Advancing Health Data Sharing in Hawaii

Community Workgroup Report

Successes, challenges, and gaps in health information exchange and recommendations to increase interoperability in Hawaii

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Prepared by eSSee Consulting in collaboration with the HHIE Community Data Sharing Workgroup

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Executive Summary

Hawaii's population, from keiki to kupuna, receive health care from multiple care settings across the Hawaiian Islands. It is critical for providers to have access to complete, real-time health data on their patients, regardless of care setting, to provide best patient care.

This community workgroup report lays out the current state of interoperability in Hawaii, identifies gaps and needs in data sharing, details financial, technical, and other challenges that providers face when exchanging health information, and provides recommendations for how to achieve a robust, interoperable health data exchange system in Hawaii.

Health information exchange (HIE) improves patient care, betters community health, supports clinicians, and lowers overall healthcare costs. Healthcare stakeholders in Hawaii have made significant investments towards improving health information exchange, including the founding of Hawaii Health Information Exchange (HHIE) in 2006. HHIE connects all of Hawaii's acute care hospitals, over one hundred physician practices, and other key facilities such as laboratories and long-term care homes, and securely exchange patient-level health and medical records between health plans, health systems, and providers. Most importantly, HHIE makes available critical real-time data on a patient's medical history, combined from multiple care settings, to providers at the point of care, allowing them to be more fully informed and to make better care decisions in the moment of care. Additionally, HHIE sends real-time electronic alerts and notifications to their care managers to ensure those individuals receive follow-up care and achieve optimal health outcomes, reduce preventable readmissions, and help hospitals save costs. During an average week, about 3,600 providers and their staff access records on over 26,000 patients.

Despite progress, significant gaps in interoperability remain. According to the 2023 Provider Interoperability Survey, 64% of respondents reported either scanning or manually entering information into their EHR. And for those that reported that their EHR was not interoperable, the most significant barriers were lack of vendor support, prohibitive costs, lack of training and technical resources, and security/privacy concerns.

To move Hawaii's healthcare economy forward, HHIE led a community workgroup to explore the successes and challenges of interoperability across the state, identify gaps, and make recommendations to improve data sharing. Those recommendations include:

1) **Support critical statewide enabling infrastructure through HHIE.** The state should provide direct financial support to advance data sharing through HHIE, Hawaii's designated Health Information Exchange. With an existing data sharing

legal framework and substantial technical connections already in place, HHIE is well-positioned to advance data sharing capabilities across the state. Investing in existing infrastructure also reduces unnecessary duplication of efforts.

2) **Subsidize technical onboarding support for providers facing barriers.** Many providers face financial and technical barriers in onboarding to interoperability solutions such as HHIE. Targeted financial support to offset the cost of technical work, including vendor configuration and interface fees, along with technical assistance to provide training and workflow support can be crucial aids to expand interoperability.
3) **Consider provider readiness and access to sufficient resources prior to any data sharing mandate.** Expanding access to interoperability and lowering or removing barriers will help providers in Hawaii participate in health information exchange. Any legislation mandating health data exchange in Hawaii should (i) be funded to ensure that providers' financial and technical barriers are addressed, and (ii) support participation and data exchange through HHIE, Hawaii's state-designated health information exchange to avoid costly duplication of efforts and confusion among stakeholders.

It is essential that Hawaii leverages difficult lessons learned from the Maui wildfires and COVID-19 pandemic, and invests in a robust, interoperable statewide health data exchange system, to be fully prepared to provide seamless, effective healthcare during the next emergency. To achieve the health care goals of the state, health information exchange efforts must be expanded to include those providers who face barriers. In addition, the community should continue to build upon the infrastructure already in place—built through years of significant investments—to continue the progress toward a truly interoperable healthcare ecosystem.

Section I: Background and Community Need

Hawaii's population, from keiki to kupuna, receive health care from multiple care settings across the Hawaiian Islands. Neighbor island patients with complicated medical conditions regularly fly to Oahu to seek specialized care. Providers' access to complete, real-time health data on their patients, regardless of care setting, is critical for best patient care. A robust, interoperable data exchange system that enables all health care providers, health plans, clinics, and hospitals to contribute and/or access complete health information with confidence, will result in improved quality and health outcomes of whole-person care for Hawaii's people and lower health care costs.

Efforts to advance interoperability in Hawaii have included the creation of a statewide health information exchange, Hawaii Health Information Exchange (HHIE) and HB 517/SB 895, bills proposed (but not enacted) in 2023 to establish a statewide health data exchange framework proposed in 2023.

