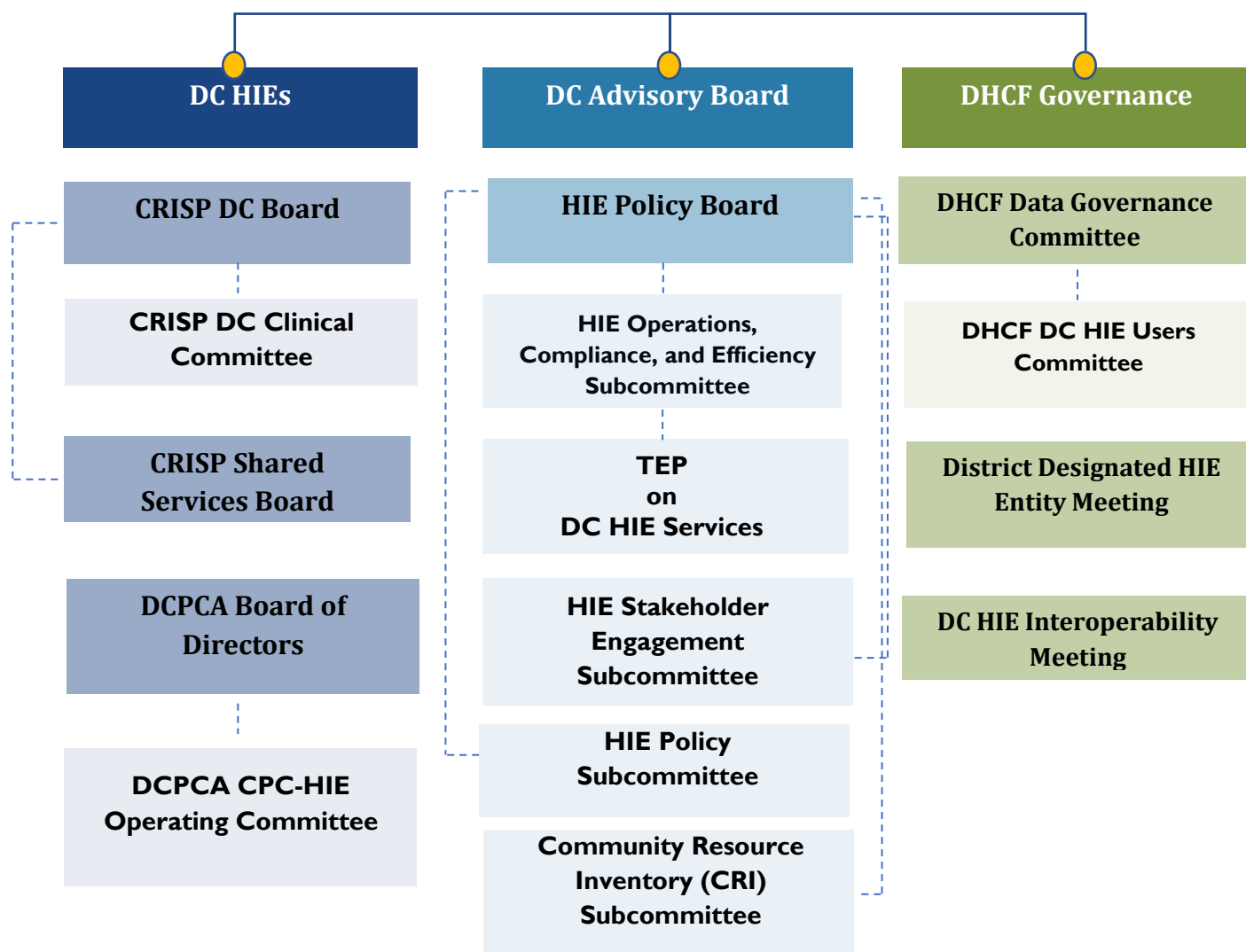
The primary components of the DC HIE Governance model are detailed in *Figure 3*. Though the model is complex, DHCF and its partners feel strongly that the approach creates appropriate "checks and balances" to preserve public trust in the DC HIE over the long term. Particularly as digital health becomes a more common, consumer-facing component of the District's health system, DHCF feels this level of public accountability and engagement is needed to ensure the long-run sustainability of the DC HIE.

The DC HIE Policy Board

In 2012, the Mayor of the District of Columbia established the HIE Policy Board to provide recommendations on the secure and protected exchange of health information in the District. The District's HIE efforts are guided by this twenty-two (22) member volunteer Board that includes representatives from District-based provider associations, hospitals, health systems, payers, providers, Medicaid beneficiaries, information technologists, and District of Columbia Government agencies.

The Board is tasked with making recommendations to the Mayor, and Directors of several key District Government agencies, regarding the District's HIE policies, mission, definition, vision, geographic scope, and functional scope of HIE operations, and how they should be coordinated with local and national efforts.

The Board has charged an Executive Committee, four working subcommittees – HIE Operations, Compliance, and Efficiency Subcommittee; 2) HIE Stakeholder Engagement Subcommittee; 3) HIE Policy Subcommittee; and 4) the Community Resource Inventory Subcommittee – and a technical expert panel that work together to perform the work of the Board. Additional detail on each of the subcommittees can be found in *Appendix C.*

The CRISP DC Board

CRISP DC's Board of Directors are broadly represented by District health system stakeholders. The Board was formed in 2017 and has nine members who represent underserved communities, health plans, provider practices, hospitals, and public health in accordance with the CRISP DC by-laws. The CRISP DC Board operates independent of the Maryland CRISP Board and elects a representative to the CRISP Shared Services (CSS) Board to help guide the direction of technology and operations strategy at CSS. Overall, the CRISP DC Board is responsible for guiding the operations and governance of CRISP DC as an independent, non-profit HIE entity.

The Board empanels the CRISP DC Clinical Committee which represents a variety of DC-based healthcare stakeholders to provide input on CRISP DC's strategic direction. The committee is charged with approving new use cases, making decisions on provider-facing user experiences, and to generally provide subject matter expertise to CRISP DC management.

Expanding the DC HIE Network of Participating Providers

Equally important to an emphasis on governance was DHCF's need to expand the DC HIE network in support of DHCF's strategic priority to deliver integrated, whole-person care.

As of November 2021, the DC HIE demonstrated substantial progress to expand the network and reach as many participating providers as possible:

12,000+ Approved Users

of DC HIE – **a significant increase of 49%** from November 2018

600+ Practice Sites

now have **access to admit**, **discharge** and **transfer** (ADT) alerts

~300 Practice Sites

now **share ADT information, resulting in a substantial increase in bi-directional exchange**.

TODAY, THE VAST MAJORITY OF PROVIDERS AND HEALTH SYSTEMS ARE CONNECTED TO DC HIE INCLUDING:

8
Acute Care Hospitals (all)

8
Federally Qualified Health Centers (all)

20
Home Health Providers

36
Long-Term Care Facilities, including 15 Nursing Facilities

30
Behavioral Health Sites

Figure 4 illustrates the growth of the network over time and increasing sophistication in use of the DC HIE. There are three different tiers of connectivity to reflect this growth, with Tier 1 representing organizations that can receive Encounter Notification System (ENS) alerts and use CRISP's Unified Landing Page; Tier 2 representing organizations that are able to send ADT (Admit Discharge Transfer) data to the DC HIE; and Tier 3 representing organizations that can send clinical data to the DC HIE. These three tiers correspond directly to the DC HIE Evaluation Framework components – access, exchange, and use – which will be used in *Section 4: Roadmap Evaluation* to assess the District's progress and quantitatively evaluate Health IT and HIE improvements. The Framework demonstrates a progressive spectrum of sophistication for providers' use of Health IT and HIE.

Organizational access and use of the DC HIE has increased in every ward since 2015, though some wards have experienced larger increases than others (see *Figure 4*). For example, in 2015,

there were no provider organizations accessing the DC HIE in Ward 7, across any connectivity tier. By 2021, 19 organizations in Ward 7 had access to the DC HIE, including 14 at Tier 1, two at Tier 2, and three at Tier 3. Similarly, in 2018, Ward 4 had no facilities participating in the DC HIE. By 2021 there were 27 facilities at Tier 1, one at Tier 2, and seven at Tier 3.

Figure 4: Location of DC HIE Users, by Connectivity Tier, 2015-2021

● **Tier 1** represents organizations that can *receive ENS alerts and use CRISP's Portal*
● **Tier 2** represents organizations that are able to *send ADT data to the DC HIE*
● **Tier 3** represents organizations that can *send clinical data to the DC HIE*
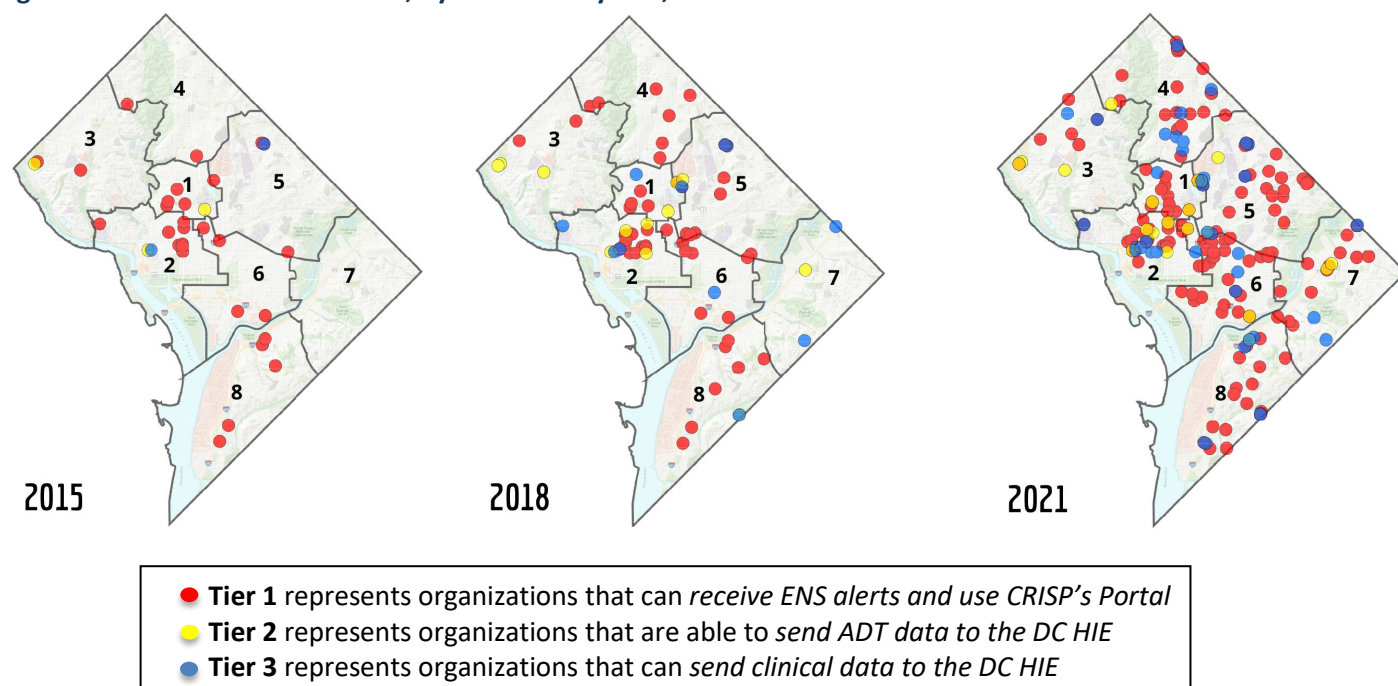
To ensure all Medicaid providers modernize and participate in the DC HIE, DHCF has received approval from CMS to implement a new American Rescue Plan Act (ARPA) HCBS Promoting Interoperability Program in FY22-24. This program aims to connect an additional approximately 200 HCBS providers (behavioral health, home health aides, etc.) with certified electronic health records or up-to-date case management systems, as well as provide bi-directional connectivity to the DC HIE.

Another important development is the degree to which other District health agencies are now engaging with the DC HIE using CRISP services. The DC Department of Health (DC Health), Department of Energy and Environment (DOEE), Fire and Emergency Medical Services (FEMS), Department of Corrections, DC Public Schools, Office of the Chief Medical Examiner and the Department of Behavioral Health have signed participation agreements in place that enable access and use of DC HIE tools. *Appendix D* provides a list of these agencies and descriptions of their current uses of CRISP services.

COLLABORATIVE CASE STUDY #1:
Department of Energy and Environment (DOEE) *Lead Registry*

DHCF, as the coverage provider for every seven out ten children in the District of Columbia through the Medicaid and CHIP programs, has a shared responsibility with the DOEE to ensure that District providers perform their legal obligation to conduct blood lead level (BLL) screening as part of a well-child visit for all young children. Missed opportunities to screen children for BLL as part of well-child visits put children who live in the District at risk for serious and irreversible harm from lead exposure.

In 2021, CRISP integrated with the DOEE lead registry making lead screening data available through the DC HIE while also allowing the agency to automate care alerts for providers and health plans in the event of an elevated lead blood level.

Today, providers who access the DC Lead Registry through CRISP, either online or through their own electronic health record, have a quick and easy way to check lead screening status for patients and be alerted regarding elevated blood lead levels. The patient's current and past BLL test results can be viewed in CRISP's Health Records and Patient Care Snapshot tabs.

If a patient has an elevated BLL test result, a Care Alert will also appear in the Patient Care Snapshot tab. This information can be used to: 1) guide providers' clinical decisions regarding anticipatory guidance, screening, treatment, and repeat testing for lead exposure; and 2) help health plans, including Medicaid MCOs, meet their members' lead testing, treatment, and follow-up care needs.

COLLABORATIVE CASE STUDY #2:
DC Health's Response to the Covid-19 Pandemic, Lab Reporting and Vaccine Tracker

During the COVID-19 pandemic, the DC HIE demonstrated adaptability and regional value by quickly supporting DC Health, providers, and payers.

In March 2020, hospital, commercial, and public labs were required through an administrative in partnership between DHCF and DC Health to report lab results through the DC HIE.

This streamlined the ability for not only DC Health, but also providers to access the same lab information. DC Health also began providing case files to the DC HIE. Care teams, in turn, were able to receive notification on their patient's positive or negative results, while FEMS first responders received notifications if a positive case occurred subsequent to transport.

In 2021, a similar administrative order process and partnership between DHCF and DC Health occurred to support the exchange of COVID immunization data to the CRISP Vaccine Tracker. DC Health provides daily immunization files to CRISP DC allowing providers and payers, including DC Medicaid and Medicaid MCOs, to track and document vaccine outreach via the Vaccine Tracker, which allows patient panel view of receive vaccine doses and an analytics tool provides statistics on vaccination summary, including age, race/ethnicity, wards, and other demographics. Having a standards-based DC HIE network in place makes technology implementation among trusted partners in the District more efficient.

COLLABORATIVE CASE STUDY #3:
Building Trusted Partnership to Enable Connectivity and Bi-directional Exchange Among District Pediatric Providers

While participation in the DC Medicaid Promoting Interoperability (PI) program has certainly increased over the years (see *Appendix E*), effectively engaging and providing consistent technical assistance to larger hospital systems, including Children's National Medical Center (CNMC), has remained challenging.

CNMC first participated in the District's Medicaid PI Program in 2014, but subsequently decided to continue their participation with the neighboring state of Maryland. In 2018, upon a complete turnover in staff, DHCF's new PI team (consisting of only two staff members) worked effectively to regain CNMC's support and overall commitment – ultimately positioning them to achieve great program success in the years to come.

The greatest obstacle preventing the larger hospital systems from achieving PI program success is not technological, but cultural. Interoperability of health data requires close collaboration amongst various stakeholders, vendors, and patients alike. Health IT teams within larger hospital systems often find themselves siloed within the organization, resulting in persistent challenges while attempting to progress in terms of interoperability. The PI team had to collaboratively work towards slowly eliminating those silos and encouraging greater communication amongst members of multiple teams to ultimately achieve the common goal of PI success.

DHCF's PI team strategically utilized effective hands-on technical assistance provided by District of Columbia Primary Care Association (DCPCA), to deliver an exceptional data-driven technical assistance strategy. As such, CNMC will receive the most incentive dollars for successful participation in the PI Program Year 2021 than any year prior. Over 150 CNMC providers have met the Program Year 2021 requirements and are estimated to receive roughly $1,343,000 for their participation in this final year!

These efforts have implications far beyond the financial benefit to CNMC. Participation in the PI program and health information exchange (HIE) connectivity efforts have subsequently facilitated an increase in the use of Health IT and HIE tools within the District. Moreover, this effort has enabled for a secure bi-directional exchange of pediatric data for the first time in the District in ways that improve quality, safety, and effectiveness of patient-centered care.

Enhancing the Design, Development and Implementation of Core Capabilities (i.e. technical services) for District Providers

DHCF, CRISP DC, and CPC-HIE have dedicated significant time to the design, development, and implementation of technical services to meet providers' needs. Throughout this process however, technology implementation has never been viewed as the end goal, but rather the enabler to connecting different parts of the health system. The District and CRISP DC, as the District's Designated HIE, view the overall system and DC HIE marketplace as a *health data utility* that can exchange electronic health-related data across the network of care within the governance model described in the previous sections.

The DC HIE, as a *health data utility,* is a public good enabled through cross-sector partnerships that: 1) provide shared services; and 2) foster a culture of shared responsibility for ensuring the availability and quality of actionable information.

Health data utilities are:
- » Non-profit or independently governed;
- » Designated state entities, broadly governed by a mix of public sector and private sector health leaders;
- » Connected to all important healthcare providers, especially hospitals;
- » Able to receive some data via regulatory requirements; and
- » Held to a high level of security and patient privacy protections.

In this model, the primary value of the tools and resources is the extent to which each can draw data from across the network to support user stories – real world examples – that demonstrate ways health information exchange is essential to high quality, person-centered care.

To contextualize the technical services, DHCF and the HIE Policy Board defined four priority areas to guide the design development, and implementation of Health IT and HIE. The priority areas represent key functions of the District Health IT and HIE infrastructure that had stakeholders identified as essential for delivery of care to residents and patients. Each priority area is briefly described below.

Priority Areas	Objective
Transitions of Care for Individuals	Technology that supports transitions of care will help health providers and CSPs facilitate communication across care settings, make timely referrals and exchange summary records, and access available resources.
Social Determinants of Health Data	Collection, exchange, and use of SDOH data will maximize interventions to support individual health, reduce barriers to access, and improve the efficiency of person-centered services.
Population Health Management	Health analytics include a broad category of data tools, algorithms, and visualizations that will be designed to facilitate a provider's understanding of their patient population and develop targeted interventions to better manage population health.
Public Health	The District's public health projects will focus on ways HIE can work with DC Health's existing infrastructure and programs to expand public health HIE connectivity, facilitate public health case reporting, and support public health registries for all providers in the District.

In addition, two priority areas were introduced after the SMHP's publication in 2018 due to the need for: 1) a broad range of system transformations aimed at strengthening the behavioral health system; and 2) bolstering access to telehealth in light of the COVID-19 public health emergency.

Priority Areas	Objective
Behavioral Health Transformation	Uses of Health IT and HIE that support a whole-person, population-based, integrated Medicaid behavioral health system that is comprehensive, coordinated, high quality, culturally competent, and equitable. Integrated care models ensure that mental health, substance use disorder, primary care, and specialty services are coordinated and delivered in a manner that is most effective in caring for people with multiple health care needs.
Telehealth	Telehealth is a modality for the delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies. The COVID-19 pandemic spurred District providers and payers to quickly adapt in their approach to care delivery in the community with telehealth becoming a more prominent modality of care delivery. Telehealth use can continue to make services more readily available or accessible, improve communication and coordination, and support self-management of health care.

To achieve the functions described in each of the priority areas, a variety of technical tools and programs must work together. The technological building blocks that operationalize the priority areas were further developed and implemented as *core capabilities for District providers*, as shown in *Figure 5*. For a full description and examples of each core capability, including how it is viewable to end users in the DC HIE, see *Appendix F*.

The DC HIE critical infrastructure tools are currently the most commonly used core capabilities. These particular tools – ADT Alerts, Health Records, Patient Care Snapshot, and Image Exchange – have been available to providers the longest, since 2014 (for ADTs) and 2019.

The CRISP Portal [10] has also made it far easier to fully integrate CRISP tools into providers' EMRs, which is known to greatly improve adoption. Furthermore, health records and image exchange are conceptually familiar to providers – these are essentially electronic versions of documentation traditionally received via fax, but are now delivered through a centralized mechanism, the DC HIE.

Figure 5: DC HIE is a Health Data Utility with Six (6) Reliable Core Capabilities for Providers
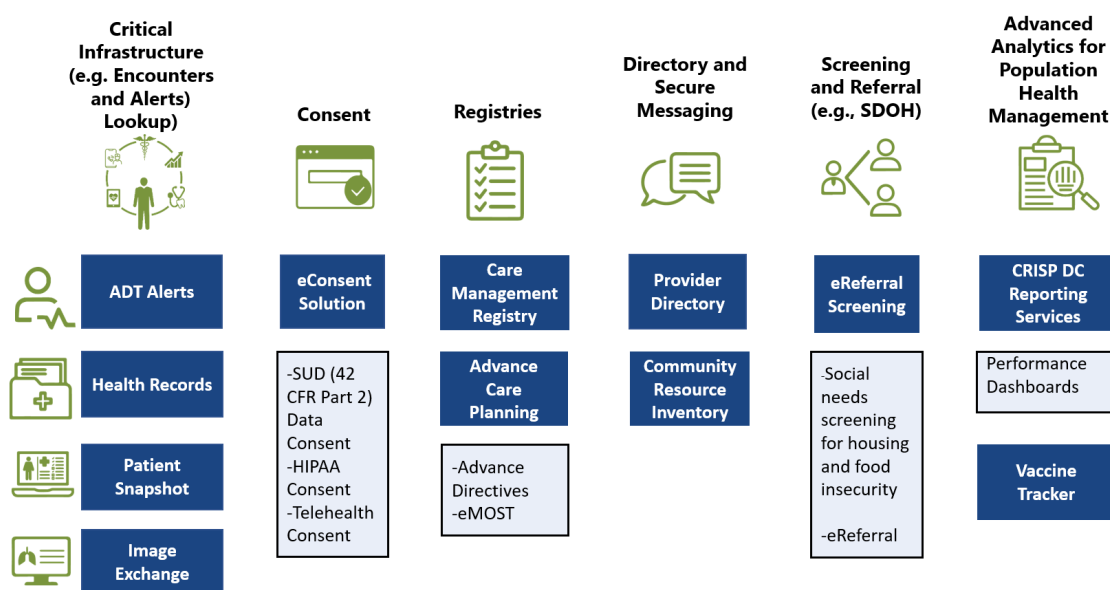
However, other tools, such as eReferrals and screening for social determinants of health, or social needs – and eConsent or advance care planning, are useful, but will require greater changes in clinical workflow. These tools allow users to save time and resources, while supporting delivery of person-centered care in the long run. However, these tools will require new and unfamiliar ways to capture information from the patient, or to reference information provided by the patient in another setting, all of which will require additional effort in the short term.

Together, these six core capabilities make up the DC HIE health data utility model, which is highly modular and scalable. The shared service infrastructure (see *Figure 6* below) implemented by CRISP, with approval from the CRISP DC Board, also creates opportunities for re-use of technology among participating states. For example, Maryland's adoption of the patient snapshot approach developed by DC.

As will be discussed in the Roadmap Evaluation, a prevailing challenge for the next phase of the DC HIE's evolution is to more fully address user experience and person-centered design to promote organizational change management in practices across the District's health system.