In 2023, HHIE developed a community workgroup to continue the legislation's goal to advance health data sharing in Hawaii. The workgroup's aim was to further the community's vision of creating a robust, interoperable data exchange system that enables all health care providers, health plans, clinics, and hospitals to contribute and/or access complete health information with confidence and security, resulting in improved quality and health outcomes of whole-person care for Hawaii's people and lower health care costs for all. The workgroup, consisting of community members across diverse sectors of health care, identified challenges, potential solutions, and costs to increasing effective information exchange to meet national and industry standards in Hawaii's health care ecosystem. The community selected eSSee Consulting, a consulting firm with expertise in nationwide interoperability and experience supporting health IT efforts in Hawaii, to help guide workgroup activities and prepare this community workgroup report.

This community workgroup report lays out the current state of interoperability in Hawaii, identifies gaps and needs in data sharing, details financial, technical, and other challenges that providers face when exchanging health information, and provides recommendations for how to achieve a robust, interoperable health data exchange system in Hawaii.

The Maui wildfires and COVID-19 pandemic have demonstrated the fragile natural of our healthcare ecosystem and highlighted the need for seamless, secure exchange of critical patient information when and where it is needed. It is imperative to invest now in a robust, interoperable statewide health data exchange system, to be fully prepared to provide safe and effective healthcare during the next emergency.

Overview: the Benefits of Health Information Exchange

Health information exchange (HIE) can be defined as the "electronic movement of health-related information among organizations according to nationally recognized standards."[1] Heath information exchange "allows health care professionals and patients to appropriately access and securely share a patient's medical information electronically."[2]

Advancing interoperability enhances patient care coordination, reduces medical errors, and streamlines administrative processes to improve the quality and efficiency of healthcare delivery. The ability to quickly access a patient's complete medical history and current health status allows providers to make more accurate diagnoses and treatment decisions. With timely access to critical information, such as allergies, medications, and previous health conditions, healthcare providers can avoid adverse events, drug interactions, and incorrect diagnoses, significantly minimizing the risk of medical errors. In emergency situations, health information exchange provides access to crucial information that can guide diagnosis and treatment decisions. Overall, health information exchange not only benefits the efficiency and effectiveness of healthcare delivery, but also ensures the safety and well-being of patients.

Research into the benefits of health information exchange has consistently demonstrated its transformative potential in the healthcare landscape.[3] Numerous studies have highlighted the significant improvement in patient care coordination facilitated by HIE.[4] By enabling the timely and secure exchange of patient data among various healthcare providers, HIEs have been shown to reduce redundancies and errors in medical treatment.[5] This enhanced coordination not only leads to better patient outcomes but also yields cost savings in the long run. Moreover, HIEs have demonstrated a notable reduction in healthcare costs through improved efficiency. Research findings have consistently shown that HIEs streamline administrative processes, minimize unnecessary diagnostic tests, and expedite access to critical patient information, resulting in substantial savings for healthcare providers and institutions. Additionally, HIEs have been proven to

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[1] https://bok.ahima.org/PdfView?oid=104129

[2] https://www.healthit.gov/topic/health-it-and-health-information-exchange-basics/health-information-exchange

[3] https://www.healthit.gov/faq/what-are-benefits-health-information-exchange

[4] Menachemi N, Rahurkar S, Harle CA, Vest JR. The benefits of health information exchange: an updated systematic review. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7646861/

[5] Boockvar KS, Ho W, Pruskowski J, DiPalo KE, Wong JJ, Patel J, Nebeker JR, Kaushal R, Hung W. Effect of health information exchange on recognition of medication discrepancies is interrupted when data charges are introduced. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7651981/

enhance public health surveillance, allowing for the rapid identification and containment of outbreaks, which is crucial for disease prevention and control.[6]

In the Pharm2Pharm project (a quasi-experimental Centers for Medicare and Medicaid Innovation (CMMI)-funded study conducted between 2013 to 2015), it was shown that Pharmacists providing advanced medication management (MTM) services leveraging HHIE tools and data resulted in significant positive impact. For about 2,000 patients enrolled in the project, the intervention resulted in over 36% avoided hospitalization due to medication-related complications compared to patients who did not receive similar services, resulting in over $6M in savings that translated to 264% return on investment.[7,8]

Overall, research and innovation models underscore the undeniable benefits of HIE in advancing healthcare quality, efficiency, and the broader health ecosystem.