Figure 6: The DC HIE's Technical System for Core Services is a Highly Scalable and Robust Regional System
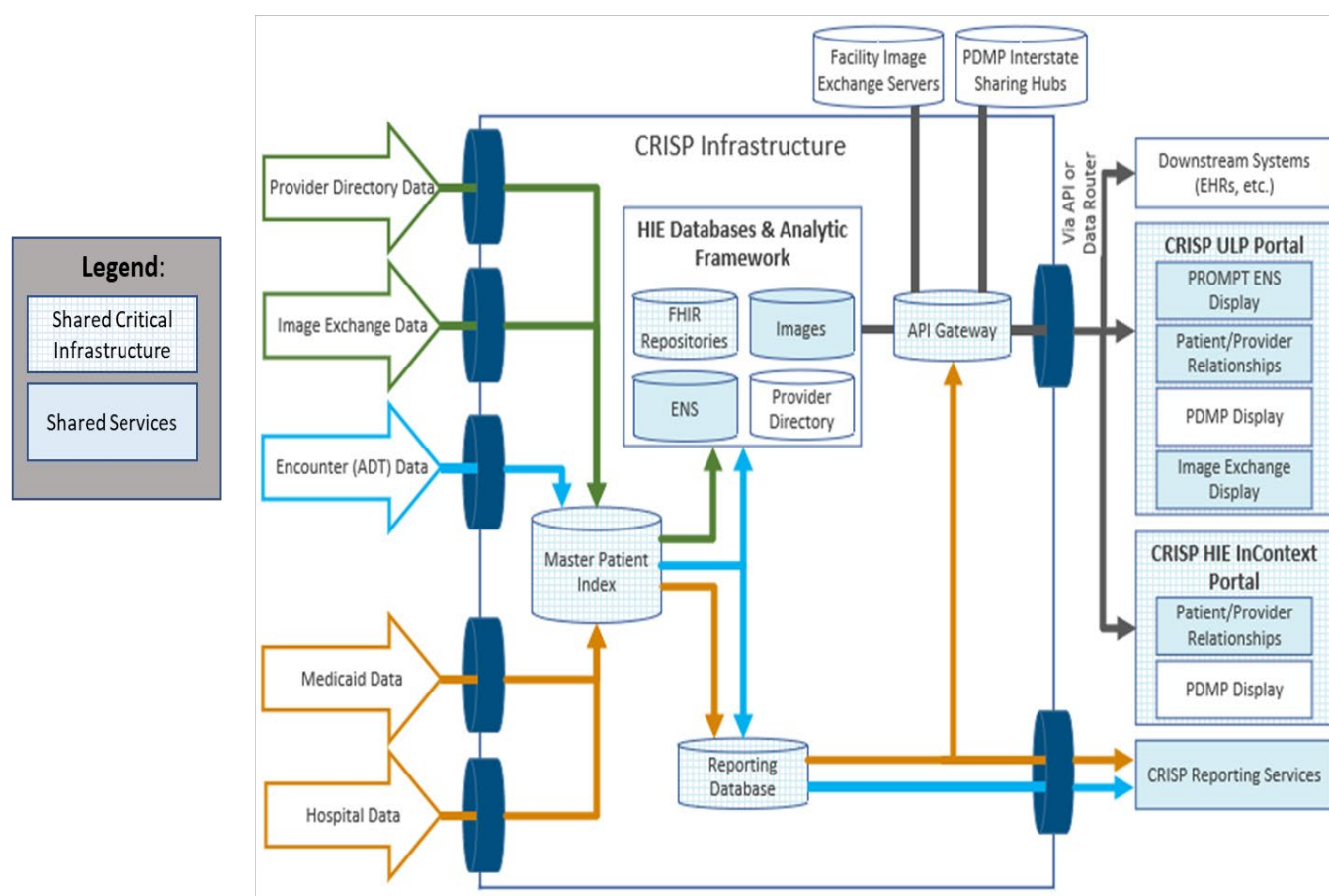
COLLABORATIVE CASE STUDY #4:
Open-Source eConsent Solution and Partnerships Enable Regional and National Technology Sharing across State Lines and Region

CRISP DC partnered with the District of Columbia Department of Health Care Finance (DHCF) to develop a comprehensive, open-source consent management solution to enable the electronic exchange of behavioral health information, including substance use disorder (SUD) data protected by 42 CFR Part 2, through the DC HIE.

Representatives from Maryland, West Virginia, Delaware, and Arizona concurrently provided guidance and input into the development of the consent tool with implementation divided into two phases. Phase I of the tool enables providers to capture patient consent sharing Part 2 SUD treatment information among all treating providers through the HIE for treatment and care coordination. Phase I also enables HIE opt-outs and payer specific access to SUD data. Phase II, currently under development will empower patients to register their own Part II compliant consents, consistent with the options available in Phase I. Patients will have the option to register additional consent preferences including research opt-outs and HIPAA authorizations.

The consent management solution is designed to meet Fast Healthcare Interoperability Resources (FHIR) - based standards and through CRISP's shared services platform can be accessible to HIEs across several regions. Additionally, the open-source concept provides a low-cost, effective solution that can be scaled without additional licensing fees. This configurable tool reduces clinician and administrative reliance on paper forms for sharing through the HIE and integrates with existing SUD provider workflows.

Success of this project has led to inquiries from other states as they look to develop a consent management solution with the option of utilizing the DC HIE open-source platform.

Supporting Telehealth to Minimize Barriers to Care Delivery

The COVID-19 pandemic spurred District providers and payers to quickly adapt in their approach to care delivery in the community. In addition to the expansion of availability of HIE capabilities, telemedicine also became a more prominent mode of care delivery during the lapse of in-person access to covered healthcare services due to the threat of infection. DHCF

modified policies and implemented programs to support and ease provider adoption of telemedicine.

Changes to telehealth policy and regulation

On March 12, 2020, DHCF adopted an emergency and proposed rule that established authority for Medicaid to pay for telemedicine services delivered in a beneficiary's home. On March 19, 2020, in response to the coronavirus (COVID-19) public health emergency under the Mayor's authority, DHCF authorized payment for audio-only visits delivered via telephone, temporarily suspending provisions of the District of Columbia Telehealth Reimbursement Act of 2013 that indicate "services delivered through audio-only telephones…. are not included" in the definition of telehealth.

Emergency Telehealth Technical Assistance Program

In March 2020, DHCF conducted an environmental scan to collect information regarding the availability and use of telehealth in the community, as well as provider needs. These findings helped to inform DHCF on the most needed categories of technology to encourage the active participation of telehealth within District Medicaid providers particularly during the initial trying pandemic months.

Along with feedback received from the District's provider community that largely supported the emergency telehealth response, the District of Columbia's Mayor Muriel Bowser announced recommendations from the ReOpen DC Advisory Group on May 21, 2020. Two of the recommendations made by this committee relate directly to telehealth and digital accessibility, linking this request to CMS to recommendations made by District city administrators included: 1) Address equity barriers to telehealth and other virtual services by ending the digital divide and supporting small providers in standing up these services; and 2) Consider continuing, and where appropriate, expanding, telehealth services and targeted reimbursements.

On July 8, 2020, the District received approval for a total of $1,248,450 through the end of Federal Fiscal Year 2020 for an emergency request to CMS for a HITECH enhanced match (90% Federal Financial Participation) per 45 CFR § 95.624. The request furthered DHCF's efforts to provide telehealth emergency support in partnership with eHealthDC, a DC Primary Care Association program, and their subcontractor, Enlightened Inc. Through this effort, DHCF sought to support participating District Medicaid providers' continued efforts to combat coronavirus (COVID-19) by:

1) Loaning laptops with data plans to Medicaid providers to ensure equitable access to technology;
2) Administering HIPAA-compliant telehealth platform licenses free of charge to Medicaid providers; and

3) Assisting colleagues at the Department of Disability Services (DDS) with upgrading their systems and related hardware.

As a result, approximately 400 laptops were loaned to District Medicaid providers and approximately 100 telehealth platform licenses were purchased to be used by District Medicaid providers. The program ran for a period of one year within the duration of Federal Fiscal Year 2020, beginning on October 1, 2020 and concluding on September 30, 2021.

Given the success and articulated need and support for telehealth technology and resources, DHCF requested similar technology funds in their American Rescue Plan Act (ARPA) request to support home and community-based service providers, which will be discussed along with future investments in digital health towards the end of *Section 4.*

Section 4

Roadmap Evaluation

Evaluation Framework and HIE Metrics

The 2018 SMHP's Health IT and HIE Roadmap presented a strategy to expand and better utilize Health IT and HIE in the District in fiscal years 2018 through 2021. The Roadmap proposed a series of DC HIE projects and programs to achieve the District's vision of *providing actionable health-related information whenever and wherever needed, to support patient-centered care and improve health outcomes*. Furthermore, the 2018 SMHP also presented a framework for ongoing evaluation and monitoring of the progress to achieve DHCF's HIE vision and goals. This section discusses the achievements, impacts, and areas for growth in DC HIE based on the evaluation framework.

Based on a review of national frameworks and maturity models,[11] DHCF had developed an Evaluation Framework for Health IT and HIE (see *Figure 7*) in the 2018 SMHP. This Framework consists of four components – Access, Exchange, Use, and Improve – and will be used in this section to assess the District's progress and quantitatively evaluate Health IT and HIE improvements. The Framework demonstrates a progressive spectrum of sophistication for providers' use of Health IT and HIE.

Figure 7: Health IT and HIE Evaluation Framework
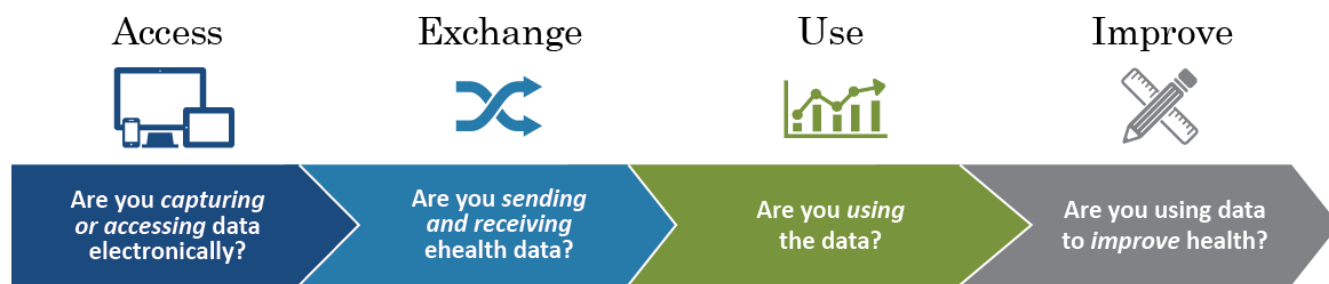
Access	Exchange	Use	Improve
Are you *capturing or accessing* data electronically?	Are you *sending and receiving* ehealth data?	Are you *using* the data?	Are you using data to *improve* health?

Subsequent to the publication of the 2018 SMHP, DHCF worked with its partners and the DC HIE Policy Board to develop measure specifications and to assess the feasibility of capturing each of the proposed metrics. As a result, the initial proposed 21 measures (see *Appendix G*) were replaced with a new parsimonious set of 12 meaningful, non-burdensome measures, which can be referenced in *Appendix H*.

Below is a discussion that reviews the progress and achievements that have been made since 2018 by applying each component of the evaluation framework – Access, Exchange, Use, and Improve.

Access Are stakeholders capturing or accessing health information electronically using established standards?

Access assesses whether health information is accessible electronically within a provider's workflow for care delivery and decision-making and is available to patients. The following Health IT and HIE metrics were used including:

- » Number of Active DC CRISP users, by user type
- » Number of organizations (and locations) that are provisioned to access encounter notification services (ENS)
- » Number of DC Hospitals with live Single Sign On (SSO) of CRISP services
- » Number of DC ambulatory practices with live SSO of CRISP services
- » Number of DC organizations (and locations) that have a participation agreement with CRISP to access data (CRISP Tier 1 Connectivity).

Investments in connectivity outreach, engagement, and technical assistance supported growth in DC HIE participation

Access to the DC HIE expanded significantly between 2018 and 2021. *Figure 8* shows that the number of individual users participating in the DC HIE increased by more than 50% between 2018 and 2021, from 7,890 individuals to nearly 12,000.

This growth is partly the result of investments in technical assistance and outreach. Since 2019, DHCF funded a partnership of District organizations and HIEs to help connect Medicaid providers to the DC HIE. This partnership provided a comprehensive program, including education, training, onboarding to the DC HIE, and training to achieve progressive tiers of connectivity.

Targeted outreach to District providers who submit 100 or more Medicaid claims annually, behavioral health providers, long-term care providers, small and independent practice organizations resulted in the onboarding of a variety of providers to the DC HIE and connectivity for low-capacity and/or low-adoption provider groups in the District.

Figure 8: Number of Active DC HIE Users

October 2019: 8,622
October 2021: 12,832

51
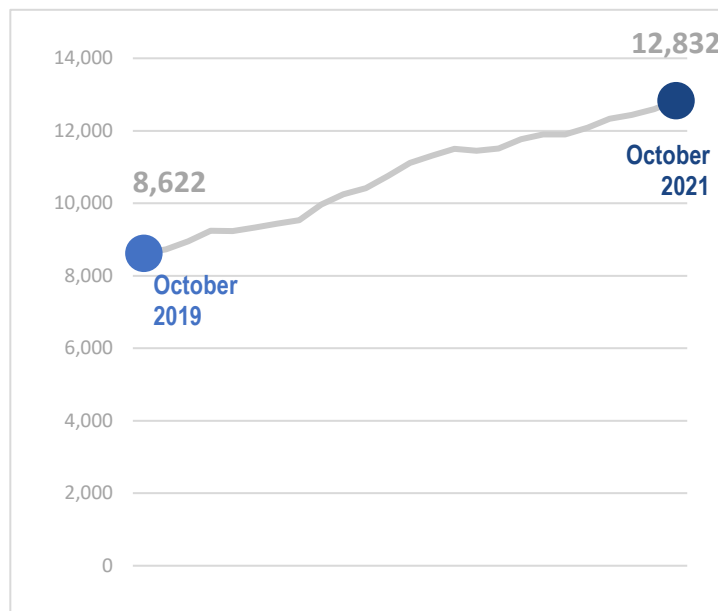
The District also saw substantial increases in the number of organizations and unique service locations participating in the DC HIE between 2018 and 2021. *Figure 9* shows that the number of DC service locations provisioned to access encounter notification service (ENS) data through the DC HIE nearly doubled during this time, increasing from 267 service locations to 510. This demonstrates growing provider participation in HIE and access to timely information, which supports care coordination and care transitions.

Figure 9: Number of District Locations Provisioned to Access ENS
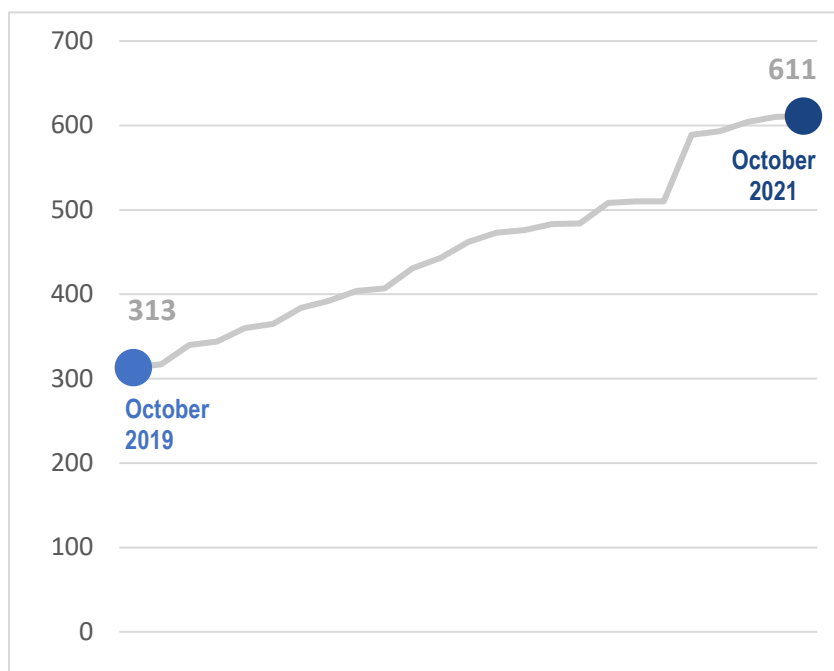
Implementation of Single Sign On and the CRISP App Streamlined Access to DC HIE Tools

The expanded availability of Single Sign On (SSO) technology helped remove workflow barriers for providers seeking to more seamlessly access the DC HIE at the point-of-care. SSO technology connects provider EHRs to HIEs in order to display HIE data within provider EHRs without separate log-ins and passwords to access HIE information. This, in turn, minimizes workflow disruptions, increases use of HIE tools, and promotes patient safety. SSO integration from the DC HIE to participants using the eClinicalWorks and Allscripts EHRs was completed in late 2018.

As of fall 2021, DC HIE participants using the Athena, Cerner, and Epic EHRs can use the new CRISP App to facilitate one-click access to patient records in the HIE from within the EHR. CRISP is preparing to test and deploy its app to eClinicalWorks users in early 2022. All District hospitals and some large organizations have one-click access to CRISP. Input collected through interviews and focus groups in support of this the *2022 SMHP Update* have indicated that providers who have access the DC HIE through single sign-on capabilities integrated within their EHRs are more likely to access and use the DC HIE.

Exchange	Are stakeholders able to send, receive, and exchange high-quality health information electronically?

Exchange determines whether users – including providers and patients – can easily send and receive health information through secure mechanisms using standardized message formats, documents, and transport protocols. The following Health IT and HIE metrics were used including:

- » Number of DC healthcare organization (and locations) that are sending encounter data to CRISP (CRISP Tier 2 Connectivity), by organization type.
- » Number of DC healthcare organizations (and locations) that are contributing clinical data, to CRISP (CRISP Tier 3 Connectivity) in addition to encounter data, by type.
- » Number of de-duplicated DC Medicaid beneficiaries on active CRISP provider panels
- » Number of ENS transactions from hospitals received by District ambulatory providers
- » Number of CDAs received by CRISP, by DC organization type

Despite growth in HIE access, data exchange with the DC HIE is still behind target

Investments in outreach, education, and technical assistance supported broader access to HIE, but more sophisticated data sharing with the DC HIE is much lower. *Figure 10* below displays the number of organizations that are sending encounter notification transactions (Tier 2) as well as clinical data (Tier 3) to their panel of patients compared to the number of organizations that have access to the DC HIE (Tier 1).

Figure 10: Number of Organizations Connected to the DC HIE, by Connectivity Tier

- o **Tier 1** represents organizations that can *receive ENS alerts and use CRISP's Portal*
- o **Tier 2** represents organizations that are able to *send ADT data to the DC HIE*
- o **Tier 3** represents organizations that can *send clinical data to the DC HIE*
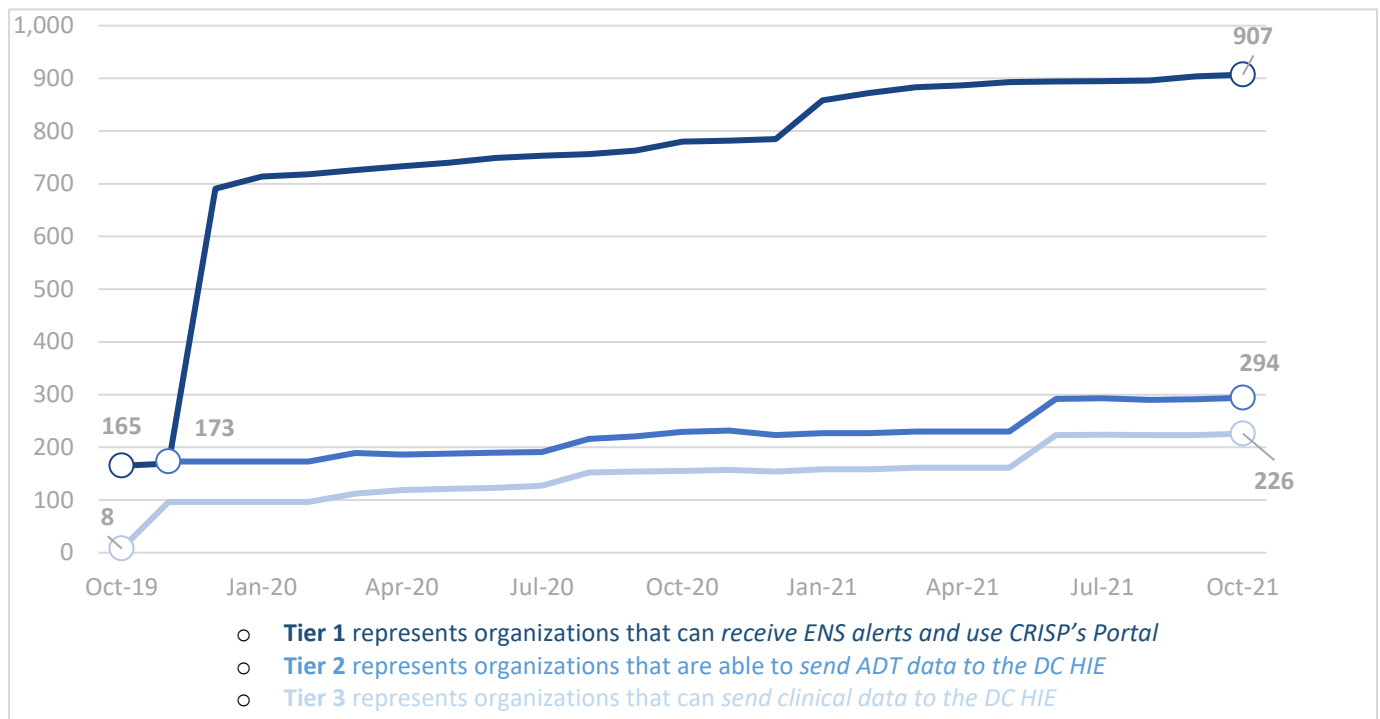
Some of these trends can be attributed to technical limitations of some EHR products, which do not facilitate ready integration with the DC HIE. Technical assistance partners explored and implemented HIE "hub" technologies, such as SmartLink and KNO2, to enable some long-term care and behavioral health provider organizations with non-certified systems to connect with the DC HIE to send encounter and clinical data. In addition, there are governance and legal barriers related to consent that have influenced some organizations to use but not yet share data with the DC HIE. DHCF and partners will need to continue exploring sustainable solutions and providing technical support to increase the number of organizations contributing data to the DC HIE.

Nearly all Medicaid beneficiaries today have a provider who is sending and receiving data through the DC HIE.

Medicaid-serving District provider organizations, including major health systems, all District acute care hospitals, federally qualified health centers (FQHCs), Institutions for Mental Diseases (IMDs), and nearly all nursing facilities are connected to the DC HIE. Over the last three years, growth in the number of organizations accessing HIE tools and, to a lesser extent, contributing encounter and clinical data, has led to nearly all District Medicaid beneficiaries (98% as of October 2021) having data flowing to providers in their care team through the DC HIE. The number of unduplicated beneficiaries on DC HIE provider panels also increased between 2020 and 2021, from about 250,000 beneficiaries to more than 300,000 beneficiaries.

COLLABORATIVE CASE STUDY #5:
MCOs Partnering with the DC HIE and Community-Based Organizations (CBOs) to Refer Beneficiaries to Social Needs Services

The District Community Resource Information and Exchange (CoRIE) project – designed to connect health and social service providers through existing DC HIE infrastructure – is an early, innovative example of bi-directional communication between health care providers and CBOs. Shared capabilities developed through this initiative, including social needs screening and closed-loop referrals, enabled partnerships between provider organizations, MCOs and community-based organizations (CBOs) to connect Medicaid beneficiaries to social needs services. Through the DC HIE, care coordinators are able to make a referral for a social service (e.g. nutrition services), MCOs are able then able to view and authorize that service before sending it to the identified CBO for further referral management.

A significant lesson learned in supporting stakeholder ability to exchange data is that *interoperability through public-private partnerships is key to supporting and enabling integrated systems*, which in turn can help cross-sector care teams with addressing and reducing health inequities.

Use	Are stakeholders using available electronic health information to support care?

Use assesses whether electronic health information is present at the point-of-care, aids decision-making, and supports analytics and quality measurement. The following Health IT and HIE metrics were used including:

» Number of DC CRISP users who performed a patient care snapshot query in the last 30 days, by organization type

» Average time for hospital to send electronic discharge summary to CRISP post discharge, by hospital.

Patient Care Snapshot Captures Patient Journeys through the Health System

Successful use of electronic health information to support care relies on accessible, accurate information that can help end-users identify patients' journeys across healthcare and community settings and make decisions. Over the last three years, the CRISP Patient Care Snapshot has become the most regularly accessed tool in the DC HIE.

Figure 11: Number of DC HIE users who performed a Patient Care Snapshot Query in the last 30 days

Figure 11 provides a clear illustration that providers are using the HIE in their day-to-day work. This measure is a 30-day retrospective count of the number of users who performed a patient care snapshot query. Over a 30-month period, the rate increased more than four-fold.
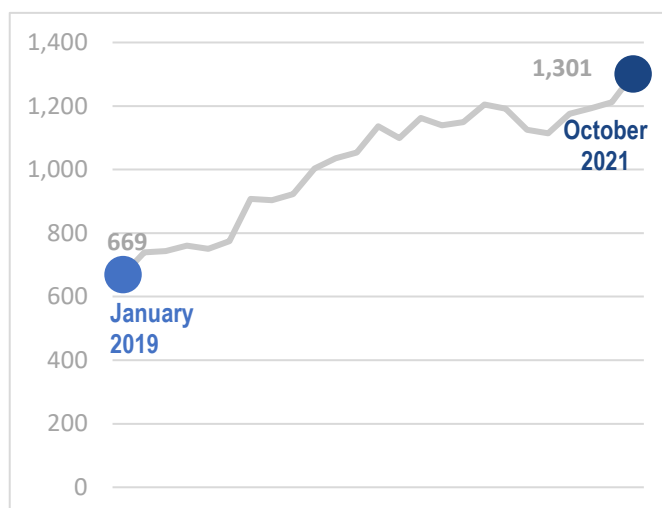
The most common users of the snapshot query were hospital-based and FQHC-based. Of note, users with SSO capabilities constituted the most common group of individuals to use this tool – demonstrating that having a convenient method to access HIE at the point-of-care supports more regular use.

Measure Development Necessary to Capture Timeliness and Completeness of Data Elements

The District has been heavily focused on enabling access to the broad spectrum of health system users. Thus, many of metrics that are in use so far capture access and exchange with the DC HIE. High-quality data results from the use of standardized terminology documented in the same format, such as the continuity of care document (CCD) standard promoted through the

HITECH Act's Meaningful Use requirements, which is further exchanged with similar levels of frequency and granularity.

Substantial efforts have been made by the DC HIE Policy Board and the DC HIE to support data quality and the greater standardization of the data that is shared. The HIE Operations, Compliance, and Efficiency (OCE) Subcommittee of the DC HIE Policy Board: 1) developed standards related to data elements exchanged at the time of hospital discharge to facilitate seamless transitions to post-acute settings; and 2) established benchmarks for provider accuracy, timeliness, and completeness of data to guide those uploading patient data to the DC HIE. The District will disseminate these standards with provider organizations and continue the work between the DC HIE and participating providers to support and measure standardized data transfer. DHCF and DC HIE stakeholders will also explore and implement new frameworks and non-burdensome measures that can monitor timeliness and other dimensions of data quality.

Improve   Are stakeholders using data to improve health care delivery?

Improvement considers the extent to which Health IT and HIE generate positive, measurable changes in health outcomes, care delivery, efficiency, and user satisfaction. This step incorporates efforts to continuously measure and assess performance improvement. As of March 2022, there are no Health IT and HIE metrics in use to capture progress related to the Improve domain of the evaluation framework.

The 2018 SMHP and subsequent stakeholder engagement resulted in the development of measures to monitor this domain, but these have not yet been feasible to implement. Proposed measures included quality and Pay-for-Performance (P4P) metrics achievement among DC HIE users, repeated imaging and laboratory study occurrence within 90 days among DC HIE users, and patient health outcomes among District providers utilizing Health IT and HIE.

New upcoming initiatives to support digital health and integrated care models as well as a three-year plan to develop and expand the availability of basic and advanced analytics and decision support tools (see *Figure 12*), can support specific interventions, population monitoring, and other activities necessary to fairly evaluate the relationship between technology use and care outcomes.

Figure 12: Basic and advanced analytic population health management capabilities in DC HIE

DHCF is prioritizing the development of basic and advanced analytic population health management capabilities in the DC HIE over a 3-year period

	Basic Analytics	Advanced Analytics
Development	FY22 – FY23	FY23 – FY24
Data Source	Primarily claims-based	Data from multiple sources is leveraged and transformed into a usable format
Features and Metrics	Reports on demographic, health utilization, and cost metrics for patients in a panel Define and/or compare one or more populations (i.e. chronic disease, program enrollment, or other groupings)	Measurement based care capturing and monitoring patient reported outcomes
Use	Easily identify patients who meet criteria for a specific action to improve patient health Ability to monitor progress in quality measures reporting and incentive programs	Visualization tools to strengthen communication across clinical and non-clinical settings Patient-facing reports to engage individuals in care decisions (e.g. improve Rx adherence)
Stratification	Risk stratification to identify high-cost, high-utilization, members with chronic disease	Predictive risk models based on claims and clinical data to support interventions

While there is limited quantitative data to demonstrate technology's role in improving health care delivery, information gathered through stakeholder interviews and focus groups demonstrate that providers are using DC HIE tools to improve care delivery. One common use of the DC HIE cited by stakeholders was access to clinical data, such as laboratory and radiology reports, clinical notes, imaging worklists, and other CCDs. Access to this important clinical information supported their ability to coordinate care and support care transitions, thereby helping reduce the need for duplicate diagnostic tests in screening activities.

Unanticipated Opportunities: Transitioning to Post-HITECH and Investing in Digital Health

HITECH to MES Funding Transition

The Centers for Medicare & Medicaid Services (CMS) has been providing financial support for Health IT and HIE programs to State Medicaid Agencies (SMAs). Since the mid-2010s, DHCF has requested and received Health Information Technology for Economic and Clinical Health (HITECH) funding from CMS through 2021 to support Health IT adoption and HIE interoperability projects for Medicaid providers. Additional information about HITECH funds can be found in _Appendix E of the 2018 SMHP._

As many HITECH programs sunset in 2021, states were given the option to continue federal financial participation for HIE activities that support the state's Medicaid Enterprise System (MES). DHCF decided to begin the process of transitioning HITECH functionality of several operational components to the State's Medicaid Management Information System (MMIS), in accordance with the provisions of 45 CFR § 95.611 and the State Medicaid Manual (SMM) Part 11. Beginning in late 2020, DHCF and its partners undertook an extensive analysis of the opportunity to ensure a seamless transition of HITECH to MES funding to support operations and maintenance of DC HIE capabilities.

In March 2021, DHCF requested certification of three components of DC HIE technology: 1) Encounter Notification Services (ENS); 2) Image Exchange; and 3) Provider Directory. CMS then conducted a review of the DC HIE documentation, received a regional (DC, MD, and WV) demonstration of shared HIE services, and held discussions with DHCF and DC HIE staff. In May 2021, the District become the first among a handful of states to receive certification of its HIE systems. CMS MES Certification formally acknowledges ENS, Image Exchange, and Provider Directory as components of the District's MES.

Concurrently, DHCF staff from the Digital Health division engaged with the District's consultants responsible for developing DHCF's MITA (Medicaid Information Technology Architecture) Single State Assessment to consider the range of business processes most closely aligned with the agency's MES strategy. Among the agency's MITA goals, several rely on the DC HIE, including the intent to:

» Support of whole-person care, coordinating with public health and other partners to integrate data sources for the measurement of health outcomes and provider performance within the Medicaid community; and

» Improve DHCF, provider, and beneficiary experience through better communication initiatives, improved tools, documented procedures, and training.

ARPA Home and Community-Based Services (HCBS) Funding

The American Rescue Plan Act (ARPA) of 2021 was signed into law on March 11, 2021. Section 9817 of ARPA provides states with a temporary ten percentage point increase to the federal medical assistance percentage (FMAP) for Medicaid Home and Community-Based Services (HCBS). On August 31, 2021, DHCF received official CMS approval for a temporary 10% increase for home- and community-based services (HCBS). The District received a total of $9,440,000 to implement two technical assistance programs in support of home- and community-based services providers: (1) HCBS Promoting Interoperability Program Technical Assistance; and (2) HCBS Telehealth Technical Assistance.

The program will enable the District to deliver tailored technical assistance that is more inclusive of HCBS providers. These providers have historically been unable to participate in the PI Program, which encourages the meaningful use and interoperability of certified EHR systems, as well as the DC Health Information Exchange (HIE) Connectivity Program, which provides education, training, and enrollment to the DC HIE.

DHCF will deliver these two new technical assistance programs in close coordination with District partners at the Department of Behavioral Health (DBH) and the Department on Disability Services (DDS).

Investments in Infrastructure and Technical Assistance have Improved Access – Yet There's Still a Need to Incentivize Consistent Use

The Health IT and HIE Framework has been useful to characterize some performance aspects of the infrastructure. As demonstrated in the evaluation results, the DC HIE is now a stable, sustainable network with committed partners and tools that are widely adopted across the care continuum. Agency partners have commented that the DC HIE provides the most comprehensive view of individuals.

Since 2018, projects and programs have been designed, developed, and implemented specifically to help meet ten broad strategic goals for Health IT and HIE in the District. These ten strategic goals seek to fulfill a vision of Health IT and HIE that enables health system connections and improved outcomes because of widespread adoption and consistent use. *Appendix I* presents these strategic goals and denotes which aspect of the Evaluation Framework each goal is intended to support and the status of our meeting them. Overall, the District has made demonstrable or incremental progress toward these broad goals. *Appendix J* further assesses the utilization and impact of each of the six DC HIE Core Capabilities, which support priority areas outlined in the 2018 SMHP, and outlines stakeholder priorities for enhancements.

The District has witnessed an accelerated growth in HIE connectivity and use of technology since 2018. It also responded to the COVID-19 public health crisis in a timely manner and quickly identified ways to shift resources to support digital health and the health system's focus to controlling the pandemic. Challenges remain and some health system stakeholder needs must still be met. Greater standardization of data flowing into the DC HIE and promoting the timely exchange of information is needed. Support for more education, training, and technical assistance to promote the use of the DC HIE, including resources to support the development of practice-level guidelines, protocols, and tools is needed. Lastly, there is a need for greater financial support to ensure that providers, particularly those who are small and/or under resourced, have the tools and knowledge to participate in the DC HIE. Upcoming initiatives

through ARPA funding described earlier in this section will support the delivery of tailored technical assistance that is inclusive of such providers.

In the next phase of its work, the District must continue to support and incentivize use of digital health tools in a more sophisticated way, and more consistently. The next section presents a set of recommendations for DHCF's consideration. These recommendations were largely drawn from the interviews and focus groups that were conducted as part of the stakeholder engagement effort for this project, as well as a synthesis of strategies to address needs and challenges identified in Roadmap evaluation.

Section 5

Recommendations

What's Next? – Recommendations for Digital Health in the District

The following seven recommendations were derived largely from the interviews and focus groups that were conducted as part of the stakeholder engagement effort for this project. Most of the recommendations flow directly from interview and focus group participants themselves and reflect what they believed needed to happen to address various challenges, leverage current assets, or strengthen the DC HIE. Others were derived by JSI after reviewing and analyzing the breadth of findings from this effort.

The primary recommendations for DHCF and the District are as follows:

1. Develop and Publish a Bi-Annual Evaluation and Strategic Plan, including Metrics to Effectively Assess Digital Health Impact
2. Broaden and Deepen Investment in the DC HIE through Interagency Collaboration to Address Technology Gaps, Build Digital Health Capacity, and Support the Long-Term Sustainability of the DC HIE
3. Invest in District-wide Population Health Analytics, including Access to Priority Data
4. Engage Community-Based Organizations and Facilitate Partnerships with Clinical Providers to Expand Access and Use of Social Needs Information in the DC HIE
5. Enhance the DC HIE Consumer Experience, for both Providers and Patients
6. Improve Education and Communication to Increase Awareness of the DC HIE
7. Develop and Promote Payment Models and Provider Incentives to Drive Adoption and Use of the DC HIE

Recommendation 1: Develop Metrics to Effectively Assess Digital Health Impact and Publish Bi-Annual Evaluation and Strategic Plan

Continue to produce a state Health IT (Digital Health) plan every two to three years to gain stakeholder feedback on the state's Medicaid progress and strategy including goals, objectives, tasks/activities, metrics, responsibility, and key partners across a broad range of strategic and operational domains. This is viewed as particularly important as digital health, including telehealth services, eConsult, remote patient monitoring and other new technologies emerge. Though the initial HITECH act requirement to publish a strategic plan has technically concluded, stakeholders appreciate the opportunity to provide input and direction for these important District and Federal investments. The District will also need to engage stakeholders to help develop a comprehensive set of measures to more effectively assess how health information

aids decision-making and support analytics and quality measurement and generates changes in health outcomes, care delivery, and user satisfaction.

Key Elements

» The strategic plan should articulate and clarify the vision and goals of the DC HIE and to support governance, facilitate reporting of progress, and drive overall accountability.

» The strategic plan should be comprehensive including specific goals across the breadth of opportunities for achievement, including governance, collaboration/engagement, adoption/access, exchange/use, and health care improvements (health outcomes and community health status)

» DHCF and DC HIE stakeholders will need to engage national experts to develop and implement non-burdensome measures that correspond with the Health IT and HIE Evaluation Framework's "Use" and "Improve" domains, intended to monitor the dependence of care delivery improvement on health IT and health information exchange.

Recommendation 2: Broaden and Deepen Investment in the DC HIE through Interagency Collaboration to Address Technology Gaps, Build Digital Health Capacity, and Support the Long-Term Sustainability of the DC HIE.

Explore new opportunities for greater financial investments in the DC HIE to support implementation and drive adoption/access, exchange/use, and improved health.

Key Elements

Stakeholders suggest that the efforts to stand-up and implement the DC HIE require continued support and funding. If the DC HIE is going to meet expectations with respect to adoption, exchange and use in the timeframes that have been set then additional funding is needed and should be distributed across all stakeholders, including investments to:

» Strengthen governance and accountability by enhancing the support provided to various structures, such as the DC HIE Policy Board or staffing at DHCF

» Implement refinements to the DC HIE itself, such as enhancements to improve usability of existing tools (e.g., secure messaging, population health tools, close-loop referral tools) and efforts to support more effective access through certified EHRs

» Promote adoption/access, exchange, and use. (e.g., tailored TA, communication/promotional campaigns, etc.) by providers not actively using the DC HIE tools

» Support certain providers to develop their internal HIT infrastructure and other internal capacities to facilitate HIE.

» Leverage diverse funding streams across the District's health and human services cluster to design, develop, implement, and sustain HIE.

» Collaborate across District agencies to address technology gaps and build District-wide digital health capacity. Ensure alignment with the recommendations and future directions in DC Health's *Covid-19 Pandemic Health and Health Care Recovery Report,* which presents a framework for addressing post-pandemic needs in five functional areas critical to address the health needs of District residents, including health information technology.

» There are many public programs/initiatives that: 1) Interact with DC residents and would benefit from accessing client information through the DC HIE, and 2) gather information on their clients that could be shared with other public and private service providers. For example, integrations with the following agencies were considered priority opportunities to build capacity and value of the DC HIE:

   » Public school system – school health center utilization data; school participation and absenteeism data

   » Department of Human Services – SNAP/TANF/Rental Assistance eligibility and enrollment; Intensive case management services for marginalized youth, shelter utilization and participation in the Homeless Services Programs

   » Department of Health – Refinements to current efforts to streamline data sharing with the DC HIE, including immunization / COVID-19 information; prenatal and infant screening; chronic disease registry information, advance care planning (electronic advance directives/Medical Order for Scope and Treatment) etc.

   » DC Department of Corrections – Re-entry services program, prison health, SUD, mental health, and women's services programs

Recommendation 3: Invest in District-Wide Population Health Analytics, including access to Priority Data

Increase investment in the creation of population health analytic tools to support provider's ability to manage their patient panels and clarify community need. Stakeholders also identified key data priorities they would like to see integrated within the DC HIE.

Key Elements

» Tailored tools could be developed that allow providers to explore specific areas of inquiry, potentially using a measurement-based care model. For example, similar to the maternal health filter, respondents expressed interest in a diabetes dashboard to track diabetes control, compliance with medications, and other metrics.

» Priority data identified by stakeholders included data on: 1) Eligibility/enrollment in public sector programs (e.g., Medicaid, SNAP/TANF, rental assistance, intensive case management, etc.); 2) Chronic disease status to support shared disease registries; and

3) Social determinants of health, particularly for those who experience challenges in this regard, including information related to housing, food insecurity/nutrition, job training, transportation, trauma/violence, etc.).

» Analytic tools could be developed and made available to all providers that facilitate access to standard metrics such as total cost of care, frequency of emergency department (ED) utilization, frequency of readmission, incidence of chronic and complex conditions.

Recommendation 4: Engage Community-Based Organizations and Facilitate Partnerships with Clinical Providers to Expand Access and Use of Social Needs in the DC HIE

Expand support for the District's community-based organizations (CBOs) to engage with the DC HIE. Acknowledging the importance of social needs identified in the 2018 Health Equity Report – particularly housing and nutrition – the DC HIE must include as broad an array of health-related needs and resources, as feasible. The DC HIE should also enhance its commitment to facilitating partnership between clinical providers and the CBOs who provide services to address the underlying social needs of some of the District's most vulnerable residents. Specifically, community members called for the DC HIE to explore what use cases would be most beneficial, how the DC HIE processes and functionality needs to be refined to adapt to CBOs, and what information would be most useful to CBOs and the other participants of the DC HIE. Expand Board participation to include CBOs and other less-well represented groups, including behavioral health and long-term care.

Key Elements

» Develop refinements to the DC HIE CoRIE functionality that promote access and engagement in the DC HIE among CBOs / social service agencies.

» Explore what new use cases would be most beneficial for CBOs, the provider network, and Medicaid beneficiaries to integrate social needs data, drive their interest, and maximize value.

» Address ways the DC HIE processes and functionality needs to be refined to adapt to CBOs.

» DHCF should clarify that all providers who submit claims to the Medicaid Agency (DHCF) are considered "covered entities" under the administrative simplification provisions of the Health Information Privacy and Accountability Act (HIPAA) and that business associates of covered entities may also be bound to specific provisions.

» Further diversify the Boards and Committees across all of the various governance structures to ensure that the full breadth of partners is represented, particularly those that are representing new and emerging use cases or prioritized provider segments.

» Fund pilot projects to test use cases and specific value-added collaborations between clinical providers and non-clinical CBOs/social services agencies (e.g., Hospital EDs and homeless services agencies, primary care providers and food banks).

Recommendation 5: Enhance the DC HIE Consumer Experience, for Both Providers and Patients

Explore design and technological enhancements to the DC HIE that either enhance patient quality and consumer experience or improve practice operation or reduce provider burden to promote access and use.

Key Elements

» Conduct usability and/or user-experience testing for all DC HIE services to ensure they are user-friendly and person-centered.

» Ensure HIE, provider and payer compliance with the CMS Patient Access Rule and other regulations.

» Incorporate direct messaging or secure email for providers.

» Facilitate the ability for providers to more easily download and/or print certain aspects of the patient record.

» Facilitate patient access with the ability to view, download, transmit certain aspects of their medical record.

» Develop enhanced population health management functions that allow providers to query their patient panels and/or their service area residents to facilitate outreach, improve patient outcomes, and/or drive community health improvement.

» Require all DHCF-funded digital health technical assistance programs to implement elements of the DC Digital Health Core Competencies, which comprise of three main priority areas: 1) Digital Health Proficiency to Support Patient-Centered Care; 2) Health and Health System Knowledge; and 3) Leadership and Management Skills—each with its own set of sub-competencies and objectives. *Appendix K* provides additional information on the DC Digital Health Core Competencies, which were established in February 2022.

Recommendation 6: Improve Education and Communications to Increase Awareness and Use of the DC HIE

Implement targeted, multi-faceted communications, promotional efforts, and technical assistance to ensure provider awareness, access, and appropriate use of the DC HIE.

Key Elements

» Develop evidence-informed practice guidelines, protocols, and tools that support the use of the DC HIE to exchange information. This guidance should focus on specific use

cases, be tailored to the practice-level to the extent possible, and geared to clarifying the business case, maximizing value of the HIE for practices, and reducing provider burden and barriers to use.

» Continue partnering with the HIE Policy Board's Stakeholder Engagement Subcommittee to promote and facilitate engagement with the DC HIE.

» Develop promotional content, tailored to different provider groups, clarifying the use and the impact that these use cases have on improving the quality of patient care, reducing provider burden, and enhancing practice operations/workflows and practice sustainability.

» Engage healthcare professional organizations as key partners to promote access (e.g., DCPCA, DCBHA, DCHA, DC Medical Society).

» Recruit DC HIE champions who can support the creation and implementation of the communications and promotional efforts.

» Continue to explore ways to facilitate the adoption of certified EHRs that have enhancement functionality that promote HIE, including the ability embed the DC HIE/DC HIE in their main EHR portal.

Recommendation 7: Develop and Promote Payment Models and Provider Incentives to Drive Adoption and Use of the DC HIE

Continue to promote provider-based incentives to promote the DC HIE (access, exchange. use, and improve) to facilitate outreach/follow-up, care coordination, and care transitions.

Key Elements

» Develop enhanced payment mechanisms that incentivize providers to use the DC HIE to support initiatives that enhance patient care with respect to evidence-based outreach, screening, assessment, and treatment regimens, similar to those provided to primary care providers to incent follow-up after discharge from the hospital.

» Explicitly link provision of technical assistance (TA) and training using the HIE to accountability for both those providing the technical assistance and those providers receiving technical assistance. Examples may include:

» Link the TA services promoting access and use to incentives (e.g., direct financial incentives, Grant support for EHR upgrades, opportunities for enhanced payment through DHCF/MCO billing, and enhanced TA) to facilitate access, adoption and the actual use of the DC HIE.

» Identify specific provider types (e.g., behavioral health, CBOs, small, independent ambulatory care providers) and enhance the TA services and incentives that are provided to these prioritized providers.

» Explore additional opportunities to incentivize participation in the DC HIE through the DHCF / MCO contracts and MCO/Provider payment and contracting.

» Build on and refine efforts of the HIE Policy Board's Stakeholder Engagement Subcommittee to incentivize more meaningful participation in the DC HIE.

Appendices

Appendix A: Stakeholder Health IT Needs Assessment and Analysis Methodology

A.1 Methodology

In early 2021, District of Columbia Department of Health Care Finance (DHCF) conducted a comprehensive assessment of District stakeholders' health IT needs, which included clinical stakeholders across the spectrum of care: physical health, behavioral health, and Long Term Services and Supports (LTSS) providers, and non-clinical care partners, such as community organizations providing services that support residents' ability to stay healthy. This work was further enhanced by the outreach and engagement efforts conducted as part of the SMHP Update from June through August 2021. More specifically, the SMHP Update process gathered insights and perspectives through nearly 50 stakeholder interviews and 11 focus groups involving a total of 157 participants.

A full list of organizations that participated in these interviews are included in *Appendix A.4.*

DHCF with the support of JSI designed these conversations to assess stakeholder perspectives on the current role of health IT within stakeholder organizations, and the potential role Health IT and HIE can play in meeting their missions and goals. DHCF's community engagement efforts combined with the work of the SMHP Update conducted by JSI will collectively support the District's HIE priorities, guide investment, and drive ongoing efforts to: 1) refine the DC HIE, 2) promote DC HIE access, 3) facilitate secure exchange of patient information across the provider continuum, and 4) empower providers to use the data to improve care delivery.

Stakeholder categories for interviews and focus groups included

Consumer/Residents/Patients
Behavioral Health Care
Hospitals
Ambulatory Care
Post-Acute Care
Social services
Health Plans/Payers
Public Agencies

The outreach questions (*Table A.1*) sought perspectives on the current state of HIE and stakeholder priorities for HIE services.

Table A.1: Health IT and HIE Stakeholder Outreach Assessment Topics and Objectives

Current State of HIE	Ideal Future State of HIE	Immediate Needs
Where does digital health (health IT and health information exchange) fit into your organization's current strategic goals and priorities?	What are the District's health system priorities for the next five years?	What health information do you want to see today?
What are existing data exchange activities and partners?	Do you have any organizational "pain points" that could potentially be addressed by better data sharing across the District?	What IT infrastructure needs to be in place to meet your future goals?
What are examples of where HIE has added value and enhanced person-centered care?	What are the greatest opportunities for HIE to help your organization?	What technical assistance do you need to be successful?
What are the common barriers to adopting Health IT and engaging in HIE?	What barriers do you anticipate to expanding HIE or implementing new technology in your organization?	
How has COVID-19 impacted your organization's use of Health IT/HIE?	Should the District continue to focus on the priority uses in the 2018 SMHP or are there other priorities that should be considered?	
What Health IT/HIE activities is your organization doing now that it was not doing in 2018?		

A.2 Stakeholder Findings

Consumers, Residents, and Patients

In Consumers, Residents, and Patients' Own Words

"Sharing information between providers who I know isn't a concern as long as it is on an as needed basis."

"I would want to be asked permission each time my information was to be shared between providers."

"Sharing information through the 'HIE' reduces a lot of duplicative paperwork for doctors and also the potential for them to make errors."

"There ought to be a system in place so that when you are referred to a specialist, they know your medical history and any information relevant to the referral. It is better to get this information directly from a PCP than rely on a patient to remember and communicate it."

PERSPECTIVES

- Patients understand the importance of sharing health information between providers, especially patient history, prior utilization, follow-up plans, medications, labs, and other procedural information.
- Patients value the DC HIE as a mechanism that prevents them from having to recount their health and social information at every visit.
- Providers should have patient information available to them through the DC HIE, but it is also important that patients can confirm the content that is in the HIE and to "tell them what happened and what works for them" during visits. "Providers should not always rely entirely on what is in the patient's record."
- Patients advocated strongly for a process that would allow them to "grant permission" or consent to the sharing of their information between providers.
  - There were differences in opinion regarding how often consent needed to be given, with some indicating that it should be a one-time occurrence and others that it should be given for each potential instance for exchange.
- Participants acknowledged that information on social factors (e.g., housing, financial security, access to food, etc.) was a critical aspect to health and should be shared between providers as part of a patient's health record, but felt that this information should still be shared on a "need-to-know" basis in order to protect a patient's privacy.
  - There was agreement that some patients might be reluctant to share information on social factors (e.g., income and housing status) and believed that providers needed to explore carefully how to capture this information and how to respond to those who detailed challenges so as not deter people from engaging in care.