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[6] Dixon BE, Zhang Z, Lai PTS, Kirbiyik U, Williams J, Hills R, Revere D, Gibson PJ, Grannis SJ. Completeness and timeliness of notifiable disease reporting. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5481902/

[7] Karen L. Pellegrin, Ph.D., et al., Reduction in Medication-Related Hospitalizations in Older Adults with Medication Management by Hospital and Community Pharmacists: A Quasi-Experimental Study. https://agsjournals.onlinelibrary.wiley.com/doi/10.1111/jgs.14518

[8] Karen Pellegrin, et al., A Statewide Medication Management System: Health Information Exchange to Support Drug Therapy Optimization by Pharmacists across the Continuum of Care. https://www.thieme-connect.de/products/ejournals/html/10.1055/s-0037-1620262

Section II: Data Sharing Progress: Interoperability Success in Hawaii

Hawaii Health Information Exchange

Achieving widespread health information exchange and data interoperability has been an important objective of health care stakeholders across the state of Hawaii for many years.

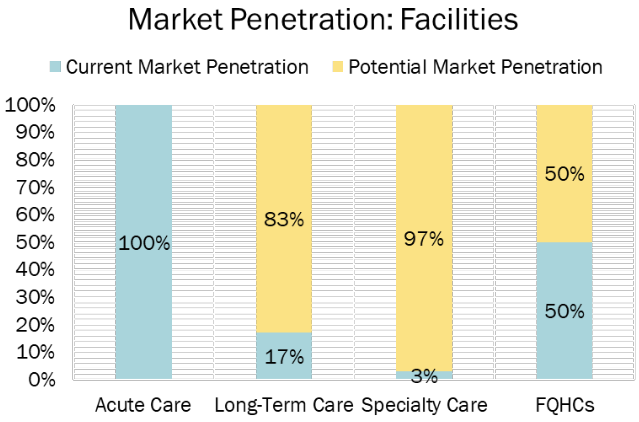
In the early 2000s, Hawaii recognized the potential of HIE in fostering collaboration among healthcare providers and embarked on the journey of creating a statewide health information network. Because interoperability is so essential to optimal patient care, Hawaii's major healthcare entities, including The Queen's Health System, Hawaii Pacific Health, and Hawaii Medical Service Association, founded Hawaii Health Information Exchange ("HHIE") in 2006 to serve as Hawaii's neutral, trusted entity to aggregate and securely exchange patient-level health and medical records between health plans, health systems, and providers. Over the years, key private partners, along with the federal government, Hawaii's Department of Health, and Med-QUEST, have invested millions of dollars in the development of robust technological infrastructure and implemented policies to ensure the privacy and security of patient data. As technology continues to advance, the state remains committed to evolving its HIE framework to meet the changing needs of the healthcare landscape in Hawaii.

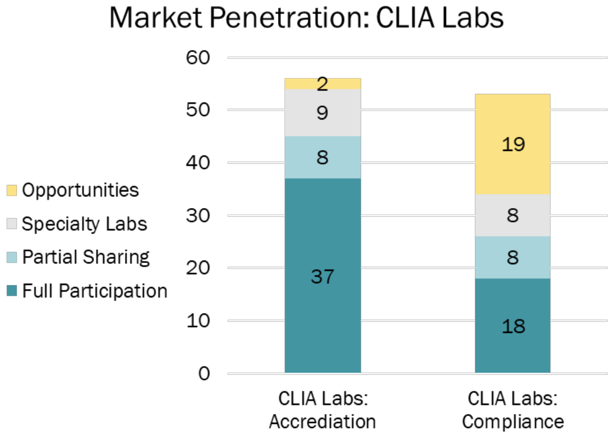
HHIE makes critical real-time data on a patient's medical history, combined from multiple care settings, available to providers at the point of care, supporting their ability to make better care decisions in the moment of care. HHIE plays a pivotal role in improving care continuity, reducing medical errors, and enhancing overall healthcare efficiency across the islands. HHIE has made significant progress in aggregating and securely exchanging patient-level health and medical records between health plans, health systems, and providers. This secure exchange improves the quality, safety, and efficiency of patient care, bettering health outcomes for patients and reducing health care costs for the community.

In 2009, HHIE became Hawaii's State Designated Entity to facilitate exchange of health information. In February 2012, the designation was re-affirmed in a Memorandum of Agreement between the Hawaii HIE and Governor Neil Abercrombie. In 2014, HHIE was recognized and designated as the only functional statewide HIE in Hawaii through a 2014 Hawaii Senate Concurrent Resolution No. 36 (2014)/2014 Hawaii House Concurrent Resolution No. 40 (2014). Under the Concurrent Resolution, it was resolved that HHIE continue to advance health care transformation initiatives, including the electronic exchange of health information as a partner with the Hawaii State Legislature and

Administration. In 2015, Governor David Ige affirmed the role of HHIE as key partner in Hawaii's strategies for system-wide health innovation.