OPPORTUNITIES

- A number of community stakeholders suggested that the DC HIE should provide a patient portal to allow patients/residents access to the information in their health records.
  - This would support patient engagement and improve care coordination. Some also thought it would promote provider use of the DC HIE as it would foster expectations that patient information be uploaded and shared on a regular, timely basis.

Behavioral Health Care

In Behavioral Health Care Providers' Own Words

"Overall, I think the technological capacity of behavioral health providers is over-estimated. A large proportion of existing behavioral health providers in DC do not have the resources necessary (hardware and software tools) or the expertise to engage in the DC HIE. Improvement in this regard will require substantial, sustained support overtime."

"Patients with behavioral health issues are not always reliable sources of information regarding their prior service utilization, medications prescribed, diagnoses, health status, and/or their general health history. The DC HIE is an indispensable tool to gather this information, at least when the record is available and complete. Without it, I am often 'working in the blind' and am forced to duplicate tests"

"There is a lack of appreciation for the amount of time, effort, and resources it takes to effectively transition and coordinate a patient's care from one provider to another. Many organizations simply do not have the resources they need to do what they know is best for their patient when it comes to care coordination and making referrals. This is especially true for behavioral health providers and other segments of the health system that are typically underfunded, have high staff turnover, and struggle to sustain themselves financially."

"By accessing the DC HIE and doing a deeper dive into a patient's circumstances, we've been able to be more effective and getting patients into housing and ensuring that they have access to needed social services. We never fully appreciated how medically and socially vulnerable some of our patients were."

"The consent management system is an exciting opportunity and one of the most novel and promising approaches I've seen."

PERSPECTIVE

- There is broad consensus among behavioral health providers regarding the importance of the DC HIE and the need for a robust, safe, secure, seamless system that allows service providers of all types to share mental health, substance use, and other health-related information (e.g., housing status, food and financial insecurity information) across different service providers, sectors and care settings.
- Most behavioral health providers express enthusiasm for DC HIE's proposed consent management system as a way to more easily meet 42 CFR Part 2 requirements and manage the complexities of patient consent.
  - o Clear belief that the DC HIE and the proposed consent management system are critical to coordinating care, improving quality, reducing cost, promoting engagement, and addressing provider and patient burden.
  - o Some providers, particularly frontline workers, are concerned about the challenges of implementing the consent management system effectively, so as to ensure privacy and the security of a patient's record. Success will depend on ensuring that frontline staff fully understand 42 CFR Part 2 (including its revisions) and believe that the DC HIE and its policies and practices protect privacy and inappropriate access.
- Most behavioral health providers in the District have very limited staff capacity, time, or resources to dedicate to developing more robust Health IT and HIE systems or internal practices.
  - o Historically, many providers have been extremely challenged in dealing with the Department of Behavioral Health's data systems (e.g., DataWiTS and ICAMS) and with their own internal systems that they do not have the bandwidth to manage another Health IT/HIE challenge.

- Some of those who participated in the engagement efforts believed that there was a lack of awareness of the challenges that behavioral health and non-medical, social service providers face with respect to participating in the DC HIE.
- A few stakeholders believe that the DC HIE has been developed primarily to meet the needs of medical providers, which limits access, adoption, and use among behavioral health, social service, and other non-medical providers.
  - Many of these stakeholders believe that greater efforts need to be made to ensure that behavioral health and social service providers can participate more fully in the development and implementation of the DC HIE.
- Some stakeholders believe that there is a lack of appreciation and understanding regarding the important role that behavioral health, social service, and other non-medical providers play in the healthcare system. These stakeholders reflected that the rollout of the DC HIE and how it has been implemented has in some ways reinforced or fueled this sentiment.
- Some stakeholders believe that behavioral health providers are largely unprepared to meet the electronic standard portions of the Office of the National Coordinator of Health Information (ONC) Open Notes rule. These stakeholders believe that extensive training, technical assistance, and implementation support will be required to meet these standards, including guidance for provider organizations in their selection of new electronic health records (EHRs) as the Department of Behavioral Health (DBH) exits from support for DataWiTS.

ADOPTION AND USE

- Most of the large, leading behavioral health providers have access to the DC HIE but few are using it to its full potential.
- Behavioral health organizations most commonly use the Encounter Notification Service (ENS) feed, discharge summaries, and COVID-19 information.
- Consistent with other stakeholder groups, behavioral health providers reflected that the DC HIE needs to be easy to access, simple to use, and have relevant and complete information if providers are going to consistently use it in their day-to-day practices.
- Behavioral health providers challenges with respect to using the DC HIE on a regular basis are primarily related to infrastructure costs, limited IT skills and capacity, and staffing constraints.
- Current payment structures/rates for behavioral health providers do not allow or incentivize providers to develop the internal systems, protocols, and guidelines necessary to fully participate and use the DC HIE.
  - DHCF should develop enhanced payment arrangements for providers who are able to meet various HIT/HIE milestones (tied to various levels of EHR/HIE adoption).
  - Enhanced payments could potentially be tied to improved quality measures that are impacted by meaningful use of HIE in addition to enhanced payment of those who meet various HIE/HIT milestones.
- Patients are referred to behavioral health providers, but providers are often unable to access their patient's clinical records. Issues of consent (42 CFR Part 2), the timeliness of the exchange, lack of clear workflows/protocols/guidelines, and the completeness of the information in the DC HIE are the leading challenges.
- There is a general belief that DC HIE use cases, infrastructure, processes, the information shared, and the analytic tools that are available through the DC HIE need are not well tailored to the needs and contexts of behavioral health providers, which hinders adoption and use.

NEEDS AND OPPORTUNITIES

- The benefits of the DC HIE need to be better advertised, particularly for providers working with

high utilizers of hospital/emergency services (i.e. Assertive Community Treatment (ACT) teams). Many behavioral health providers are not aware of how it could improve quality, promote care coordination, and improve financial reimbursements. Updating DC HIE use cases to explicitly address behavioral health needs is one opportunity in this direction.

- Training and technical assistance is critical to maximizing participation and use. Important to train leadership and administrative staff but even more important to train behavioral health staff who are providing services and using the DC HIE.
- Training must be tailored to behavioral health providers. It must be comprehensive in nature covering different topics and adapted to staff with different levels of experience or capability with IT. Training must be provided on an on-going basis, including during on-boarding, in different modes and formats.
- Behavioral health providers would greatly benefit from more robust, tailored analytic/reporting tools to drive outreach, care management and other population health management and service planning activities.
- Providers need clarity on the impact of 42 CFR Part 2 and information exchange before they can fully participate in HIE.
- The DC HIE should send automated alerts when patients are discharged rather than requiring staff to log into the system to see notifications.

Hospitals

In Hospitals' Own Words

"[HIE] is the drumbeat of ensuring connection and increasing functionality."

"Practices and providers are interested and motivated to use the DC HIE. It allows them to provide quality care. It is a matter of how to find it, where to find it, and what is available."

There is a great deal of variation across a hospital's internal network of outpatient, ambulatory care providers with respect to if and how they use the DC HIE. Some practices use it extensively, others not at all. Most use the DC HIE to some extent but there is substantial room for improvement."

"The payer policies and models are trending toward population health and value based models so how can we get ahead of it and develop the infrastructure we need to support those policies, service delivery approaches and models."

"Adoption - whether it is an EHR or use of HIE data - is all about workflow, ease of access, and the ability to easily find the information you need.

Too often, once I am in the DC HIE and am able to find my patient's record, it is like a fire hose of information. I find myself 'hunting and pecking' for the information I need."

"I'm not sure everyone recognizes what CRISP is, what it can do, and where you need to go to find the information. I don't think that everyone is aware of all of the tools available to them through CRISP. I think that people get into habits and don't necessarily take advantage of all of the tools and know about how to really incorporate and use tools to simplify and improve their workflows. They have a certain understanding of what is there, but there is a lot more that people could know."

PERSPECTIVES

- Hospitals have been instrumental in the creation of the DC HIE with respect to financing, governance, technical expertise, implementation, and the uploading and downloading of patient information.
- All the hospitals have adopted the DC HIE and fully embrace the importance of HIE as central to their success and achieving the quadruple aim.
- Hospitals are challenged by competing internal Health IT/HIE priorities with respect to investments of staff time, organizational resources, and strategic imperatives. This is particularly true for large, integrated, regional health systems given the breadth, complexity of their Health IT/HIE landscape and the fact that they have extensive Health IT/HIE/EHR systems issues to address across their own networks.
- Those that were engaged in the SMHP Update effort believed that there was broad awareness and use of the DC HIE across different types of hospital service providers (e.g., MDs, APNs, RNs, case managers) and across different hospital settings (inpatient, emergency department, ambulatory care, social service). However, there was a broad understanding that there was significant room for improvement.

ADOPTION AND USE

- Hospitals use the full breadth of DC HIE tools. Most common use is the ENS feed, followed by accessing continuity of care documents (e.g., visit summaries, discharge plans, lab tests, imaging), clarifying COVID test or vaccination status, and using the DC HIE to inform outreach and case management efforts. This information is often accessed at the point of care, and

particularly important for new or acute clients.

- Hospitals are the by far the leading provider group with respect to uploading information to the DC HIE.
- With respect to drawing information down from DC HIE, use is dictated by:
  - Leadership commitment and the ability to invest in the resources needed to promote and drive its use (e.g., HIT staff, training/development resources, EHR investments, guideline/protocol development, etc.).
  - Guidelines, protocols, and tools to promote use and weave the DC HIE into provider practice patterns.
  - Staff turnover that leads to loss of expertise, experience, and internal capacity
  - HIE champions that model and motivate adoption/use.
  - Ease of access with respect to how providers sign on and gain access to the DC HIE. Clear preference for the DC HIE to be fully integrated within the hospital's EHR.
  - Ease of access with respect to how the information in the portal is organized, categorized, and made available to providers at the point of care.
  - Data integrity and standardization.
  - Robust training and technical assistance (on-going, comprehensive, multi-facetted resource, including during staff on-boarding process.

NEEDS AND OPPORTUNITIES

- Need to continue to foster data quality, integrity and standardization, including the timeliness of information sharing in order to promote the use of the DC HIE.
- The DC HIE need to explore how the DC HIE is going to integrate with other HIE's in the region, particularly given that many of DC's hospitals are part of large, regional networks and the fact that many of the patients that are served by DC's hospitals live outside the District.
- Need to continue to explore how to:
  - Promote the use of the DC HIE within hospital outpatient and ambulatory care networks.
  - Make the DC HIE as easy to access and navigate as possible, with tools or systems that allow providers to find the information they need quickly.
  - Provide universal HIE training, including robust training during on-boarding, including training on specific use cases and associated guidelines, protocols, and workflows.
  - Increase data quality and consistency – including ER fields that capture chief complaint or reason for visit – as well as actively manage and reconcile data discrepancies, such as mismatched patients.
  - Facilitate patient access and engagement with their data and health and how they interact with clinicians and other participants through the DC.

Long-term and Post-Acute Care Facilities
(nursing homes, skilled nursing facilities, rehabilitation facilities)

In Post-Acute Care's Own Words

"In many situations patients are leaving the hospital with paper copies of their records or relying on fax machine transmission to facilitate care transitions to the post-acute setting."

"We currently send the continuity of care documents and admission, discharge, and transfer notifications to the DC HIE. We are working hard with the DC HIE to see if we can send them additional information for referral purposes and on getting the data that we are missing."

PERSPECTIVES

- Long-term and post-acute care providers have a clear understanding regarding the importance of the DC HIE when it comes to patient safety, care coordination, care transitions, reducing inappropriate hospital readmissions, and the quality of patient care.
- Despite this understanding, post-acute providers use the DC HIE in a very limited way and rely on outdated systems to support transitions and manage the flow of information.
- Post-acute facilities that operate within networks may have systems to foster communication across their network but are still engaged in the DC HIE in a very limited way.
- It is critical that hospitals upload discharge summaries to the DC HIE immediately upon discharge, so that it is available to post-acute care providers in a timely manner. If it's not done immediately, it cannot be used to guide the transition.
- It takes time for people to adopt new technologies and workflows. Education and training must occur on a regular, on-going basis. "Training cannot be a one-day event."
- COVID-19 did increase provider use of the DC HIE in post-acute settings because of the ability to check or confirm a patient's COVID status, but did not impact day-to-day processes, such as referrals and care transitions.
- There was a belief that some providers were reluctant to embrace the DC HIE due to concerns for patient privacy, lack of understanding of 42 CFR Part 2, and concerns related to their legal liability.

ADOPTION AND USE

- Post-acute care providers do not fully appreciate how the DC HIE can be used to improve patient quality, streamline operations, reduce costs, and reduce provider burden.
- Most long-term and post-acute provider organizations have limited Health IT/HIE capacity. Their staff have limited computer literacy. As a result, it will be even more important that the DC HIE be easy to access, easy to navigate, and that there are clear guidelines and protocols established.
- Need to continue to develop, agree on, and promote the use of a detailed, standardized discharge summaries, as well as guidelines with respect to standardizing progress notes, care plans, and medication lists. Standardized protocols and tools would serve to optimize the use of the DC HIE by both hospital and post-acute care providers with respect to care transitions.

NEEDS AND OPPORTUNITIES

- Post-acute providers should be engaged in discussions about new DC HIE use cases. Education and standardized guidance on what information is shared, how it is shared, and how it can be used to promote care transitions and coordination should also be provided.
- Hospital and post-acute providers need to be incented to use the DC HIE to facilitate effective, seamless care transitions, possibly as part of efforts to reduce inappropriate hospital readmissions.
  - Hospitals should be incentivized to upload patient information immediately upon discharge.

Ambulatory Care

In Ambulatory Care's Own Words

"Many of my patients struggle to accurately self-report on their prior health issues and the services that they have received. In this regard, the DC HIE is often a critical source of information that helps me to piece together a patient's health challenges and history with the health system"

"HIE adoption and use is a no brainer from a business perspective because transitions of care visits reimburse at higher rates than regular medical visits."

"In order for the DC HIE to be used by service providers to its greatest extent, access needs to be seamless, preferably embedded directly within a provider's EHR. Any extra step is going to cut into the already limited time that providers have to serve their patients."

"A lot of practices struggle with integrating HIE and creating a workflow that allows all staff to operate at the highest level of their training. I facilitate that connection to the DC HIE by creating applicable use cases that organizations see the value of integrating into their workflow."

PERSPECTIVES

- Many outpatient providers say that the biggest challenge is ensuring easy, seamless access to the DC HIE so that individual practitioners can draw on the DC HIE at the point of care. Alternatively, practices have implemented workarounds with other staff members in the practice who funnel this information to providers before the visit.
  - o Accessing the DC HIE can be particularly challenging for solo or small practices, private practices that have limited staff that can assist or support the clinical providers to access the DC HIE.
- For many providers, accessing the DC HIE outside of their EHR presents a significant burden that it limits use.
- Practitioners are not always able to find the information they are looking for in a patient's record in a timely and consistent manner. There is at times too much information and at other times too little information. This inconsistency is challenging and tends to discourage access.
  - o The DC HIE is helpful if you are looking for a specific piece of information on a patient, but it is not designed in a way that is conducive to getting the full picture.
- The DC HIE can be overwhelming for smaller practices with limited Health IT resources and/or staff with experience or expertise.
- Identifying HIE champions within practices who can model and promote specific HIE use cases has been shown to be an effective way of promoting the use of HIE. This is particularly true for practices that have a large number of "legacy" providers with limited experience and expertise with Health IT.
- Training and technical assistance is critical to maximizing use, partly to support accessing and navigating the system, but even more for reinforcing how the DC HIE can be used to enhance the quality of care, reduce provider burden, increase efficiency, and increase practice revenues.

ADOPTION AND USE

- Most common use is the ENS feed followed by accessing continuity of care documents (e.g., visit summaries, discharge plans, lab tests, imaging).
- Key factors or tactics that promote DC HIE adoption and use are:
  - o Streamlining access, preferably through single-sign on and full integrated systems within the provider's EHR.
  - o Careful thought and training with respect to specific, practice-based workflows, guidelines, and protocols that clarify and standardize how to use the DC HIE. Practices who identify and promote the use of the DC HIE for a specific set of use cases and/or

patient circumstances and promote these uses with their practitioners are more successful.

- o Appointing dedicated staff, such as medical assistants, care navigators/coordinators, or community health workers, to access the DC HIE prior to patient appointments and funnel information to the clinicians meeting with patients can be an efficient strategy. For example, some practices have dedicated staff who monitor the ENS feed and help promote appropriate follow-up after hospital discharge.
- o Identifying and tasking DC HIE 'champions' in practice settings to model the use of the DC HIE, promote its use, and provide technical assistance when appropriate.
- o Reporting information gathered through the DC HIE's ENS feed during morning huddles.
- o Extensive training and technical assistance in multiple formats provided during on-boarding activities with new staff and periodically as part of regular provider education and workforce development activities.

NEEDS AND OPPORTUNITIES

- Need to show how the DC HIE can be used to streamline operations, increase patient volume, and support efficient, sustainable operations (e.g., with respect to ambulatory care follow-up, care transitions, etc.).
- Need to continue to foster data quality, integrity and standardization, including the timeliness of information sharing in order to promote the use of the DC HIE.
- Train providers to use the DC HIE for specific use cases and clearly show the tangible benefits of accessing and using the HIE.
- Need to continue to develop and promote incentives to using (not just adopting) the DC HIE to facilitate care coordination, care transitions, and follow-up.

Social Services

In Social Services' Own Words

"If a patient receives care outside of my organization or my network, it is an absolute black box. Patients will provide information on their past care and try to explain the results of their referrals, but we need to know what the service providers say happened too. This information is important, and it is very frustrating that I can't accurately piece together the health history and the care that has been provided. It requires a lot of duplication of effort, and I feel that I am often recreating the wheel."

"People aren't using consistent tools to gather social determinants of health information across organizations. It is hard to capture this information without a mandated screener, and it seems we are a ways away from consensus."

"I sometimes wonder if some stakeholders that are part of the DC HIE fully appreciate the challenges and the resource constraints that many social service, non-clinical organizations face. Most social service organizations have limited or no ability to invest in HIT and will need support to comply with DHCF requirements and policy changes."

"There needs to be a big shift in how social service organizations respond to HIPAA, especially with recent and pending federal statutory and regulatory changes. Either we're going to shift to considering those organizations as "HIPAA covered" when they participate in HIE, which will require big changes for them, or we're going to have a separate path for social service organizations, which may make some traditionally HIPAA covered entities wary of sharing data that might be seen by non-HIPAA covered entities."

"We recognize that is important for people who make referrals to get a loop back from us but when we do loop back we often see that there is no follow through on the other end to support client engagement. The volume of referrals we receive makes the loop back incredibly time consuming and we don't have the staff to do it."

PERSPECTIVES

- There was broad appreciation among participating social service providers regarding the promise and utility of the DC HIE.
- A number of social service organizations said that they were pushing to streamline their assessment efforts and make data-informed decisions. The ability to draw down information on the challenges their clients' face and their health histories, care plans, prior utilization, etc. would allow them to serve their clients better and more efficiently.
- Many social support organizations have participated in DC PACT (Positive Accountable Community Transformation) discussions regarding the development and piloting of the Community Resource Information Exchange CoRIE) project and are eager to begin to use the DC HIE to support their work, particularly to access important clinical information and to support the referral process.
- A number of social service providers reflected that they do not feel fully appreciated for the critical role they play in improving health outcomes for some of the District's most vulnerable populations. These stakeholders expressed some frustration that the DC HIE has been developed largely for clinical providers and greater efforts need to be made to engage and support social service providers to participate.
- There is a consistent belief among social service providers that, outside of the CoRIE project, the DC HIE has not sufficiently engaged social services organizations and, therefore, do not have a clear understanding of how social services organizations function and the resources needed to facilitate their engagement in the DC HIE.
- There was general agreement among those who participated that social service organizations will need a great deal of support if they are going to participate fully in the DC HIE with respect to

hardware, software, training, and systems development.

ADOPTION AND USE

- Social services organizations most commonly use the ENS feed and discharge summaries.
- Social service organizations have limited resources (financial, staffing, expertise) to invest in robust Health IT/HIE solutions, which is generally considered to be the leading barrier to participation.
- As with other provider-types, social service organizations and their staff do not fully appreciate how the DC HIE can be used to improve the quality of the services they provide, streamline operations, reduce costs, and reduce provider burden.
- According to the organizations that participated in discussions, it is currently rare for those who have direct contact with clients to have access to and use the DC HIE. The only staff members who use the DC HIE are case managers who are trying to gather information on specific clients, usually to support outreach (e.g., looking for contact information). The DC HIE is not used consistently to guide service plans, promote continuity, or coordinate services.
- Guidelines around patient privacy and sharing information are often unclear and not well understood, which limits engagement in HIE and makes it difficult to train providers on appropriate documentation in the DC HIE.
- DHCF is working to simplify its administrative requirements in ways that will save time and costs, as well as reduce paperwork for those across the healthcare system.

NEEDS AND OPPORTUNITIES

- Social service organizations express the need for more investment in DC HIE connections and services to reflect the important impact they can have on care outcomes.
- The DC HIE needs to engage social services organizations to identify use cases, support capacity building, and fund pilots (in addition to the CoRIE project) that will pave the way for improved collaboration and care coordination across providers, including enhanced use of the DC HIE.
- Efforts need to be made to integrate data sources (e.g., Homeless Management Information System (HMIS)) with the DC HIE to reduce staff burden and improve engagement.
- Staff in social service organizations need significant training on the DC HIE system.
- Need to establish clear guidelines around privacy and sharing information and clear protocols for obtaining patient consent and ultimately using the DC HIE's patient consent system.

Health Plans and Payers

In Health Plans and Payers' Own Words

"Sometimes, the HIT/HIE discussion occurs among the executive team, but they are not the ones using the system. They need to give the go ahead, but you need to get in front of the people doing the work."

"In terms of future use cases, I'm excited about working with CBOs and getting them more connected."

"Engagement in HIE requires more than just getting people connected. We have to make sure the right people know about it, and the right people are disseminating data to the right people."

"Often MCO case managers are forced to search many sources to find the information they need to outreach to and support their members. This can be extremely time-consuming, and the DC HIE has helped to reduce that burden."

PERSPECTIVES

- Payers continue to use the DC HIE to fill information gaps but are now thinking of how it can be leveraged for more proactive, coordinated data sharing and population health management.
- Peer "champions" who can show how the DC HIE can be used to promote quality, reduce provider burden, drive sustainability, and improve the patient experience are critical to HIE organizational integration.
- Contractual requirements and incentives have helped to promote access to the DC HIE. Now efforts need to turn to creating additional incentives or quality standards to drive its use.
- Health plans should work with their provider networks to explore use cases that promote participation in the DC HIE.
- Continued efforts should be made to incent providers to use the DC HIE, potentially through both upside and downside risk arrangements.
- There are significant opportunities for collaboration between health plans and payers and public sector DC agencies with respect to sharing of information on eligibility, disability status, surveillance, immunization, etc.

ADOPTION AND USE

- The most common use of DC HIE by payers continues to be the receipt and use of ENS messages for emergency department and hospital discharges to identify individuals at risk and promote appropriate follow-up.
- Payers also use the DC HIE to get the most up-to-date patient contact information.
- Payers see the potential to use HIE for population health management and to coordinate care, but currently more likely to use in-house tools for population health management.

NEEDS AND OPPORTUNITIES

- Knowledge of how the DC HIE can be used by providers is still somewhat limited. Targeted training and education are needed to promote use. This could be externally driven by targeted outreach or internally driven by organizational "champions."
- Training and technical assistance needs to be on-going, onsite, and particularly focused on smaller organizations and solo practitioners.
- Protocols or quality assurance checks need to be implemented to ensure data in the DC HIE is uploaded consistently and accurately.
- Enhancements to the CRISP DC Reporting Services Advanced Analytics tool including basic and advanced capabilities and supported by claims, public health, and clinical data can encourage shared population health management and real-time monitoring of value-based programs.

Public Agencies

In Public Agencies' Own Words

"How can we make sure that services are seamlessly integrated into one system? We don't want to utilize multiple systems because it duplicates efforts and complicates tracking for our providers"

"COVID-19 was a very good catalyst to get providers signed up. It pushed us over the edge as an organization to fully get into the DC HIE. We had always planned it, but we got it together and went fully in during COVID."

"Lots of opportunities to better share surveillance information or enhance how public sector data are integrated with the DC HIE."

PERSPECTIVES
- There was nearly universal appreciation among the public sector agency staff who participated regarding the significant value and importance of the DC HIE.
- There are numerous legacy systems that are outdated and not serving their users well. Some are in the process of being replaced or enhanced. There was interest in exploring future integration of these systems with the DC HIE.
- Some believed that the HIE should be used to support emergency preparedness and be a source of on-going, real-time service capacity and where there are gaps in capacity.
- Social services organizations, public agencies, and healthcare providers have different needs, goals, and contexts and, therefore, need to be engaged with the DC HIE in different ways. Use cases, analytic tools, and other opportunities need to be tailored to maximize and promote the use of the DC HIE.
- It is unclear who "owns" the data in the DC HIE and who is authorized to house, access, and disseminate that information. Education on the DC HIE governance model is needed across the agencies.

ADOPTION AND USE
- A few agencies upload surveillance information to the DC HIE to promote dissemination and use of this information. However, greater efforts need to be made to integrate public sector systems with the DC HIE.
- There was broad agreement among the public sector agencies who participated that the DC HIE was an under-utilized resource. Most participants had ideas regarding use cases and ways that staff within their agencies and/or across their partner organizations could use the DC HIE.
- Currently, DC public agencies use the DC HIE to access up-to-date contact information and support outreach to those who are vulnerable, largely to support care management or better engage them in services.

NEEDS AND OPPORTUNITIES
- There needs to be greater recognition of the impacts that the social determinants of health (e.g., housing, food security, transportation, employment, education) have on health status and the ability for an individual to access care.
- Numerous people discussed the opportunity to enhance the District's chronic disease and immunization registries.
- There are still gaps in DBH service delivery programs sharing data with the DC HIE (i.e. 35K, mobile crisis, and CPEP).
- A few stakeholders expressed that the DC HIE needed to work proactively with public sector agencies to explore, prioritize, and develop tailored use cases that engage the public sector in bi-directional involvement in the DC HIE.

A.3 2022 SMHP Update Stakeholder Interview Guide

Part 1: Background Information

1. Can you first tell me a bit about yourself? What is your role and what are your primaryresponsibilities at your organization?

2. Where does digital health (health IT and health information exchange) fit into your organization's current strategic goals and priorities? How important would you say these issues are to your organization's success?

Part 2a: District-wide Utilization of HIT/HIE

3. Which organizational partners and/or service providers do you work with?
   a. Do you collaborate with other entities in the District (outside of your own) onHIT/HIE? If so, how?
   b. What structures exist to share information about HIT/HIE, including sharing best practices, advocating for funding, and addressing challenges?
   c. To what extent have users across the District been trained or provided technicalassistance on how to use HIT/HIE?

4. The 2018 SMHP set several goals for uses of the health information exchange in the District's Medicaid program. These include supporting transitions of care; collecting and making effective use of social determinants of health data; providing analytics for population health; and leveraging HIE for public health. To what degree, if any, has the District made progress towards using health information exchange in these areas?

5. Outside of your own organization, what are examples of how organizations across the District are using HIT and HIE effectively?

6. In your view, what policies, programs, or other factors have promoted HIT/HIE adoption/access, exchange, or use in the District?

7. On the other hand, what factors may have hindered HIT/HIE adoption/access in theDistrict?

8. Do you feel that COVID-19 has impacted HIE/HIT adoption and use in the District? If so,how?

9. What are your thoughts on the future of HIT/HIE use in the District?
   a. How confident are you in your/your organization's participation?
   b. How confident are you in others' participation?

Part 2b: Organizational Utilization of HIT/HIE

10. How is HIT/HIE used at your organization? How does your organization leverage HIT/HIE?
    a. Who, specifically, is using HIT/HIE in your organization?
    b. What are the differences in how individuals in your organization use HIT/HIE?
    c. Are you using HIT/HIE for care transitions? If so, how?
    d. Are you using HIT/HIE for social determinants of health? If so, how?
    e. Are you using HIT/HIE for population health management? If so, how?
    f. Are you using HIT/HIE for public health? If so, how?
    g. Are you using HIT/HIE for telehealth? If so, how?
    h. Are you using HIT/HIE for behavioral health transformation? If so, how?

11. How, if at all, has your organization participated in the following initiatives, supports, resources, or types of investments supported by the District for HIT/HIE:
    a. DHCF Meaningful Use/Promoting Interoperability Program
    b. DHCF Technical Assistance for Health IT or HIE (e.g., DCPCA eHealth DC or Enlightened Inc.)
    c. DHCF Technical Assistance for practice transformation (e.g., integrated caretechnical assistance program managed by HMA)
    d. Other public or private initiatives, supports, and resources
    e. Internal initiatives, supports, and resources

12. What is an example of how your organization has used HIT/HIE effectively?
    a. What do you view as the internal assets or strengths of your organization thatenable the effective use of HIT/HIE?
    b. What external factors promote your organization's ability to enable the effective use of HIT/HIE

13. In what ways has HIT/HIE _not_ been used effectively by your organization?
    a. What are the internal challenges or barriers that exist at your organization that hinder the effective use of HIT/HIE?
    b. What external factors hinder your organization's ability to access, exchange, and use HIT/HIE?
    c. What one change would make the biggest difference in your organization's abilityto better leverage HIT/HIE?

14. How has COVID-19 impacted your organization's use of HIT/HIE?
    a. What HIT/HIE lessons has your organization learned as a result of COVID-19?

15. In the last few years, given recent reform and telehealth initiatives, how, if at all, do you see your health information exchange needs evolving?

16. Does your organization bill for telehealth services? A lot? [if a lot] Do you anticipate this volume of telehealth will change following the pandemic? Why or why not?

17. What HIT/HIE activities is your organization doing now that it was not doing in 2018?
    a. What has changed contextually (regarding policies or programmatic factors) that has enabled you to make these changes?
    b. What, if any, barriers were present in 2018 that aren't now?
    c. What barriers, if any, still exist?

18. What management, strategic, or operations structures does your organization have in place to guide HIT/HIE adoption, exchange, and use?
    a. Have these structures changed in the past three years? If so, how?

Part 3: Impact of HIT/HIE and the Future

19. What are your priorities for information exchange in the next 5 years?
    a. What infrastructure do you need to support these goals?
    b. What are you planning to implement within your own organization?
    c. Where and how could District-level HIE support your organization's strategic andinformation exchange goals?

20. Do you have any organizational "pain points" that could potentially be addressed by better data sharing across the District? Do you have any specific requests for support or technical assistance related to digital health?

21. Where do you see the greatest opportunities for expanded health information exchangeand technology within the District of Columbia? (For example: behavioral health; mental health and substance use; care coordination for high-risk patients and patients with multiple chronic conditions; quality measurement; patient engagement)

22. Should the District continue to focus on the priority uses in the 2018 SMHP (supporting transitions of care; collecting and making effective use of social determinants of healthdata; providing analytics for population health; and leveraging HIE for public health) or are there other priorities that should be considered?

Part 4: Conclusion

23. Are there any topics you wish to discuss that have not been raised in this discussion?

24. Is there anyone else you recommend we speak with about current and future healthinformation exchange, technology, and telehealth needs within your organization?

A.4 Summary of Stakeholder Engagement Findings

As is apparent from the information shared, there was a great deal of consistency with respect to the perspectives, recommendations, and ideas shared by stakeholders. Overall, there was a great appreciation for the importance of the DC HIE and the critical role that a secure, well-functioning HIE plays in a strong health system. There was also broad agreement regarding the complexity and tremendous institutional challenges that exist, for both small and large providers across the continuum, related to adapting existing Health IT systems in ways that facilitate participation in the DC HIE. Finally, there was broad and sincere appreciation for the tremendous efforts of all those involved in developing the DC HIE and realizing the achievements that are in place today.

The following is a summary of the major challenges that those who participated in the stakeholder's engagement activities believed needed to be addressed to promote greater use and exchange of information through the DC HIE. Specifically, stakeholders believed that the DC HIE needed to:

» Streamline provider access to the DC HIE, preferably allowing for access that is integrated directly with a provider's EHR,

» Support health organizations across the full continuum to develop the practice-based guidelines, protocols, and tools that effectively promote, guide, and train their service providers to draw on and use the DC HIE,

» Foster greater consistency, timeliness, and the quality of the information that is available on patients in the DC HIE, so that providers see it as an indispensable, reliable resource,

» Develop financial incentives for organizations and service providers to access the DC HIE, exchange information, and use the information to support outreach, patient care, care coordination, transitions, and other workflows,

» Provide financial support for small and/or under-resourced providers who currently struggle to invest in the hardware, software, and other tools they need to participate in the DC HIE (e.g., computers, certified-EHRs, training, and technical assistance),

» Focus on promoting and supporting broader engagement among the District's behavioral health and social service providers,

» Enhance and tailor the analytic and reporting capabilities available through the DC HIE so that organizations and individual service providers can use the information in the HIE to support activities such as: quality and performance improvement; patient

outreach follow-up and engagement; care management (particularly for those with chronic conditions); and broader population health and planning.

With respect to the major steps that needed to be taken to strengthen the DC HIE stakeholders believed that concerted efforts need to be made to ensure that the:

» Full breadth of information necessary to support patient care is included in the DC HIE, including information related to mental health, substance use, and non-clinical social and community-based services,

» DC HIE is developed and operated to serve providers across the continuum with respect to what information is available, how the information and systems are structured, and the tools and supports that are available to support them,

» Necessary systems and tools are available in the DC HIE to facilitate referrals and care transitions including well-function resource directories, referral systems/tools, and secure messaging to support the referral process,

» Necessary controls and systems are in place within the DC HIE to maintain privacy and keep data secure,

» District's public sector agencies (e.g., DC Health, the Department of Public Schools, the Department of Behavioral Health, the Department of Social Services, and the Department of Disability Services) are encouraged and supported to engage in the DC HIE more fully.

A.5 List of Stakeholder Organizations Interviewed and Focus Groups

AmeriHealth Caritas District of Columbia

BridgePoint Hospital

CareFirst

Children's IQ Network (CIQN)

Children's National Health System

Community Connections

Capital Partners in Care Health Information Exchange (CPC-HIE)

Chesapeake Regional Information System for our Patients (CRISP)

D.C. Behavioral Health Association

D.C. Health Care Association

D.C. Hospital Association

D.C. Primary Care Association

D.C Government Agencies

- o D.C. Child and Family Services Agency (CFSA)
- o D.C. Department of Behavioral Health
- o D.C Department of Energy and Environment
- o D.C. Fire and Emergency Medical Services
- o D.C. Health
- o D.C. Department of Human Services
- o D.C. Department on Disability Services
- o D.C. Office of the Chief Technology Officer
- o D.C. Office of the State Superintendent of Education
- o D.C. Public Schools

D.C. Interagency Council on Homelessness

Enlightened Inc.

George Washington University Hospital

George Washington Medical Faculty Associates (MFA)

Gerald Family Care

Greenspace Mental Health

Howard University Faculty Practice Plan

Howard University Hospital

Health Services for Children with Special Needs (HSCSN)

Medical Society of DC

MedStar Family Health Plan

MedStar Health

MedStar Georgetown University Hospital

Pathways to Housing DC

United Medical Center

Unity Healthcare

Ward 8 Health Council

Zane Networks

Focus groups included:

Small and independent provider organizations

Medicaid EHR Incentive Program (MEIP) and DHCF emergency telehealth program participants

DC PACT members and Social Determinants of Health

Behavioral health providers

MCO Case Managers

Patients/Consumers

MCAC Health System Redesign Subcommittee Members

FQHC Clinical Directors Peer Group

CPC HIE Operating Committee

Appendix B: Mayor's Commission on Health Systems Transformation and CRISP DC Programs

Committee	Recommendations	CRISP DC Initiatives
Equitable Geographic Distribution of Acute, Urgent, and Specialty Care	*Recommendation 2:* Facilitate health system integration by providing legal and regulatory technical assistance to providers who wish to develop clinically integrated networks (CINs), Accountable Care Organizations (ACOs), and Independent Physician Associations.	**Outreach and Technical Assistance** Through our partnerships with the DC Hospital Association and the DC Primary Care Association the CRISP DC Outreach team works with providers across all eight of the Wards to help them better understand HIE technology and to adjust their workflows to integrate Health IT creating a more efficient way to provide care.
Equitable Geographic Distribution of Acute, Urgent, and Specialty Care	*Recommendation 3:* Adjust the closure date of United Medical Center (UMC) to align UMC's operations with the opening date for a new hospital to allow for sufficient overlap with the new hospital. This includes ensuring smooth transition for the residents of the skilled nursing facility at UMC	**UMC Image Exchange Project** The CRISP DC Image Exchange makes images available from DC care settings to a DC patient's care team in order to enhance the speed and quality of care, as well as reduce repeat scanning and/or image procedures. CRISP DC is currently working with UMC providers to contribute to the image exchange within the CRISP DC platform and the availability of this data can ensure quality, safety, and a smooth transition to the new facility soon. **UMC CCDA Project** In order to meet Meaningful Use requirements, CRISP DC is working with UMC on the ingestion of CCDAs at UMC.
Equitable Geographic Distribution of Acute, Urgent, and Specialty Care	*Recommendation 5:* Pilot a city-wide model, with a focus on Wards 7 and 8, to better connect prenatal care to labor and delivery options in other parts of the city – through peer support networks, co-management, access to maternal and fetal medicine specialty, improvement in health information exchange, and assistance with transportation.	**Maternal Health Snapshot** The CRISP Maternal Health Snapshot enables maternal health providers to view all necessary labs, prenatal history, imaging/reports, and prior maternal history to gain an understanding of a pregnant patient's needs during an encounter. The tool supports better prenatal care through addressing the lack and fragmentation of information that leads to poor l decision making. **Perinatal Quality Collaborative**

		The PQC is a Mayor's initiative to promote quality care for mothers and babies. CRISP is a represented and speaks to how the HIE is supporting the goals of the collaborative. **Mahmee Integration** Mahmee is a prenatal and postnatal platform for DC Health's perinatal collaborative. Mahmee is integrating with CRISP and sharing screening referral data that will be shown on the Social Determinants of Health tab on the CRISP InContext app. **Maternal Health Reports** In partnership with DHCF and CRISP's data analytics vendor hMetrix, CRISP DC has developed maternal health CRS reports based on maternal health quality measures from CMS's Core Set of Children's Health Care Quality Measures for Medicaid and CHIP, as well as the Core Set of Adult HealthCare Quality Measures for Medicaid.
Equitable Geographic Distribution of Acute, Urgent, and Specialty Care	*Recommendation 7:* Develop a shared, central repository of emergency department (ED) and urgent care access data to promote understanding of changes in patient use of ED, urgent, and primary care services over time.	**Fire & Emergency Services Data** In 2019, CRISP DC completed and made available the data from ESO, the data platform for DC's Fire and EMS agencies. This data tells users that an encounter occurred, displaying notes of the encounter, even if the visit does not result in a transport to the Emergency Department. The Clinical Patient Look Up capability benefits from this integration by making clinical notes from F&EMS available in Health Records along with other transcribed reports on a given patient. The Star of Life icon can be seen in the Encounters widget for an ambulance visit in Patient Care Snapshot. **CRISP Reporting Services** Our reporting and analytics allow providers, government officials, and health plans to understand changes in hospital utilization and compliance with Pay for Performance measures.

Emergency Room Overcrowding and General Reliance on Inpatient Hospital Care	*Recommendation 6:* Engage in a comprehensive process to address the specialized needs and challenges presented by justice-involved individuals, with the goal of treating these patients safely in appropriate care settings, e.g., the Central Cell Block or other Department of Corrections facilities. This effort should include a focus on the safety of first responders and other health care workers, as well as reducing costs associated with such treatment.	**Department of Corrections** Upon re-entry, the Department of Corrections (DOC) will be sending CCDs to CRISP, which seeks to improve the transitions of care for patients who have been treated at their facilities. Due to the sensitive nature of this data sharing, the CCD's will be masked and labeled as Unity Health Care.
Emergency Room Overcrowding and General Reliance on Inpatient Hospital Care	*Recommendation 8:* Encourage and promote enrollment in comprehensive case management for all participants in publicly-funded healthcare.	**Care Team** The CRISP Encounter Notification Services (ENS) provides the ability for a patient's Care Team to be shared with a provider. When a patient is enrolled in case management that fact is shared with future potential providers like those in an Emergency Department.
Access to Critical and Urgent Care Services	*Recommendation 4:* Consider the final recommendations from the HIE Policy Board, which proposes to make available necessary patient information from the electronic medical record and the minimum data set that should be transmitted upon discharge, to improve transitions of care.	**CRISP Portal** Clinical data is available through the CRISP Unified Landing Page and inContext Application. As clinical information is created and shared with CRISP, it is made accessible in real-time to participating healthcare providers across institutional boundaries through the CRISP Health Records portal. The portal gives providers the ability to securely look up patient information via their browser. It retrieves clinical data from participants and displays it in a view-only screen at the point of care. **CRISP Encounter Notification Services**
Access to Critical and Urgent Care Services	*Recommendation 5:* Exchange electronic advance directive forms among providers.	**Advanced Directives Project** CRISP DC has been awarded the Advanced Directives grant from DHCF, which will enable providers to see the most up to date

		information on eMOST/PAD/Advanced Directives information at the point of care through the HIE.
Access to Critical and Urgent Care Services	*Recommendation 6:* Incentivize the assessment and sharing of social determinants of health during a first prenatal visit.	**CoRIE Project** CRISP DC CoRIE grant awarded by DHCF is enabling the exchange of SDOH data at point of care, such as referral history, conditions, and screening. In addition, the CRISP referral tool will allow providers to refer patients to community-based organizations as needed. Mahmee, a prenatal and postnatal platform, will be sharing screening and referral data with CRISP and this data will be shown on the CRISP SDOH tab. **Maternal Health Snapshot** The CRISP Maternal Health Snapshot also supports prenatal care through showing participating CRISP providers maternal health related information for pregnant patients at point of care.
Access to Critical and Urgent Care Services	*Recommendation 7:* Increase the capacity of primary care providers to treat substance use disorders	**DC PDMP** The DC Prescription Drug Monitoring Program (PDMP) can be viewed through the CRISP platform and allows healthcare professionals to review a patient's controlled-substance prescription history more quickly and efficiently. The statewide integration of the DC and MD PDMP platform with CRISP DC is a key component of the District's ongoing effort to address the opioid crisis. **Consent Project** CRISP DC Consent grant awarded by DHCF has funded the development of a comprehensive consent management system to share behavioral health information, including substance use disorder (SUD) data protected by 42 CFR Part 2, through the District HIE. This infrastructure seeks to increase the exchange of information among District behavioral health providers, which was a barrier to primary care provider's capacity to treat substance use disorders.

Access to Critical and Urgent Care Services	*Recommendation 8:* Incentivize the establishment of new Comprehensive Psychiatric Emergency Programs (CPEP) sites and endorse the Department of Behavioral Health proposal for a comprehensive waiver to redesign the CPEP	**CPEP Participation in CRISP DC** CPEP providers have access to CRISP DC tools and services to assist them in having a more comprehensive view of a patient's medical history
Value-Based Purchasing of Health Care Services	*Recommendation 2:* Expand quality measurement to capture more data on health system effectiveness and to inform care delivery, payment incentives, and population health. Measures should align with existing measures required by federal and other partners. a. Refine the core measure set of health priorities. b. Engage health care groups to achieve multi-payer alignment. c. Adopt public reporting to disseminate performance on the core measurement set.	**CRS Reports** DC CRS is an analytics platform accessible within existing DC HIE infrastructure that is intended to support population-level and panel-level management through clinical and administrative data for analysis and interventions. Medicaid claims based reports use the beneficiary's unique identifier and MCO panel assignment to track healthcare utilization. In each of the Pay for Performance Reports (PCR, PQI, and NED) and the PMPM Report, users can view the Beneficiary Count by PCR/PQI/NED bar chart to identify beneficiaries based on the number of visits for the selected measure. From the bar chart, the user can drill down to the Beneficiary Details report, which provides the list of beneficiaries and select demographic/clinical characteristics. Using these reports, FQHCs may observe that many of their Readmissions or PQI related visits are due to specific conditions (based on APR DRG) such as COPD, diabetes, or heart failure. This information can assist FQHCs in the planning and development of care coordination efforts targeting these specific conditions and/or beneficiaries of interest.

Appendix C: Core Structures of the DC HIE Governance Model

DC HIE Policy Board

The following tables below provide additional information on the purpose, mission, functions, and relevant key activities/accomplishments pertaining to the four (4) subcommittees of the DC HIE Policy Board.

HIE Operations, Compliance, and Efficiency (OCE) Subcommittee	
Purpose	To advise, monitor, and improve the community standards for HIE operations in the District.
Mission	To facilitate the establishment of standards for the DC HIE entities that reflect best practices and ensure consistent operations within the DC HIE.
Functions	▪ Develop common standards for terminologies, definitions, and metrics for the DC HIE. ▪ Develop technical expert panel(s) to support and provide feedback on DC HIE projects and initiatives.
Key Activities/ Accomplishments	▪ Recommended a list of data elements to be exchanged at the time of discharge from the hospital to facilitate seamless transitions to home or another post-acute setting. ▪ Recommend benchmarks for accuracy, timeliness, and completeness of data. ▪ Recommend baseline operational performance standards. ▪ Recommend the types of data that should be a core minimum dataset exchanged among the HIEs in the District. ▪ Adopt and implement emerging best practices/standards for privacy and security of health information

Policy Subcommittee	
Purpose	To provide recommendations on public policy initiatives that encourage participation in and the sustainability of the DC HIE.
Mission	To facilitate the establishment of governance and operational policies for the DC HIE entities that reflect best practices and ensure that the DC HIE is operating safely, securely, and effectively.
Functions	Provide formal guidance and recommendations regarding key policy decisions related to DC HIE operations in collaboration with the OCE subcommittee
Key Activities/ Accomplishments	▪ Provided critical guidance on the range of secondary uses of health information to support DHCF's development of policy guidance, as required by section 8703.4 of the DC HIE Rule. ▪ Made recommendations to the District government on pending policy issues for the (on-going) implementation of the DC HIE Rule. ▪ Provided feedback to the District government on strategies to improve understanding of direct-to-consumer consent management in the District to increase patient trust in the DC HIE.

	▪ Made recommendations to the District government on strategies to inform the impact of local and national HIT/HIE policies on the exchange of health information in the District.

Stakeholder Engagement Subcommittee

Purpose	Gain and maintain stakeholder engagement for long-term operational and financial sustainability of health information exchange (HIE) in the District.
Mission	To provide recommendations to the HIE Policy Board on 1) Strategies to promote the value of HIE through discussions and forums with identified stakeholders; and 2) The SMHP measurement framework and priorities.
Functions	Provide formal guidance and recommendations on how to promote and facilitate engagement in the DC HIE across the full breadth of stakeholders with respect to the provision of expert advice, oversight and accountability, or participation in the provision or use of data.
Key Activities/ Accomplishments	▪ Collaborated with DHCF to promote the value of HIE to District stakeholders. ▪ Researched District stakeholders and identify their needs to gain understanding on ways to improve their engagement in the District's HIE initiatives. ▪ Collaborated with DHCF to promote the value of HIE to District stakeholders. ▪ Provided feedback to DHCF on SMHP evaluation measures. ▪ Identified core competencies for digital health technical assistance programs in the District.

Community Resource Inventory Subcommittee

Purpose	Develop recommendations for consideration by the HIE Policy Board that are related to the use, exchange, sustainability, and governance of community resource directory data through the District HIE infrastructure.
Mission	Build the capacity of HIE stakeholders to share, find and use information about resources available to address health related social needs and improve health equity.
Functions	▪ Evaluate the DC PACT Community Resource Inventory (CRI) Action Team's recommendations for data maintenance. ▪ Review and recommend prospective models for governance, financial and operational sustainability of the CRI infrastructure. ▪ Review and recommend policy measures that can promote and support the operations of the CRI, such as procurement and service registries. ▪ Support the evolution of CRI governance model and assess the timeline for integration into existing HIEPB committees.
Key Activities/ Accomplishments (Since April 2021 when established)	▪ Evaluated results of CoRIE CRI testing and evaluation strategies. ▪ Advised on data governance operational implications for discussion.

Internal Governance Structures at DHCF

As discussed, DHCF, as the District's SMA and Health IT Coordinator is a vital partner with the ONC and CMS and through HITECH Act of 2009 has been funded to develop the District's HIE and promote the safe, efficient exchange of health information. Staff at DHCF, primarily within DCHF's Health Care Reform and Innovation Administration (HCRIA) have played a critical role with respect to developing and supporting the DC HIE Governance structures both internally and externally. Staff at DHCF have also played a vital role in supporting implementation and have supported many of the projects proposed through the 2018 SMHP to implement the DC HIE, promote engagement, facilitate the approved use cases, and administer federal and local grants.

In 2020, DHCF developed an internal DC HIE Users Committee, a subcommittee of the DHCF Data Governance Committee, which has provided important guidance with respect to onboarding of internal HIE users at DHCF and the development of specific use cases for the DC HIE, data standardization, data security, and privacy policies related to the DC HIE. The internal committee has helped to promote the DC HIE and support refinements to how the DC HIE is accessed and used by HIE participants at DHCF. In 2018, DHCF created a policy and procedures framework for the use of the DC HIE by internal staff. The following policy is consistently implemented and required for DHCF staff to get approved access to the DC HIE, 1) DHCF staff are expected to read the policy document, 2) identify which permitted use cases apply to their area of work, and 3) indicate that they have received and completed HIPAA training. DHCF continues to develop model templates for implementation of DC HIE access and use at the agency. DHCF hopes to package these resources for other District agencies to implement these best practices for internal use at their respective agencies.