HHIE has in place data sharing agreements, a governance framework, and infrastructure compliant with federal standards that connects most major health systems, hospitals, and both major laboratories statewide. Healthcare providers across Hawaii's healthcare spectrum, including independent providers, cancer centers, and Federally Qualified Health Centers, share data and/or access patient records through HHIE to provide the best treatment to their patients. Additionally, HHIE played a pivotal role in the COVID-19 pandemic by transmitting COVID-19 testing results to the Department of Health for their reporting to policymakers at the local and federal level. HHIE's data sources come from Oahu, Hawaii Island, Maui, Lanai, Kauai, and Molokai. Today, HHIE aggregates and securely exchanges data for nearly four million patients who have obtained healthcare services in Hawaii, including residents, visitors, veterans, military personnel, and their dependents. In addition, HHIE monitors about 700,000 patients identified by their providers who will benefit from proactive monitoring and timely support/intervention because of chronic illnesses. HHIE sends real-time electronic alerts and notifications to their care managers to ensure those individuals receive follow-up care and achieve optimal health outcomes, reduce preventable readmissions, and help hospitals save costs. During an average week, about 3,600 providers and their staff access records for over 26,000 patients. Using HHIE saves lives and betters patient care.[9]





HHIE's network of connected healthcare organizations includes:

- All of Hawaii's 23 acute care facilities
- 9 of 18 Federally Qualified Health Centers
- 17% of long-term care facilities
- More than half of CLIA laboratories (over 75% of total lab results generated in Hawaii, including lab results from the majority of independent physician practices)

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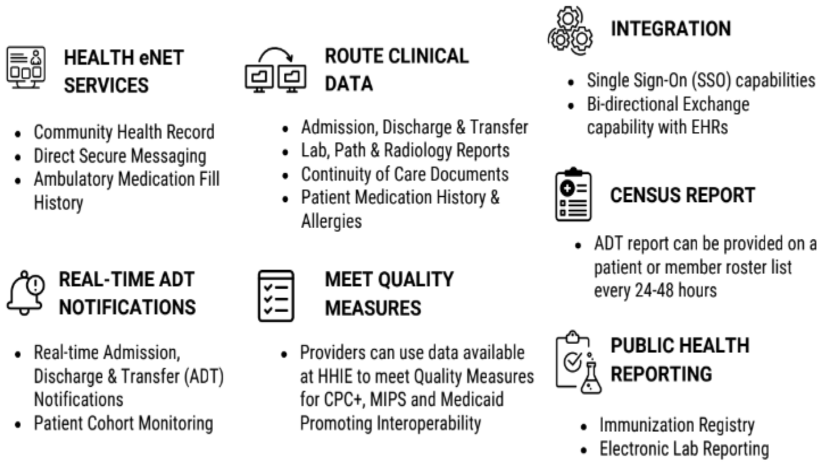
[9] https://hawaiihie.org/testimonials

- Over one hundred independent physician practices sharing full clinical data through their EHRs

HHIE participants share and receive data in a variety of ways that assist the provider in the care of the patient, support care coordinators with follow up as well as help providers meet CMS quality measures or meet public health reporting requirements:

- Health eNet Services, which includes a longitudinal health record that contains radiology reports, cardiology reports, laboratory and pathology results, and provider transcription reports as well as an ambulatory medication fill history. Direct Secure Messaging is also available to provide HIPAA compliant, encrypted messaging so that patient health information may be transferred securely. This tool also allows pharmacies to notify providers when their patients have received vaccinations so that duplicate immunizations are not administered.
- Real-Time notifications on patient encounters at hospitals, rehabilitation facilities and skilled nursing facilities, which alert care coordinators or providers so they may provide the proper follow up with patients. Clinical data such as labs, radiology, pathology and transcription reports can be routed out to data warehouses or third-parties so that care coordinators may assist providers in transition of care. This data can also be used to provide data analytics or to meet quality measures for CMS programs. Census Reporting, which combines hospital encounters on a cohort of patients in a reportable format to allow health plan coordinators to provide timely care management.