Appendix D: Current Use of DC HIE Services by District Government Agencies

Agency	Primary Data Contributed and How It's Used	CRISP Core Capabilities in Use	Use Cases Examples
DC Child and Family Services Agency (CFSA)	Patient Panels to Establish Provider Relationships	Critical Infrastructure, including Patient Care Snapshot and Encounter Notification Services	Care coordination for children who enter the custody of CFSA and are seen in their clinic by a licensed provider for a wellness check
DC Department on Disability Services (DDS)	Patient Panels to Establish Provider Relationships	Critical Infrastructure, including Patient Care Snapshot and Encounter Notification Services	Care coordination
DC Fire and EMS (FEMS)	Patient Panels to Establish Provider Relationships Runsheets from Ambulance Transports are available in health records for providers to access	Critical Infrastructure, including Patient Care Snapshot and Encounter Notification Services	Care coordination for patients who are transported to the hospital via ambulance by their primary care office upon discharge. First responders receive notifications of positive COVID-19 tests subsequent transport.
DC Public Schools (DCPS)	Absentee Data from School Records When children meet a certain threshold of absent days, pediatricians are notified so they can outreach to the children.	Encounter Notification Services	Care Coordination for children with a high number of absences through their primary care office.
DC Department of Behavioral Health (DBH)	Patient Panels from iCAMS and DataWits EMRs to Establish Provider Relationships	Critical Infrastructure, including Patient Care Snapshot and Encounter Notification Services	Care coordination

Agency	Primary Data Contributed and How It's Used	CRISP Core Capabilities in Use	Use Cases Examples
DC Department of Energy and Environment (DOEE)	Lead Registry Lab Data to identify elevated lead levels.

High lead levels in lab data will trigger CRISP Care Alerts for the patient | N/A | N/A |
| **DC Department of Health (DC Health)** | COVID-19 Case Files
DC PDMP Access to Providers Through CRISP
COVID-19 Vaccinations | Critical Infrastructure, including Patient Care Snapshot and

Encounter Notification Services Infectious Disease Alerts:

- (NDM (New Delhi metallo-beta-lactamase 1)
- CRAB (Carbapenem-resistant Acinetobacter baumannii); and
- NDM CRE (carbapenem-resistant Enterobacteriaceae))

Vaccine Tracker for COVID-19 Vaccinations (first, second and booster) | ENS is used for Care Coordination for persons infectious diseases

Infectious Disease Tracking and Reporting

Colorectal Screening Results

PrEP Medication Population

Health Reporting

Data for Contact Tracers |
| **DC Department of Health Care Finance (DHCF)** | Medicaid Claims and Enrollment Data | Critical Infrastructure, including Patient Care Snapshot and Encounter Notification Service for Medicaid beneficiaries.

CRISP DC Reporting Services | Care coordination and transitions of care |
| **DC Office of the Chief Medical Examiner (OCME)** | N/A | Critical Infrastructure, including Patient Care Snapshot and Health Records | Death Investigation and Fatality Reviews |

Agency	Primary Data Contributed and How It's Used	CRISP Core Capabilities in Use	Use Cases Examples
DC Department of Corrections	Patient Panels and CCDs (Clinical Data). The clinical data documentation that is shared is scrubbed of all identification that it comes from providers from the DOC and is masked as coming from Unity Healthcare. This will contribute healthcare data to the HIE for patients who received care from the DOC and can be used to provide a holistic patient history.	Health Records and Patient Care Snapshot	Care Coordination for re-entering citizens.

Appendix E: Promoting Interoperability (PI) Program

Appendix E provides an overview of the growth and highlights of the Medicaid Promoting Interoperability (PI) program, formally known as the EHR Incentive Program (MEIP) and Meaningful Use (MU) Program. Please note the significant increase in participation towards the latter years of the program, specifically Program Year 2020 and Program Year 2021 respectively, where the District successfully tripled the number of active participants in the program. Such program growth has inevitably improved the quality, safety and effectiveness of patient-centered care provided to beneficiaries in the District.

E.1   Promoting Interoperability Achievement and Payments

Tables E.1 and E.2 detail the unique count of eligible professionals and hospitals, and AIU/MU payments made from the launch of the program in 2013 to the close of the program in 2021 by the District of Columbia.

Table E.1 - Program Year AIU/MU Payments to Eligible Professionals (Source: DHCF, 2022)

Program Year	# AIU EPs Paid	# MU EPs Paid	Total AIU Payments	Total MU Payments	Program Year Total Payments
PY2013	74	4	$1,572,500	$34,000	$1,606,500
PY2014	51	94	$1,083,750	$799,000	$1,882,750
PY2015	29	58	$616,250	$493,000	$1,109,250
PY2016	110	40	$2,337,500	$340,000	$2,677,500
PY2017	0	16	$0	$136,000	$136,000
PY2018	0	63	$0	$535,500	$535,500
PY2019	0	26	$0	$221,000	$221,000
PY2020	0	230	$0	$1,955,000	$1,955,000
PY2021	0	210	$0	$1,785,000	$1,785,000
Total	264	741	$5,610,000	$6,298,500	$11,908,500

Table E.2 - AIU and MU Counts and Payments (Source: DHCF, 2022)

MEDICAID PROMOTING INTEROPERABILITY PAYMENTS - DISTRICT OF COLUMBIA, AUGUST 2013 TO DECEMBER 2021						
Provider Type	AIU count	AIU amount	MU Count	MU Amount	Total Count	Total Amount
EP	264	$5,610,000	741	$6,298,500	1,005	$11,908,500
Hospital	1	$6,161,843	2	$6,162,292	3	$12,324,135
Dual	4	$6,572,312	8	$6,571,992	12	$13,144,304
TOTAL	269	$18,344,155	751	$19,032,784	1020	$37,376,939

Figure E.3 visually details the unique count of eligible professionals (EPs) paid per program year from the launch of the program in 2013 to the close of the program in 2021 by the District of Columbia.

Figure E.3 – Number of Eligible Providers Paid (Source: DHCF, 2022)
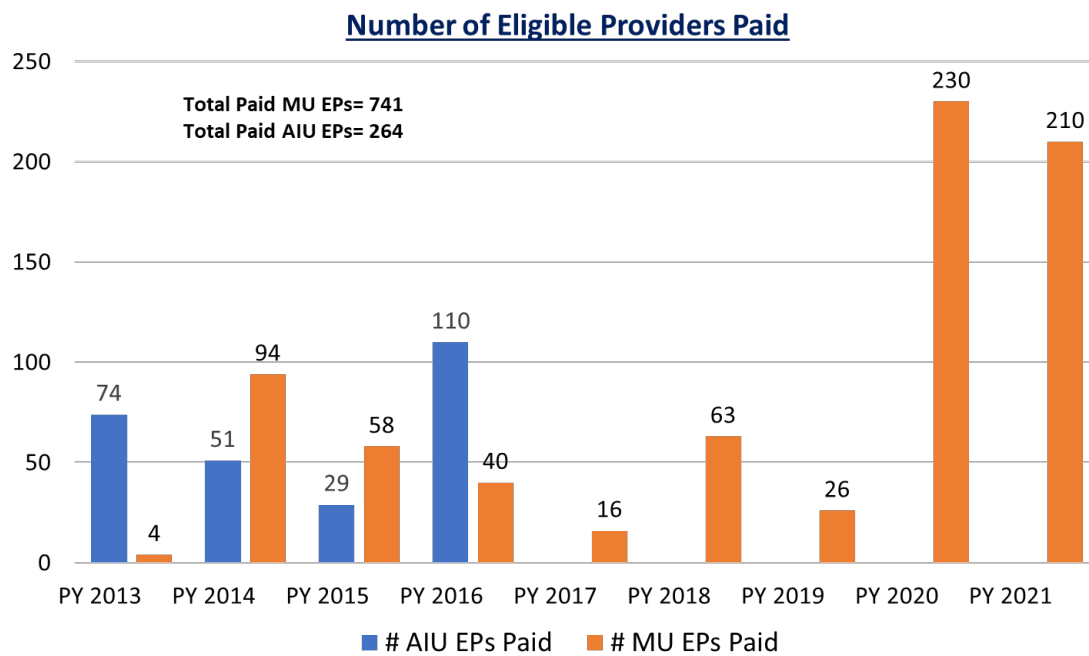
Figure E.4 visually details the *total payments* made to eligible professionals (EPs) per program year by the District of Columbia from the launch of the program in 2013 to the close of the program in 2021.

Figure E.4 – Total Payments by Program Year (Source: DHCF, 2022)

Total Payments Made to Eligible Providers By Program Year

Total AIU Payments= $5,610,000
Total MU Payments= $6,298,500
Grand Total = $11,980,500

Legend:
- ■ Total AIU Payments
- ■ Total MU payments

Data labels:
- PY 2013: $1,572,500 (AIU), $34,000 (MU)
- PY 2014: $1,083,750 (AIU), $799,000 (MU)
- PY 2015: $616,250 (AIU), $493,000 (MU)
- PY 2016: $2,337,500 (AIU), $340,000 (MU)
- PY 2017: $136,000 (MU)
- PY 2018: $535,500 (MU)
- PY 2019: $221,000 (MU)
- PY 2020: $1,955,000 (MU)
- PY 2021: $1,785,000 (MU)

Appendix F: DC HIE Core Capabilities

The District designed and developed a set of six technological building blocks to operationalize priority areas, as defined by health system stakeholders. These technical tools and programs are collectively known as the DC HIE Core Capabilities:

1) Critical infrastructure
2) Consent
3) Registries
4) Directory and Secure Messaging
5) Screening and Referral
6) Advanced analytics for population health management

DC HIE is a Health Data Utility with Six (6) Reliable Core Capabilities for Providers

Critical Infrastructure (e.g. Encounters and Alerts) Lookup)	Consent	Registries	Directory and Secure Messaging	Screening and Referral (e.g., SDOH)	Advanced Analytics for Population Health Management
ADT Alerts	eConsent Solution	Care Management Registry	Provider Directory	eReferral Screening	CRISP DC Reporting Services
Health Records	-SUD (42 CFR Part 2) Data Consent -HIPAA Consent -Telehealth Consent	Advance Care Planning	Community Resource Inventory	-Social needs screening for housing and food insecurity -eReferral	Performance Dashboards
Patient Snapshot		-Advance Directives -eMOST			Vaccine Tracker
Image Exchange					

The following pages in this Appendix provide examples of each core capability and how it is viewable to end users in the DC HIE.

F.1 Core Capability #1: Critical Infrastructure

The first of the six core capabilities, critical infrastructure consists of technology that enables care teams to access notifications of encounters with other providers as well as clinical alerts to facilitate communication across care settings, conduct individual patient lookups to assess utilization across care settings, and exchange summary records and imaging.

Critical infrastructure currently consists of four tools: 1) Encounter Notification Service (ENS); 2) Health Records; 3) Patient Care Snapshot; and 4) Image Exchange.

Admit, Discharge, Transfer (ADT) Alerts through Encounter Notification Services (ENS)
ADT Alerts are available to DC HIE users through the ENS tool, which enables health care providers to receive real-time alerts when that provider's active patient has an encounter with one of the organizations sharing encounter information to the DC HIE.

The DC HIE receives admissions, discharge, and transfer data from nearly 300 different external sources and sends daily reports of notifications received to subscribing providers. ENS is highly configurable, allowing each organization to select which types of alerts (e.g. emergency department visits, inpatient admissions or discharges, outpatient visits) they would like to receive and how they receive them (secure email, the CRISP portal, within their electronic health record).

Patient Care Snapshot

The Patient Care Snapshot tool combines and displays data from a variety of sources to provide a view of patient's clinical history. Information is displayed from compilation of care management data alongside real-time hospital encounter feeds, up-to-date demographic information, patient to care provider attribution, and clinical summaries of care from DC HIE real-time interfaces with providers across the region. Patient Care Snapshot allows members of a care team to conduct single patient look ups and get a quick, up-to-date glimpse into health utilization and a patient's various touchpoints with the health system, which is particularly useful in the absence of past patient records during care transitions.

Health Records

The Health Records tool provides DC HIE users access to near real-time clinical information – including laboratory, radiology, and clinical notes – from a variety of sources can be accessed in order to have a comprehensive view into a patient's clinical history. Roughly 45% of all CRISP DC usage is access to Health Records. Health Records allows members of a care team to conduct single patient look ups and get a comprehensive view into both current and historical patient clinical records. This data is particularly useful in coordinating care for new patients and cutting duplicative healthcare costs by allowing providers to see laboratory and radiology data from past encounters.

Image Exchange

The Image Exchange tool enables providers to access core and emergent images at the point of care. Features of this tool include image and associated diagnostic report viewing, one-click access to all imaging studies available in DC HIE for a patient, and immediate access to critical stroke cases requiring transfer to specialized care. The diagnostic images are securely stored on servers located within each connected hospital's local environment. Images taken within the last 30 days are made available to all authorized CRISP users within seconds of collection while deeper archives of images older than 30 days are available within minutes.
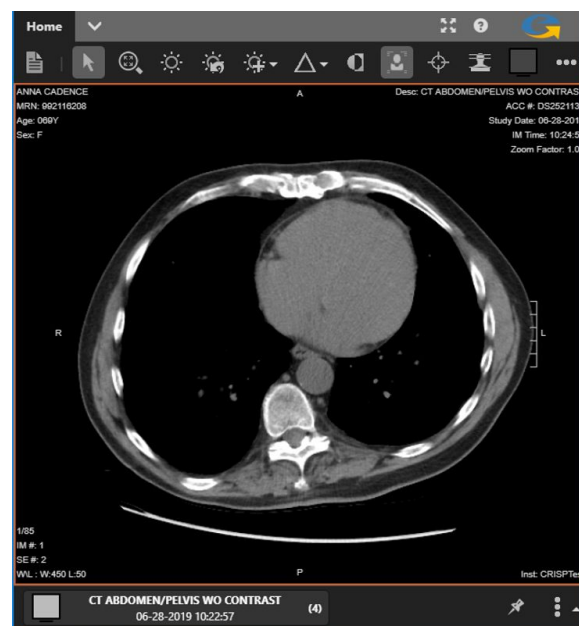
F.2 Core Capability #2: Consent

The second of the six core capabilities, Consent currently consists of the Consent Management Solution tool which enables entities participating in the DC HIE to create, manage, sign, and revoke 42 CFR Part 2 compliant consent. Upcoming enhancements to this tool including enabling HIPAA authorization, telehealth attestation for patient signature, and the addition of other key elements of consent authorization.

F.3 Core Capability #3: Registries

The third of the six core capabilities, Registries, currently consists of a Care Management Registry and Advance Care Planning (in development) tool.

Care Management

Through the Care Team widget in the CRISP Portal, providers can access a patient's care management program enrollment information

that is stored in the CRISP Care Management Registry. DC HIE users often use this registry upon hospital discharge for care transitions across different health care organizations.

Advanced Care Planning

The Advance Care Planning project is supporting the development of infrastructure for electronically exchanging advance directives and electronic Medical Orders for Scope of Treatment (eMOST) forms District-wide, via the DC HIE. Upcoming development of this tool will enable providers and caretakers to access their patient's advance directives through the DC HIE.

F.4 Core Capability #4: Directory and Secure Messaging

The fourth of the six core capabilities, Directory and Secure Messaging, includes two tools: 1) Provider Directory; and 2) Community Resource Inventory. Future enhancements to this core capabilities will include developing the secure messaging component of the Provider Directory and the integration of social needs screening and referral with the Community Resource Inventory.

Provider Directory

Provider Directory is a master index of health care providers and organizations and is populated by both national and local resources. The Provider Directory displays information about health care professionals, including practice location, credentials, specialty, and affiliated organizations. Upcoming enhancements will include integration with additional local District-based data sources, including health professional and facility licensure database, MCO/payer provider directories, and the establishment of processes to ensure accuracy of information.

Community Resource Inventory (CRI)

The CRI is a District-wide publicly available directory of shared resources reflecting programs and organizations in the community. CRI is designed to leverage and support existing resource directory information systems in the District. Future enhancements will include the development of a seamless lookup capability with the SDOH screening and referral functions in the DC HIE.

F.5 Core Capability #5: Screening and Referral (e.g. Social Determinants of Health)

The fifth of the six core capabilities are the screening and referral tools and social needs tab to enable the collection, exchange, and use of social needs data. This capability is designed to maximize interventions, ease care coordination, reduce barriers to access, and improve the efficiency of person-centered services.

Social Needs Screening

The Social Needs Screening capability enables organizations to export documented social needs screening data, such as assessments of diagnoses indicating health-related social conditions, to be displayed at the point of care within the DC HIE. As an alternative option to users, the Screening capability also includes a direct entry screening tool to conduct and enter screenings and assessments electronically.

Social Needs Referral

The Social Needs Referral capability enables providers to send social need referrals to specific programs offered by community-based organizations, track follow-up to services, and receive disposition on referrals made. Enhancements will include enabling organizations third-party social needs referral platforms to share referrals and responses with the DC HIE to display at the point of care.
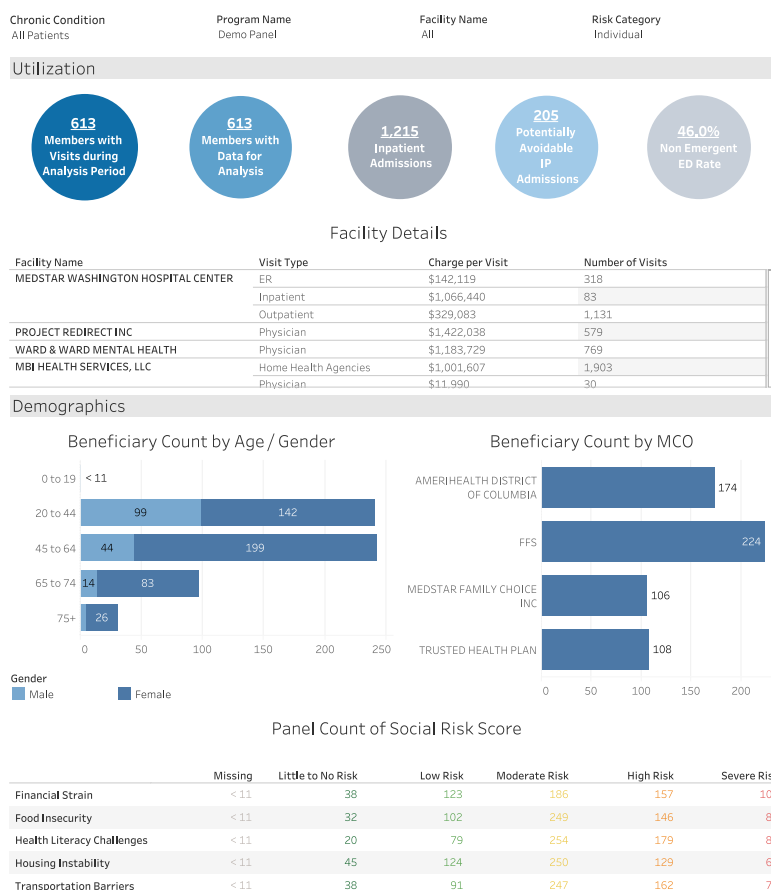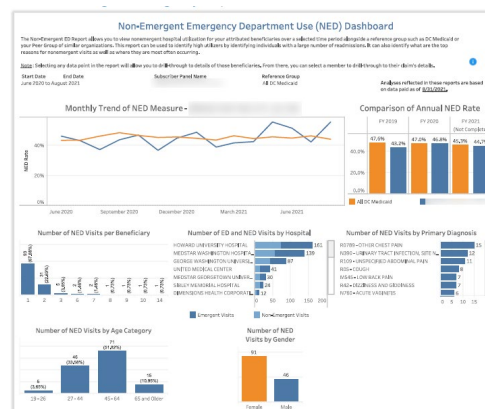
F.6 Core Capability #6: Advanced Population Health Management Analytics

The sixth core capability is advanced analytics for population health management, which includes data and visualizations tools that are designed to facilitate a provider's understanding of their patient population and develop targeted interventions to better manage population health.

CRISP DC Reporting Services (DC CRS)

DC CRS is an analytics platform accessible within existing DC HIE infrastructure that is intended to support population-level and panel-level management through clinical and administrative data for analysis and interventions. DC CRS provides reports on demographic and health system utilization, quality measure monitoring, and risk stratification to identify high-cost, high-utilization, and members with chronic disease.

Chronic Condition	Program Name	Facility Name	Risk Category
All Patients	Demo Panel	All	Individual

Utilization

- 613 Members with Visits during Analysis Period
- 613 Members with Data for Analysis
- 1,215 Inpatient Admissions
- 205 Potentially Avoidable IP Admissions
- 46.0% Non Emergent ED Rate

Facility Details

Facility Name	Visit Type	Charge per Visit	Number of Visits
MEDSTAR WASHINGTON HOSPITAL CENTER	ER	$142,119	318
	Inpatient	$1,066,440	83
	Outpatient	$329,083	1,131
PROJECT REDIRECT INC	Physician	$1,422,038	579
WARD & WARD MENTAL HEALTH	Physician	$1,183,729	769
MBI HEALTH SERVICES, LLC	Home Health Agencies	$1,001,607	1,903
	Physician	$11,990	30

Demographics

Beneficiary Count by Age / Gender

Beneficiary Count by MCO

Panel Count of Social Risk Score

	Missing	Little to No Risk	Low Risk	Moderate Risk	High Risk	Severe Risk
Financial Strain	< 11	38	123	186	157	108
Food Insecurity	< 11	32	102	249	146	83
Health Literacy Challenges	< 11	20	79	254	179	80
Housing Instability	< 11	45	124	250	129	64
Transportation Barriers	< 11	38	91	247	162	74

Appendix G: 2018 SMHP Evaluation Framework Proposed Measures

This appendix contains the original list of 21 measures proposed in the 2018 SMHP. They are organized by the Health IT and HIE Evaluation Framework categories – Access, Exchange, Use, and Improve. The *Table G.1* below lists the evaluation measures that DHCF prioritized for implementation.

Subsequent to the publication of the 2018 SMHP, DHCF worked with its partners and the DC HIE Policy Board to develop measure specifications and to assess the feasibility of capturing each of the proposed metrics. As a result, the initial proposed 21 measures in the tables below were replaced with a new parsimonious set of 12 meaningful, non-burdensome measures, displayed in *Appendix H*.

Table G.1 – 2018 SMHP Health IT and HIE Evaluation Framework Proposed Measures

Access	Exchange	Use	Improve	Measure	Data Source to Evaluate Measure	Annual Benchmarks
☑	☐	☐	☐	Of the targeted District organizations and providers, how many were contacted for Technical Assistance?	DHCF Technical Assistance database	100% of MEIP eligible professionals
☑	☐	☐	☐	Of the organizations and providers enrolled in eHealthDC's Technical Assistance, how many met Technical Assistance objectives (for example, successful completion in the MEIP or connection to HIE)?	DHCF Technical Assistance database	85% of organizations and providers enrolled in Technical Assistance
☑	☑	☐	☐	Of the number of Health IT survey respondents, how many expressed satisfaction with the quality of HIE data and perceived value in exchanged data?	Provider Health IT survey	Collect data and establish baseline and target in 2018
☑	☑	☑	☐	Of the number of Health IT survey respondents, how many electronically collected SDOH data?	Provider Health IT survey	25% annual increase between survey years
☑	☐	☑	☑	Of the number of ED visits by Medicaid beneficiaries, how many were low-acuity, non-emergent ED visits?	DHCF claims	Dependent on targets defined in each DHCF VBP program
☑	☐	☑	☑	Of the number of hospital admissions by Medicaid beneficiaries, how many were followed by readmission?[12]	DHCF claims	Dependent on targets defined in each DHCF VBP

Access	Exchange	Use	Improve	Measure	Data Source to Evaluate Measure	Annual Benchmarks
						program
☑	☐	☑	☑	Of the number of hospital admissions for Medicaid beneficiaries, how many were potentially preventable?[13]	DHCF claims	Dependent on targets defined in each DHCF VBP program
☑	☐	☑	☑	Of the number of MCOs participating in capitated payment arrangements, how many received their full capitated payment?	DHCF	Dependent on targets defined in each DHCF VBP program
☐	☑	☑	☐	How many stakeholder engagement events did DHCF conduct to collect feedback on health IT and HIE progress?	DHCF	Collect data and establish baseline and target in 2018
☐	☑	☑	☐	Based on measures submitted by MEIP participating providers, how many patients viewed, downloaded, or transmitted their health information?	DC MEIP attestation data	25% annual increase between MEIP Program Years
☐	☑	☑	☐	Based on measures submitted by MEIP participating providers, how many patients sent a secure message to their provider?	DC MEIP attestation data	25% annual increase between MEIP Program Years
☐	☐	☑	☐	Based on measures submitted by MEIP participating providers, what were the eCQM reporting rates and values?	DC MEIP attestation data	25% annual increase between MEIP Program Years
☑	☐	☐	☐	Of the number of providers and organizations connected to a registered HIE, how many sent data?	Registered HIE(s)	N/A
☑	☐	☐	☐	Of the number of providers and organizations connected to a registered HIE, how many received data?	Registered HIE(s)	N/A
☑	☐	☐	☐	Of the number of My Health GPS providers, how many used CAliPR for eCQM reporting?	CAliPR	N/A
☑	☐	☐	☐	Of the number of providers that serve Medicaid enrollees, how many were using certified health IT?	Provider Health IT survey and DHCF claims data	N/A
☑	☐	☐	☐	How many Medicaid enrollees were served by providers that use certified health IT?	Provider Health IT survey and	N/A

Access	Exchange	Use	Improve	Measure	Data Source to Evaluate Measure	Annual Benchmarks
					DHCF claims data	
☑	☑	☐	☐	What is the HIE tools usage volume by care setting, provider, and payer?	Registered HIE(s)	N/A
☑	☑	☑	☑	By ward, what were the health outcomes for residents with chronic disease and behavioral health conditions, including asthma, COPD, stroke, diabetes, and depression?	Community Health Needs Assessments	N/A
☑	☐	☑	☑	Of the number of FQHCs, how many achieved quality requirements and received P4P bonus payments?	DHCF and CAIiPR	N/A
☑	☐	☑	☑	Of the number of My Health GPS providers, how many achieved quality requirements and received bonus payments?	DHCF and CAIiPR	N/A

Appendix H: DC HIE Evaluation Metrics

Subsequent to the publication of the 2018 SMHP, DHCF worked with its partners and the DC HIE Policy Board to develop measure specifications and to assess the feasibility of capturing each of the proposed metrics. As a result, DHCF currently uses the following parsimonious set of 12 meaningful, non-burdensome measures to monitor access, exchange, and use of HIE. DHCF and the HIE Policy Board's subcommittee will engage national and local subject matter experts on interoperability measurement to develop additional measures to capture the impact of HIE use to improve care outcomes.

Table H.1 – Current DC HIE Evaluation Metrics

#	Description	Access	Exchange	Use	Improve
1	Number of Active DC CRISP users, by user type	☒	☐	☐	☐
2	Number of de-duplicated DC Medicaid beneficiaries on active CRISP provider panels	☐	☒	☐	☐
3	Number of DC organizations (and locations) that are provisioned to access encounter notification services (ENS)	☒	☒	☐	☐
4	Number of ENS transactions from hospitals received by District ambulatory providers	☒	☒	☐	☐
5	Number of DC Hospitals with live SSO of CRISP services	☒	☐	☐	☐
6	Number of DC ambulatory practices with live SSO of CRISP services	☒	☐	☐	☐
7	Number of DC CRISP users who performed a patient care snapshot query in the last 30 days, by organization type	☐	☒	☒	☐
8	Number of DC healthcare organizations (and locations) that have a participation agreement with CRISP to access data (CRISP Tier 1 Connectivity), by organization type.	☒	☐	☐	☐
9	Number of DC healthcare organization (and locations) that are sending encounter data to CRISP (CRISP Tier 2 Connectivity), by organization type.	☐	☒	☐	☐
10	Number of DC healthcare organizations (and locations) that are contributing clinical data, to CRISP (CRISP Tier 3 Connectivity) in addition to encounter data, by type.	☐	☒	☐	☐
11	Number of CDA's received by CRISP, by DC organization type	☐	☒	☐	☐
12	Average time for hospital to send electronic discharge summary to CRISP post discharge, by hospital.	☐	☐	☒	☐

Appendix I: District's 10 Strategic Goals for Health IT and HIE, Progress Since 2018

Since the publication of the 2018 SMHP, projects and programs have been designed, developed, and implemented specifically to help meet 10 broad strategic goals for health IT and HIE in the District. These strategic goals sought to fulfill a vision of health IT and HIE that enables health system connections and improved outcomes as a result of widespread adoption and consistent use.

The table below displays these strategic goals and denotes which aspect of the Evaluation Framework that each goal is intended to support and the status of our meeting them. Overall, the District has made demonstrable or incremental progress toward these broad goals.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☑	☐	☐	☐	1. **Increase provider adoption of EHRs and HIE** to expand virtual networks of providers in the District who are capable of delivering high-quality care by leveraging technology.	**Demonstrable**	*EHR Adoption* Through the Promoting Interoperability (PI) Program, DHCF provided over $35 million in incentives to qualifying providers and hospitals for adopting, implementing, and/or upgrading their EHR systems to deliver patient care and connect with patients and other providers. With the help of Medicaid PI incentives, hundreds of health care providers in the District - physicians, dentists, nurse practitioners, and certified nurse midwives - have made great progress using their EHRs to improve health outcomes, securely exchange health information, and expand patient access to their health data. While the District's PI Program has been extremely successful at encouraging interoperability, several provider types - behavioral health, home, and community-based service providers - were unable to participate due to Federal eligibility requirements. *HIE Adoption* Since 2018, there has been a 49% increase in approved users of the DC HIE and today there are over 12,000 users. More than 600 practice sites now have access to admit, discharge and transfer (ADT) alerts via the CRISP DC encounter notification system (ENS). Nearly 300 sites now share ADT information, resulting in a substantial increase in bi-directional exchange.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☑	☑	☐	☐	**2. Electronically identify providers and provider networks** serving District residents.	**Demonstrable**	Launched in June 2019, the DC Provider Directory is a comprehensive, FHIR-based directory that includes data from 21 District sources and 400 national data sources including state licensing boards. The Provider Directory national sources currently include NPPES, Physicians Compare, Hospital Compare, Nursing Facility Compare, and Direct Trust. It also includes data from 350 hospital systems nationwide.
☑	☑	☐	☐	**3. Increase the number of virtual care teams** that are electronically connected to support integrated, high-quality care.	**Incremental**	As of October 2021, the DC HIE has over 12,000 active users from the District's provider community that are accessing and exchanging information within the district. More 98% of Medicaid beneficiaries have one or more providers connected to the DC HIE. Due to strategic investments in connectivity and technical assistance major Medicaid providers, including FQHCs, and health systems are connected. While this progress is demonstrable, it has been challenging to create an effective measure of 'virtual care teams,' for which reason progress is indicated as 'incremental.'

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☐	☑	☐	☐	**4. Consistently collect and use SDOH information** to improve transitions of care, support policy and planning, and evaluate efforts to maintain and improve health equity.	**Incremental**	The Community Resource Information and Exchange (CoRIE) Initiative took the first steps to enable data sharing among DC HIE users to address individuals' SDOH. In turn, CoRIE aims to advance health equity by: screening for social risks; enabling seamless lookups of services through a centralized community resource inventory (CRI), enabling referrals with closed-loop capabilities to appropriate services, and using analytics to ensure residents needs are met. As of October 2021, four (4) organizations are contributing SDOH screening and assessment data to the HIE. Five (5) FQHCs are piloting sending ICD-10 diagnosis (z-codes) that have been mapped to existing screeners. Two (2) third-party screening/referral vendors have signed partnerships to display screening and referral data in the DC HIE. Twelve (12) organizations are using the eReferral tool to send and receive referrals for services offered through CBOs. As these services expand incrementally, DHCF will continue supporting collection and exchange of social needs data and promote equity in clinical workflows.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☐	☐	☑	☐	5. **Ensure high-quality electronic documentation** of health-related data.	**Incremental**	The Image Exchange enables providers to access core and emergent images at the point of care for Medicaid patients, facilitating care management through easy access to past image studies performed by other providers, improved clinical decision making based on prior studies, and potentially reducing duplicate studies from being ordered. Supported by a regional image exchange, the Image Exchange facilitates care management through easy access to past image studies performed by other providers, improved clinical decision making based on prior studies, and potentially reduce duplicate studies from being ordered. Currently, five (5) hospitals in DC are contributing images to the image exchange service. As more organizations shared images, utilization by providers increased. Utilization increased from roughly 703 queries to image exchange in October of 2020 to 946 during October 2021. In 2021, the HIE Operations, Compliance, and Efficiency (OCE) Subcommittee of the DC HIE Policy Board: 1) developed standards related to data elements exchanged at the time of hospital discharge to facilitate seamless transitions to post-acute settings; and 2) established benchmarks for provider accuracy, timeliness and completeness of data to guide those uploading patient data to the DC HIE. The District will disseminate these standards with provider organizations and continue the work between the DC HIE and participating providers to support and measure standardized data transfer.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☐	☐	☑	☐	**6. Increase the number of patients who engage** with their care teams using technology.	**Demonstrable**	In response to the CoVID-19 pandemic, telehealth and digital health soared. In January and February 2020, telehealth accounted for just 0.3% of outpatient claims and only 0.8% of beneficiaries had a telehealth service. By comparison, between October 1, 2020 and February 28, 2021, approximately 21% of all outpatient claims were for telehealth services, and 22% of Medicaid beneficiaries used at least one telehealth service. Particularly during the early months of the pandemic, telehealth was an essential modality of care to ensure continuity in care relationships. DHCF's emergency telehealth project, which supplied providers with laptops and telehealth platform licenses, was also cited by providers as having a demonstrable impact on the number of patients able to engage with their care teams using technology.
☐	☐	☑	☑	**7. Improve the value and efficiency of team-based care** by integrating information across care settings (clinical, behavioral, community, public health, and payers).	**Incremental**	The vast majority of providers and health systems are connected including: Eight (8) Acute Care Hospitals; Eight (8) Federally Qualified Health Centers (all); 20 Home Health Providers; 36 Long Term Care Facilities, including 15 Nursing Facilities; and 30 behavioral health sites. The extent to which sites are using the HIE to facilitate team-based care is modest to date, with the primary adopters those who have value-based incentives to coordinate care, such as health homes.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☐	☐	☐	☑	**8. Improve care coordination and transitions of care** by improving access to information collected across settings of care.	**Incremental**	Health home programs and value-based pilots are most likely to use the HIE to improve care coordination. To address transitions of care the HIE Policy Board created Technical Expert Panel, which has prioritized data elements to improve ToC across settings. In addition, DHCF has funded a two-year transition of care and readmission program led by DCHA, which includes partners from UMC, Medstar, and Howard hospitals to test strategies to reduce all-cause 30-day readmissions, supported by technology.
☐	☐	☐	☑	**9. Track quality performance** while also reducing reporting burden though use of health IT and HIE tools.	**Incremental**	DHCF implemented Pay for Performance (P4P) Measures to monitor District Federally Qualified Health Centers (FQHCs) The P4P Quality Measures include, Plan All-Cause Readmissions (PCR), Non-Emergent ER Use (NED) - these are available to FQHC population health teams for ongoing monitoring through CRISP DC Reporting Services (DC CRS). Improvements such as the DC HIE's ability to parse CCDs and the expansion of DC CRS for population health management will support monitoring reductions and improvements in equity. Over the next 3 years, DHCF and the DC HIE will enhance reports and visualization tools to strengthen communication across clinical and non-clinical settings. These reports will present demographic, health utilization, and cost metrics for patients by provider or payer panel, including the ability to monitor progress in administrative and hybrid quality measure reporting and incentive programs.

Access	Exchange	Use	Improve	District's 10 Strategic Goals for Health IT and HIE	Degree of Progress, 2018-2021 (Incremental; Demonstrable)	Explanation of Progress and Impact, 2018-2021
☐	☐	☐	☑	**10. Support interventions to reduce disparities in health outcomes** for identified priority populations and conditions in the District via access to health IT and HIE.	**Incremental**	CRISP's integration with the DOEE lead registry made lead screening data available through the DC HIE. Today, providers who access the DC Lead Registry through CRISP, either online or through their own electronic health record, have a quick and easy way to check lead screening status for patients and be alerted regarding elevated blood lead levels. Cross-agency partnerships have also supported the exchange of COVID immunization data to the CRISP Vaccine Tracker, which provides daily immunization files to CRISP DC allowing providers and payers, including DC Medicaid and Managed Care Organizations, to track and document vaccine outreach via the Vaccine Tracker, which allows patient panel view of receive vaccine doses and an analytics tool provides statistics on vaccination summary, including age, race/ethnicity, wards, and other demographics. Planned development efforts will enable advanced analytic capabilities to support interventions for priority population and division. This will include predictive risk models based on claims and clinical data to support interventions; gauge social need/risk; and risk stratify to identify high-cost, high-utilization members with chronic diseases, and other disparities. Ultimately the goal is to support measurement-based care capturing and monitoring patient reported outcomes to successfully reduce disparities in care and outcomes.

Appendix J: SMHP Roadmap Priority Area Progress Through DC HIE Core Capabilities

The table below further assesses the utilization and impact of each the six DC HIE Core Capabilities, which support priority areas outlined in the 2018 SMHP, and outlines stakeholder priorities for enhancements in 2022 and 2023.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Critical Infrastructure	Admit Transfer Discharge (ADT) Alerts	Support Transitions of Care	2014	Yes	The CRISP Encounter Notification Service (ENS) enables healthcare providers to receive real-time ADT alerts when that provider's active patient has an encounter with one of the organizations sharing encounter information to CRISP (such as hospitals, skilled nursing facilities, and ambulatory providers).	ADTs received from nearly 300 diverse, external sources; October 2021, 610 District organizations receive alerts through ENS, which is up from 372 organizations in October 2018. The DC HIE Technical Evaluation Panel (TEP) on Transitions of care is developing a community-led standard for acute care transitions that may serve as a model for future.	*Develop and implement data and exchange standards to promote consistency, completeness, and timeliness of ADT information.* *Improve consistency, completeness, and timeliness of information that is uploaded to the DC HIE and made available through the ENS.*

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	Health Records		2019	Yes	Health records provides access to near real-time clinical information from all CRISP Participants. Laboratory, Radiology, – and Clinical Notes from a variety of sources can be accessed in order to have a comprehensive view into a patient's clinical history.	Health Records allows members of a care team to conduct single patient look ups and get a comprehensive view into both current and historical patient clinical records. This data is particularly useful in coordinating care for new patients and cutting duplicative healthcare costs by allowing providers to see laboratory and radiology data from past encounter. Roughly 45% of all CRISP DC usage is from end users accessing Health Records. District FQHCs, ambulatory care settings, hospitals, and payors are the most common users of Health Records.	***Continue outreach and technical assistance*** to increase connectivity and expand and enhance the type and amount of data that is shared through the HIE as visit types change and organizations grow. ***Enable clinical document parsing for discrete data.*** Implementation of technology that allows for the parsing of discrete data fields from static documents. Discrete data fields can be used in reporting, analytics, and other interfaces within the CRISP DC platform.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	Patient Care Snapshot		2019	Yes	The Patient Care Snapshot combines critical information relevant to the provider's role in the patient's care. It displays data from a variety of sources to provide an at-a-glance view of the patient's clinical history.	Since its launch in 2019, use Snapshot has increased 359% among DC HIE users. District FQHCs, ambulatory care settings, hospitals, and payors are the most common users of Snapshot to access and use this tool. The Snapshot tool was adapted and has been deployed by CRISP in Maryland, West Virginia, and Connecticut.	*Enhance data visualizations in the Patient Care Snapshot by leveraging data elements parsed from clinical documentation*, creating more robust or additional snapshot categories (i.e. discharge medications and vital signs).

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	Image Exchange		2019	Yes	The Image Exchange enables providers to access core and emergent images at the point of care for Medicaid patients, facilitating care management through easy access to past image studies performed by other providers, improved clinical decision making based on prior studies, and potentially reducing duplicate studies from being ordered. Diagnostic images are securely stored on servers located at each connected hospital's local environment. Images taken within the last 30 days are made available to all authorized CRISP users in seconds while images older than 30 days are available within minutes.	Supported by a regional image exchange, the Image Exchange facilitates care management through easy access to past image studies performed by other providers, improved clinical decision making based on prior studies, and potentially reduce duplicate studies from being ordered. Currently, 5 hospitals in DC are contributing images to the image exchange service. As more organizations shared images, utilization by providers increased. Utilization increased from roughly 703 queries to image exchange in October of 2020 to 946 during October 2021. While the technical resources are robust and provide a rapid service, utilization remains somewhat limited.	*Expand image availability* including imaging specific to cardiology systems and static renderings of EKG tracings. *Integrate images from other states* outside of Maryland, DC, and West Virginia.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Advanced Population Health Analytics	CRISP DC Reporting Services	Population Health Management	2020	No	CRISP DC Reporting Services (DC CRS) tool is an analytics platform accessible within existing DC HIE infrastructure that is intended to support population-level and panel-level management through clinical and administrative data for analysis and interventions.	As of October 2021, DC CRS consists of a small set of four Pay for Performance (P4P) quality measure reports available to all District Federally Qualified Health Centers (FQHCs) to guide outreach and care planning and support care management interventions.	*Expand availability of basic analytic capabilities in DC CRS*, including demographic, health utilization and cost metrics, comparisons across populations. *Support capabilities that easily identify patients who meet criteria for a specific action* to improve patient health, risk stratification to identify high-cost, high-utilization, members with chronic disease; *Implement reporting to monitor progress* in quality measures reporting and incentive programs. *Develop and implement advanced analytic capabilities*, such as measurement based care and predictive risk models to support interventions. *Engage broad group of health system stakeholders in development* of new reports and provide technical assistance to maximize use.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Registry and Inventory	Care Management Registry	Support Transitions of Care	2019	No	The specialized Care Management Registry allows providers to view if a patient is enrolled in a care management program and offers details regarding that program. When a provider submits a panel attributing patients to a given program, and provides specific information on that program, the program will appear in the CRISP Care Team widget.	District FQHCs and ambulatory care settings often use this registry upon hospital discharge for transitions of care. Coordination between healthcare organizations as well as MCO care management can also occur through the visualization of care management data. The care management registry increases the coordination of care between different organizations for vulnerable patients by providing a more holistic view into the patient's care team. As of October 2021, there were 2,526 unique attributed patients in the Specialized Care Management Registry, across five care programs.	***Expand Care Management Registry Use Cases.*** Work closely with district agencies and health care organizations to understand how they provide care management and determine the technical feasibility of sharing that data through the HIE.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	Community Resource Inventory	Social Determinants of Health	2021	No	CRI is a District-wide publicly available directory of shared resources reflecting programs and organizations in the community. It is designed to leverage and support existing resource directory information systems in the District rather than compete to replace them.	The CRI live prototype (http://dc.openreferral.org) currently contains approximately 500 records including programs and organizations, and represents directories contributed by District organizations and reflects services offered by the DC PACT Coalition. As of October 2021, 2 District Agencies are actively testing the CRI prototype to manage their own domains and inventory data.	*Enable user access and integration of CRI* within a larger DC HIE Infrastructure. *Support necessary data quality and user experience enhancements* for updating CRI records within CRISP and public-facing CRI website. *Develop and integrate a seamless CRI lookup capability* within the SDOH screening and referral functions developed through the CoRIE initiative. *Support continued engagement of District resource inventory data stewards* to enforce the quality of feeds sent and received via the CRI, and develop a long-term financial sustainability model to support participation in the CRI.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	Advanced Care Planning	Public Health	TBD	No	The Advance Care Planning project developed infrastructure for electronically exchanging advance directives and electronic Medical Orders for Scope of Treatment (eMOST) forms District-wide, via the DC HIE.	This capability has not been launched yet. A partnership is in place between the DC HIE and District agencies to launch this initiative in FY22.	*Enable providers and caretakers to access their patient's advance directives* via the DC HIE. *Implement application programming interface (API) connections* between A/D Vault and commonly used EHRs in the District to share eMOST, Psychiatric, and other advance directive forms. *Enable patient access to A/D Vault's patient portal* to document and manage their advance directives *Support API connections to integrate Fire and Emergency Medical Services* and enable point of care access to the patient's advance directives.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Simple and Secure Messaging	Provider Directory	Support Transitions of Care	2019	Yes	The Provider Directory serves as a trusted master index of health care providers that displays contact information, preferred method of receiving referrals, and how best to reach that providers.	Providers are able to share information securely with other providers, thereby easing transitions of care for patients. The Provider Directory is updated periodically from multiple data feeds such as hospitals or credentialing organizations. As of October 2021, the Directory includes information from hospitals and ambulatory practices and is working to include information from MCOs.	*Expand outreach and engagement to promote the provider directory* - few providers know that the Directory exists and, as a result, there has been very limited use to date. *Integrate with local data District-based data resources* including District health professional and facility licensure database, MCO/payer provider directories, and health system credentialing systems. *Establish processes for maintaining the Directory to ensure accuracy* of information. *Develop and implement any remaining features* needed to meet the requirements of the CMS Interoperability and Patient Access Rule *Develop the secure messaging component of the Directory* to support the eReferral process.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Consent Management	eConsent Management Solution	Behavioral Health Transformation	2021	No	The eConsent management solution enables entities participating in the DC HIE to support Medicaid beneficiaries' ability to create, manage, sign, and revoke 42 CFR Part 2 compliant consent.	As of October 2021, the eConsent management solution has been piloted by 12 SUD provider organizations, including ASARS providers, FQHCs, MAT providers, IMD, DBH-certified community services providers, and hospital-based and affiliated providers. Over 100 consents have been captured through the DC HIE.	*Include addition of key elements of consent authorization*, including description of protected health information (PHI) to be used and disclosed, the person authorized to make the use of the disclosure, the individual the covered entity will make the disclosure to, and the expiration date. *Enable HIPAA authorization to support patient directed data sharing* with non-covered entities (CBOs, social services agencies, etc.). *Enable multi-select recipient function on the consent form* to support patient consent to multiple organizations. *Enable ability to capture consent to receive telehealth services.*

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
Screening and Referral (e.g. Social Determinants of Health)	Screening for Social Needs	Social Determinants of Health	2021 (piloted)	No	Enables organizations to export social needs assessment or conditions (e.g. diagnoses indicating health-related social conditions) to be displayed at the point of care. Direct entry screening tool within the DC HIE allows organizations to conduct and enter screenings and assessments electronically.	Enables teams to understand which patients would benefit from additional screening, potentially reduces duplication of effort, and avoid causing patients unnecessary distress by re-asking sensitive questions. CoRIE partners engaged 5 FQHCs to test mapping ICD-10 diagnosis codes for SDOH (z-codes) to existing social needs screeners. As of October 2021, four (4) organizations are contributing screening and assessment data to the DC HIE.	*Ensure that nationally recognized screeners and assessment tools are built into DC HIE* infrastructure and available to end users. *Display screening and assessment results within the DC HIE* in a format that enables providers to review up-to-date information, identify needs, identify potential community resources, and inform care coordination. *Engage stakeholders to develop a minimum set of common SDOH screening questions* in the housing, nutrition, and behavioral health domains that promote consistency in data collection, resident trust, and exchange of information across clinical and non-clinical providers. Doing so will facilitate more consistent screening and follow-up across the District.

Core Capability	Tool	SMHP Priority Area	Launch Date	CMS MES Certified?	Description	Utilization and Impact	Stakeholder Priorities for Enhancement in 2022-2023
	eReferral for Social Needs	Social Determinants of Health	2021 (piloted)	No	The eReferral tool is designed to allow providers to refer patients to specific programs offered by CBOs, including services that address a patient's social needs or address underlying causes of poor health outcomes.	Providers are able to send social need referrals to community-based organizations, track follow-up to services, and receive disposition on referrals made. Has been piloted by a small group of providers and CBOs as part of the CoRIE initiatives. As of October 2021, 12 provider organizations and CBOs are using the CRISP referral tool. 2 third-party vendors and 1 major health system have signed MOUs to display referral history in the DC HIE	***Expand outreach, engagement, and technical assistance*** to onboard broader groups of providers and increased participation by District CBOs. ***Enable organizations using a third-party social need referral platform*** to share referrals and responses with the DC HIE to display at the point of care. ***Engage health system stakeholders, including CBOs, to test referral protocols*** based on mapping social needs screening dispositions to interventions. ***Continue supporting the necessary technical integration*** across the screening, CRI, and eReferral components already build into DC HIE infrastructure, thereby enabling seamless screening, resource lookup, and send/receiving referrals.

Appendix K: DC Digital Health Core Competencies

The DC Digital Health Core Competencies are an effort to align DHCF's current and future digital health technical assistance efforts in the District with guidance from the priorities set forth in the DC State Medicaid Health IT Plan (SMHP). Pursuant to the CMS Interoperability and Patient Access Rule, increasing emphasis is placed on the knowledge and skills needed to ensure a broader understanding and appropriate use of digital health resources with the goal of promoting digital health literacy and effective use of digital health tools among Medicaid providers and beneficiaries in the District.

The DC Digital Health Core Competencies comprise three main priority areas: 1) Digital Health Proficiency to Support Patient-Centered Care; 2) Health and Health System Knowledge; and 3) Leadership and Management Skills—each with its own set of sub-competencies and objectives.

On February 3, 2022, the DC HIE Policy Board voted to approve of the establishment of the DC Digital Health Core Competencies, recommending that DHCF require all DHCF funded digital health technical assistance programs to implement relevant elements of the core competencies as one component of program goals. The funding recipients shall coordinate with DHCF to determine which competencies, sub-competencies, and objectives are applicable to their respective programs.

Competency 1: Digital Health Proficiency to Support Patient-Centered Care		
	Sub-Competency	**Objectives**
1	Health Information Exchange (HIE)	a. Understand the function and structure of the DC Health Information Exchange. b. Identify benefits/risks of HIE for patients, providers, and government. c. Understand how DC HIE "use cases" are developed, governed, and integrated into workflow and patient interactions. d. Develop awareness of local and regional HIE entities, and national networks.

2	Electronic health record (EHR) systems	a. Acquire knowledge of elements of a typical EHR system. b. Describe common and distinguishing functionalities of ONC-certified EHR systems. c. Describe the EHR functionality of messaging among different vendor systems. d. Describe the procedures for billing supported by EHR vendor systems as well as current billing code systems.[1] e. Have awareness of current industry data interoperability standards.[2] f. Acquire proficiency with the setup and use of common patient portals and secure messaging. [1]CPT - CPT Codes - Current Procedural Terminology - AAPC; ICD.Codes - Your Free Medical Coding Resource; HCPCS Codes Level II - 2022 Complete Reference [2]HIMSS: Interoperability Standards
3	Telehealth	a. Understand the purpose of utilizing telehealth modalities in patient care, and the regulatory structure of telehealth in the District. b. Understand approaches and reimbursement of remote patient monitoring. c. Acquire proficiency with the setup and use of common patient portals, secure messaging, video conferencing, and mobile health apps. d. Understand how to deliver targeted assistance to implement telehealth and support the continued adoption efforts of digital health tools. e. Evaluate the differing needs to providing telehealth modalities to two groups of stakeholders: 1) providers and office staff and 2) patients and caregivers.

Competency 2: Health and Health System Knowledge

	Sub-Competency	Objectives
1	Social determinants of health and related health disparities	a. Define and explain 'social determinants of health' and the concept of health disparities and inequities. b. Analyze how the environment and personal health are interrelated and how specific factors (determinants) contribute to health disparities. c. Identify groups that are most affected by health disparities. d. Evaluate how health disparities impact people in the local community (school, town, etc.) and at a national level.
2	Privacy and security of health data (HIPAA)	a. Define and discern the differences between privacy, confidentiality, and security. b. Discuss methods for using information technology to protect privacy and confidentiality. c. Describe and apply privacy, confidentiality, and security under the tenets of HIPAA Privacy and Security rules, as well as more restrictive federal, state, and local privacy and security policies (e.g., 42 CFR Part 2, DC Mental Health Information Act, etc.). d. Discuss the intersection of a patient's right to privacy with the need to share and exchange patient information.
3	Health literacy/health behavior and behavior change	a. Describe an overview of the current state of patient engagement and policy goals for the future. b. Discuss best practices for behavior change interventions. c. Compare behavior change models (e.g. Health Behavior Model, Transtheoretical/Stages of Change Model, Theory of Reasoned Action/Theory of Planned Behavior, Chronic Care Model, etc.). d. Design individual behavior change interventions. e. Promote and evaluate behavior change.

Competency 2: Health and Health System Knowledge		
	Sub-Competency	**Objectives**
4	Value-based care	a. Describe in general terms the features of the fee-for-service health care system and outline why this payment model is changing. b. Describe the overall value and goals of value-based care from various stakeholder perspectives. c. Discuss the types of health information technology that support value-based care. d. Define care management and explain why it is central to value-based care. e. Discuss how Health IT can be used to support appropriate care and decrease waste/overutilization. f. Identify the characteristics and categories of quality metrics and how they are calculated.

Competency 3: Leadership and Management Skills		
	Sub-Competency	**Objectives**
1	Process change implementation and evaluation skills	a. Understand principles of quality improvement, including knowledge of PDSA cycles and patient safety. b. Propose strategies to gain acceptance of changes in work processes, including patient interactions. c. Develop a process change implementation plan for a health care facility that includes tasks to be accomplished, responsible parties for tasks, a timeline, and the human and material resources needed. d. Outline elements of an evaluation plan that will help determine the success of a workflow process change implemented in a health care facility. e. Describe how the workflow analyst can help a health care facility continually improve its workflow processes, based on results of ongoing evaluations.
2	Customer service skills	a. Identify ethical and cultural Issues related to communication and customer service in the health care setting b. Describe the different facets of health IT customer service. c. Identify health IT customers and stakeholders. d. Identify health IT customer and stakeholder needs based on roles and context.

Competency 3: Leadership and Management Skills		
	Sub-Competency	**Objectives**
3	Effective communication and relationship building skills	a. Explain the purpose and goals of professional communication. b. Discuss characteristics of effective and ineffective communication. c. Identify communication needs of common roles in health care. d. Explain the importance, elements, and processes of patient-physician communication. e. Explain the importance of interpretation and translation services and assistive communication devices, as well as how to access them.
4	Cultural responsiveness	a. Identify different dimensions of diversity. b. Discuss the value of diversity. c. Describe ways to promote an inclusive work and patient care environment. d. Identify common cross-cultural differences. e. Describe ways to communicate effectively with individuals with disabilities. f. Discuss key elements of cultural responsiveness in health care.

Glossary of Terms

Click on the term for the source and additional information.

21st Century Cures Act: Enacted by the 114th United States Congress and signed into law by President Obama on December 13, 2016, the 21st Century Cures Act includes a number of provisions that enhance electronic health information sharing and promote greater interoperability.

42 CFR Part 2: Federal regulation on The Confidentiality of Substance Use Disorder Patient Records, 42 CFR Part 2 (Part 2), that protects any information obtained by a "federally assisted" substance use treatment program that can directly or indirectly identify an individual as receiving or seeking treatment for substance use. This can include information beyond treatment records, such as name, address, or social security number. Part 2 applies to any individual or entity that is federally assisted and holds itself out as providing, and provides, alcohol or drug abuse diagnosis, treatment or referral for treatment (42 CFR § 2.11). Most drug and alcohol treatment programs are federally assisted. When one regulation imposes a stricter standard than the other, the covered entity must follow the stricter standard. Generally, 42 CFR Part 2 imposes more strict standards than does HIPAA. 42 CFR Part 2's general rule places privacy and confidentiality restrictions upon substance use disorder treatment records.

Accountable Care Organization: A network of doctors and hospitals who share financial and medical responsibility for providing care to their patients.

Admission-Discharge-Transfer (ADT): The Health Level 7 (HL7) message containing patient information and trigger events such as patient admit, discharge or transfer. ADT messages have a standard format to define the trigger event to include the message header, event type, patient identification, additional demographics, and patient visit information (diagnosis, procedure, etc.). ADT data can alert treating providers if their patient has been admitted to the hospital, enabling timely follow-up.

Advance Care Planning: A process that aims to inform and facilitate medical decision making that reflects patients' preferences in the event that patients cannot communicate their wishes. These preferences are often captured into an advance director or other types of forms.

Advance Directive: A written statement of an individual's wishes regarding medical treatment, often including a living will, made to ensure those wishes are carried out should the individual become incapacitated and unable to speak for themselves.

American Rescue Plan Act (ARPA): The American Rescue Plan Act of 2021, also called the COVID-19 Stimulus Package or American Rescue Plan, is a US$1.9 trillion economic stimulus bill passed by the 117th United States Congress and signed into law by President Joe Biden on

March 11, 2021, to speed up the country's recovery from the economic and health effects of the COVID-19 pandemic and the ongoing recession.

Certified Electronic Health Record Technology (CEHRT): In order to efficiently capture and share patient data, health care providers need an electronic health record (EHR) that stores data in a structured format. Structured data allows health care providers to easily retrieve and transfer patient information and use the EHR in ways that can aid patient care. CMS and the Office of the National Coordinator for Health Information Technology (ONC) have established standards and other criteria for structured data that EHRs must meet in order to qualify for use in the Promoting Interoperability Programs.

Claims Data: The most prevalent source for structured health data. Paid claims can help providers understand which services were rendered in a specific care setting. Claims may also reduce duplication of services.

Clinical Data: Is most commonly exchanged in HIEs via Continuity of Care Documents (CCDs), which provide a common, structured format to share clinical data from the EHR. Elements of a CCD include structured information on vitals (e.g. BMI or blood pressure), lab test results, and medications.

CMS Interoperability and Patient Access Rule: Promulgated in 2020 as part of the Trump Administration's MyHealthEData initiative, this final rule is 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 (FFEs). This 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 payers and providers.

Community Resource Information and Exchange (CoRIE) Initiative: The DC Community Resource Information Exchange (CoRIE) is an interoperable ecosystem that connects health and social service providers through existing DC HIE infrastructure and *without* requiring a single District-wide technology platform. CoRIE is committed to supporting and sustaining technical solutions and enabling coordinated whole person care across health, human, and social service providers in the District. CORIE consists of four major components enabling social needs screening and closed-loop referrals, a District-wide community resource directory, and social needs analytics - all through a vendor agnostic approach.

Community Resource Inventory (CRI): The DC Community Resource Inventory is a District-wide publicly available directory of resources reflecting regional programs and organizations in the community.

Community Service Provider (CSP): A provider who offers a range of services including medication management support, counseling, and community support to address issues such as health, housing, transportation, food insecurity, education, and employment.

Consent management: Consent management is a system, process, or set of policies that enables patients to choose what health information they are willing to permit their healthcare providers to access and share. Consent management allows patients to affirm their participation in electronic health initiatives such as patient portals, personal health records (PHR), and health information exchange (HIE). Electronic Patient Consent Management is an attempt to balance the risks to patient privacy with the benefits of health information exchange and interoperability.

Continuity of Care Document (CCD): A harmonized format and interoperable standard for exchanging clinical information (including patient demographics, medications and allergies) among providers to improve patient care, enhance patient safety and increase efficiency.

Chesapeake Regional Information System for our Patients (CRISP): CRISP is the designated health information exchange (HIE) serving the District of Columbia sharing health information among participating doctors' offices, hospitals, care coordinators, labs, radiology centers, community-based organizations, managed care organizations and other healthcare providers through secure, electronic means.

CRISP DC Reporting Services (CRS): The CRISP DC Reporting Services (DC CRS) tool is an analytics platform within existing DC HIE infrastructure that is intended to support population-level and panel-level management through clinical and administrative data for analysis and interventions. DC CRS is capable of producing multiple types of reports and analytic tools using clinical and administrative data sets to support population health and care coordination.

DC HIE: The District's statewide health information exchange, an interoperable system of registered and designated HIE entities that facilitates person-centered care through the secure, electronic exchange of health information among participating organizations supported by a District-wide health data infrastructure – as established by Chapter 87, District of Columbia Health Information Exchange, of Title 29, Public Welfare, of District of Columbia Municipal Regulations.

Designated HIE: An HIE entity that has applied for and received designation from the Department of Health Care Finance in accordance with Chapter 87, District of Columbia Health Information Exchange, of Title 29, Public Welfare, of District of Columbia Municipal Regulations.

Digital health: Digital health is a broad scope of categories that include mobile health (mHealth), health information technology (Health IT), wearable devices, telehealth and telemedicine, and personalized medicine.

eClinical Quality Measure (eCQM): A standard for quality measures from electronic health records (EHR) and/or health information technology systems to measure health care quality. The Centers for Medicare & Medicaid Services (CMS) use eCQMs in a variety of quality reporting and incentive programs. eCQMs are an improvement over traditional quality measures because if the EHRs are not used, the work to gather the data from medical charts, e.g. "chart-abstracted data," is very resource intensive and subject to human error.

Electronic Health Records (EHR): An EHR is a digital version of a patient's paper chart. EHRs are real-time, patient-centered records that make information available instantly and securely to authorized users.

Eligible Professional (EP): Medicaid providers who meet eligibility requirements to participate in the EHR Incentive Programs. Eligible provider types include: Physician, Dentist, Certified nurse-midwife, Nurse Practitioner and a (Physician Assistant practicing in a Federally Qualified Health Center or a Rural Health Center led by a Physician Assistant). Eligibility requirements dictate that at least 30% of patient volume is Medicaid (20% for pediatricians) and you adopt, implement or upgrade to certified EHR technology to demonstrate meaningful use.

Encounter Notification Services (ENS): A component of CRISP's critical infrastructure, ENS enables health care providers to receive real-time alerts when that provider's active patient has an encounter with one of the organizations sharing encounter information to the DC HIE.

Fast Healthcare Interoperability Resources (FHIR): A standard that defines how healthcare information can be exchanged between different computer systems regardless of how it is stored in those systems. It allows healthcare information, including clinical and administrative data, to be available securely to those who have a need to access it, and to those who have the right to do so for the benefit of a patient receiving care. The standards development organization HL7® (Health Level Seven®3) uses a collaborative approach to develop and upgrade FHIR.

Health data utility model: A public good enabled through cross-sector partnerships that: 1) provide shared services; and 2) foster a culture of share responsibility for ensuring the availability and quality of actional information. In this model, the primary value of the tools and resources is the extent to which each can draw data from across the network to support user stories – real world examples – that demonstrate ways health information exchange is essential to high-quality, person-centered care.

Health Information Exchange (HIE): The movement of health information electronically across multiple organizations.

Health Information Technology (Health IT): The programs, services, technologies and concepts that store, share, and analyze health information in order to improve care.

Health Information Technology for Economic and Clinical Health Act (HITECH): Enacted as part of the American Recovery and Reinvestment Act of 2009, HITECH was signed into law on February 17, 2009, to promote the adoption and meaningful use of health information technology. It also addresses the privacy and security concerns associated with the electronic transmission of health information, in part, through several provisions that strengthen the civil and criminal enforcement of the HIPAA rules.

Health Insurance Portability and Accountability Act of 1996 (HIPAA): HIPAA is a series of regulatory standards that outline the lawful use and disclosure of protected health information (PHI).

HIE entity: An entity that creates or maintains an infrastructure that provides organizational and technical capabilities in a system to enable the secure, electronic exchange of health information among participating organizations not under common ownership.

Home and Community-Based Services (HCBS): Types of person-centered care delivered in the home and community, rather than institutions of other isolated settings. A variety of health and human services can be provided. HCBS programs address the needs of people with functional limitations who need assistance with everyday activities, like getting dressed or bathing. HCBS are often designed to enable people to stay in their homes, rather than moving to a facility for care. HCBS programs generally fall into two categories: health services and human services. HCBS programs may offer a combination of both types of services and do not necessarily offer all services from either category.

Information blocking: In general, information blocking is a practice by a health IT developer of certified health IT, health information network, health information exchange, or health care provider that, except as required by law or specified by the Secretary of Health and Human Services (HHS) as a reasonable and necessary activity, is likely to interfere with access, exchange, or use of electronic health information (EHI).

Interoperability: As cited in section 4003 of the 21st Century Cures Act health information technology that— "(A) enables the secure exchange of electronic health information with, and use of electronic health information from, other health information technology without special effort on the part of the user; "(B) allows for complete access, exchange, and use of all electronically accessible health information for authorized use under applicable State or Federal law; and "(C) does not constitute information blocking as defined in section 3022(a)."

Long-Term Acute Care: Specialized acute care hospitals that provide care to patients with an average length of stay greater than 25 days. These hospitals are known as Long-Term Acute Care Hospitals (LTACH) and provide care beyond that of inpatient rehabilitation or skilled nursing facilities.

Long-Term Care: The medical and social services care a chronically ill person receives to help them with activities of daily living (ADL). Long-term care providers include home care agencies, nursing homes, assisted living facilities.

Long-Term Services and Supports: Include, but are not limited to, nursing facility care, adult daycare programs, home health aide services, personal care services, transportation, and supported employment as well as assistance provided by a family caregiver.

Managed Care Organization (MCO): A health care delivery system organized to manage cost, utilization, quality, and contracts with insurers or self-insured employers. It uses a specific provider network, services and products to deliver managed health care.

Measurement-based care (MBC): The practice of basing clinical care on client data collected throughout treatment. MBC provides insight into treatment progress, highlights ongoing treatment targets, reduces symptom deterioration, and improves client outcomes.

Medicaid EHR Incentive Program (MEIP): A program that provides incentive payments to Medicaid eligible professionals and hospitals as they adopt, implement, upgrade or demonstrate meaningful use with certified EHR technology.

Medical Orders for Scope of Treatment (MOST): A documented provider's order that helps patients keep control over medical care at the end of life. In DC, the Medical Orders for Scope of Treatment (MOST) program provides a more comprehensive approach, empowering terminally-ill patients the right to make decisions on their end-of-life care options, in consultation with their DC-licensed authorized healthcare provider (Physician (MD/DO) or Advanced Practice Registered Nurse (APRN) only).

Mobile health (mHealth): The use of mobile and wireless devices (cell phones, tablets, etc.) to improve health outcomes, health care services, and health research.

Non-clinical care partners: Non-clinical patient care partners are fundamentally responsible for ensuring the patient is able to manage her own health and improve overall wellness. And while that overarching priority does create overlap between patient navigators, health coaches, and community care workers, these career paths also have their own distinctions.

Opt-in: When an individual makes an active indication of choice, such as checking a box indicating willingness to share information with third parties such as an HIE.

Opt-out: A health care consumer's election not to participate in the HIE, so that the HIE entity shall not disclose such health care consumer's protected health information, or data derived from such health care consumer's health information, except as consistent with this chapter.

Participating Organization: An entity that enters into an agreement with an HIE entity that governs the terms and conditions under which its authorized users may use, access, or disclose protected health information by the HIE entity.

Patient portal: A patient portal is a secure online website that gives patients convenient, 24-hour access to personal health information from anywhere with an Internet connection.

Pay for Performance (P4P): Incentive programs that reward health care providers for achieving service delivery goals, according to established health quality or efficiency-standards.

Population Health Management: The activities that a clinician or care team performs to provide care management for a group of patients for which they are accountable, sometimes referred to as a "patient panel." Health IT assists providers by giving them a high-level view of defined health trends and needs across the patients in their practice through analytic tools. Specific functions include list creation and health registries that catalogue patients with a condition that requires action, as well as analytics tools that help providers monitor quality of care.

Provider Directory: The DC HIE Provider Directory is a comprehensive database that is continuously updated from official data sources including NPI, PECOS, hospitals, other local and federal databases, as well as from individual practitioners and organizations. The Directory contains up-to-date information on local healthcare providers, the organizations they work for, their hospital affiliations, work locations and contact information. The directory is available in a variety of formats including the CRISP Unified Landing Page, flat file for upload into EHRs, and through FHIR® APIs.

Public Health: Public health activities assess and develop interventions to improve the health of all residents who share a specific geography, condition, or other characteristic. Health IT allows data from providers across the District to be efficiently and electronically shared, analyzed, and acted upon to design timely and effective interventions to improve the health of District residents.

Qualified Service Organization Agreement: A two-way agreement between a Part 2 program and the entity providing the service. The QSOA authorizes communication only between the Part 2 program and QSO.

Remote Patient Monitoring (RPM): The collection, storage, and evaluation of health information through live monitoring via devices that electronically transmit information from the patient's location to the provider.

Registered HIE: An HIE entity that has applied for and received registration from the Department of Health Care Finance in accordance with Chapter 87, District of Columbia Health Information Exchange, of Title 29, Public Welfare, of District of Columbia Municipal Regulations.

Secondary use: The use, access, or disclosure of health information through the registered HIE entity that is not for a Primary Use; subject to any limitations under HIPAA or federal law.

Self-reported data: Includes information, such as health status, collected directly from individuals.

Single Sign-On (SSO): The functionality that allows a user to sign on to multiple related, yet independent software systems with a single user identification and password.

Social determinants of health (SDOH): The conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

State-Level Registry (SLR): Refers to the District's Medicaid EHR Incentive Program's home page where eligible professionals register and attest for Meaningful Use.

Telehealth: The delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies.

Third-party system: Hardware or software provided by an external entity to a participating organization, which interoperates with an HIE entity to allow an authorized user access to information through the HIE entity and may include an electronic health record system.

Transitions of Care (TOC): the movement of a patient from one setting of care to another. Settings of care may include hospitals, ambulatory primary care practices, ambulatory specialty care practices, long-term care facilities, home health, and rehabilitation facilities. Transitions increase the risk of adverse events due to the potential for miscommunication as responsibility is given to new parties.

Trusted Exchange Framework and Common Agreement (TEFCA): Published by the Department of Health and Human Services Office of the National Coordinator for Health IT (ONC), the overall goal of TEFCA is to establish a universal floor of interoperability across the country. The Common Agreement will establish the infrastructure model and governing approach for users in different networks to securely share basic clinical information with each other—all under

commonly agreed-to expectations and rules, and regardless of which network they happen to be in. The Trusted Exchange Framework describes a common set of non-binding, foundational principles for trust policies and practices that can help facilitate exchange among health information networks.

Value-Based Purchasing (also Value-Based Payment): Incentive programs that link providers' payments to improved performance, holding health care providers accountable for delivering cost effective and quality care. Typically, the highest performing providers are the most highly compensated.

Wearable devices: Wearable technologies that enable the continuous monitoring of human physical activities and behaviors, as well as physiological and biochemical parameters during daily life. The most commonly measured data include vital signs such as heart rate, blood pressure, and body temperature, as well as blood oxygen saturation, posture, and physical activities through the use of electrocardiogram (ECG), ballistocardiogram (BCG) and other devices. Some wearable technology applications are designed for prevention of diseases and maintenance of health, such as weight control and physical activity monitoring. Wearable devices are also used for patient management and disease management.

References

[1] Health Insurance Coverage Overall and by State (2019). *Kaiser Family Foundation*. Retrieved from: https://www.kff.org/other/state-indicator/total-population/?activeTab=map&currentTimeframe=0&selectedDistributions=uninsured&sortModel=%7B%22colId%22:%22Uninsured%22,%22sort%22:%22asc%22%7D#notes

[2] "What is Telehealth?" *NEJM Catalyst.* (1 February 2018). Retrieved from: https://catalyst.nejm.org/doi/full/10.1056/CAT.18.0268

[3] Institute for Health Policy and Leadership. (August 2018). "Issue at a Glance: Telehealth in California." Retrieved from: https://ihpl.llu.edu/sites/ihpl.llu.edu/files/docs/issue-at-a-glance/august_2018_telehealthincalifornia.pdf

[4] Health Insurance Coverage Overall and by State (2019). *Kaiser Family Foundation*. Retrieved from: https://www.kff.org/other/state-indicator/total-population/?activeTab=map&currentTimeframe=0&selectedDistributions=uninsured&sortModel=%7B%22colId%22:%22Uninsured%22,%22sort%22:%22asc%22%7D#notes

[5] DC Health. (2018) *Health Equity Report for the District of Columbia.* Retrieved from: https://dchealth.dc.gov/publication/health-equity-report-district-columbia-2018.

[6] DC Healthy Communities Collaborative. (2019) *DC Community Health Needs Assessment*. Retrieved from: https://ourhealthydc.org/dc-chna/.

[7] DC Health. (2020). *DC Healthy People 2020.* Retrieved from: https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DOH_AnnualReport_011518_INTERACTIVE%20FINAL%20Reduced.pdf

[8] DC Health. (2018) *Health Equity Report for the District of Columbia.* Retrieved from: https://dchealth.dc.gov/publication/health-equity-report-district-columbia-2018.

[9] Scott K, Lewis CC. "Using Measurement-Based Care to Enhance Any Treatment". Cognitive Behavioral Practice. 2015 Feb;22(1):49-59. Retrieved from: https://pubmed.ncbi.nlm.nih.gov/27330267/

[10] Currently the CRISP Portal uses a technology called the Unified Landing Page that allows users to utilize a single log in and patient search to access various CRISP tools and services. Separately, our EHR users access the CRISP data using a separate user experience called the CRISP InContext App. In early 2022 CRISP will be migrating the CRISP Portal away from the Unified Landing Page and into a custom user experience that mirrors the InContext App. There will be no loss of functionality and no need for users to do anything special during this migration. The user experience will be upgraded and will provide for a more seamless way to move between various CRISP applications.

[11] Office of the National Coordinator for Health Information Technology. Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Roadmap. Retrieved from: https://www.healthit.gov/sites/default/files/hieinteroperability/nationwide-interoperability-roadmap-final-version-1.0.pdf.

[12] National Committee for Quality Assurance. (2017). Plan All-Cause Readmissions. Retrieved from: http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2017-table-of-contents/plan-readmissions

[13] AHRQ Quality Indicators. (2017). *Prevention Quality Chronic Composite: Prevention Quality Indicator 92*. Retrieved from: https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V70/TechSpecs/PQI_92_Prevention_Quality_Chronic_Composite.pdf.