HEALTH eNET SERVICES

- Community Health Record
- Direct Secure Messaging
- Ambulatory Medication Fill History

REAL-TIME ADT NOTIFICATIONS

- Real-time Admission, Discharge & Transfer (ADT) Notifications
- Patient Cohort Monitoring

ROUTE CLINICAL DATA

- Admission, Discharge & Transfer
- Lab, Path & Radiology Reports
- Continuity of Care Documents
- Patient Medication History & Allergies

MEET QUALITY MEASURES

- Providers can use data available at HHIE to meet Quality Measures for CPC+, MIPS and Medicaid Promoting Interoperability

INTEGRATION

- Single Sign-On (SSO) capabilities
- Bi-directional Exchange capability with EHRs

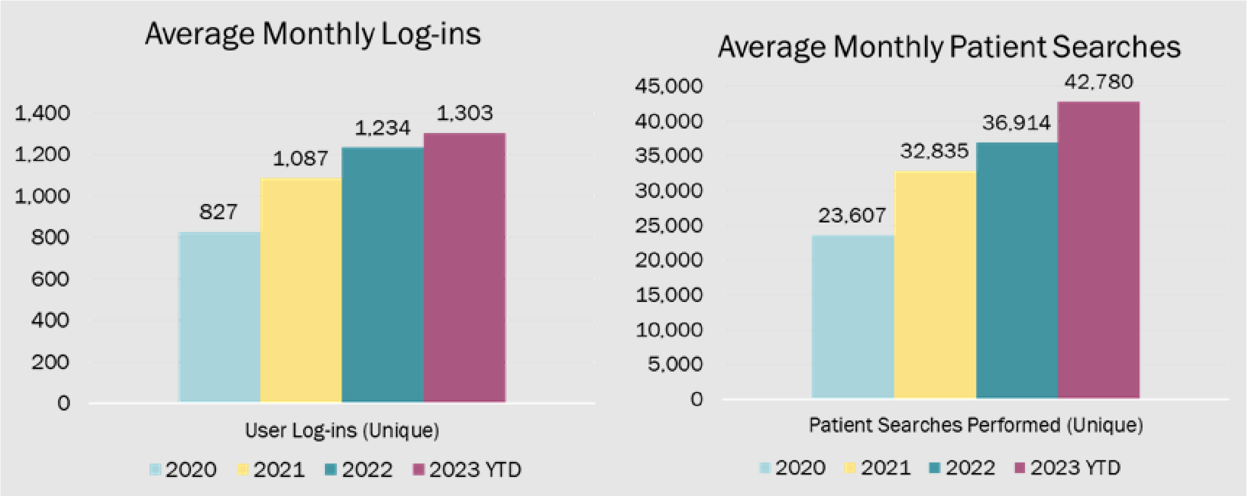
CENSUS REPORT

- ADT report can be provided on a patient or member roster list every 24-48 hours

PUBLIC HEALTH REPORTING

- Immunization Registry
- Electronic Lab Reporting

Average unique monthly log-ins into the Community Health Record (CHR) has increased 58% since 2020, while average unique monthly patient searches performed has increased 81% since 2020. This means that on average the number of unique users such as providers and staff members are logging in and utilizing the CHR each month to perform searches on an increasing number of unique patients to get access to more comprehensive health data within HHIE's Health eNet solutions. HHIE's Health eNet combines disparate health data from a various health entities to create a more organized and robust record of patient health information into categories such as laboratory results, pathology and radiology results, medication data, and admissions/discharge records.



HHIE is also preparing to support future use cases, including efforts to exchange SDOH data needed for complex care coordination and population health improvement, data analytics to support value-based payment, and new exchange capabilities, such as Fast Healthcare Interoperability Resources (FHIR).

Growth of EHRs and National Networks

In addition to the community-focused efforts of HHIE, a growing number of national networks are also supporting interoperability efforts, largely to exchange continuity of care (CCD) documents, such as discharge summaries. These networks are made possible by the growth of Electronic Health Record (EHR) systems in Hawaii, reflecting a broader national trend towards digitizing healthcare information for improved efficiency and patient care. Starting in the early 2000s, healthcare organizations across Hawaii embarked on the adoption of EHRs to enhance healthcare quality and coordination. Various healthcare organizations and providers across the islands have progressively transitioned from paper-based systems to electronic records, with incentives provided by federal programs such as the Health Information Technology for Economic and Clinical Health (HITECH) Act serving as catalysts. Today, virtually all hospitals and health systems, and a vast majority of physicians, utilize EHRs. Adoption among other priority groups, such as long-term care facilities, behavioral health providers, and oral health providers and community pharmacies has been slower, in part because many of these organizations were not able to receive HITECH funding. This disconnect in access has critical implications for the utility and limits of national exchange efforts.

This adoption has led to a significant increase in the interoperability of health information systems, allowing for seamless data exchange between different healthcare providers. As EHR systems have become more sophisticated, they have not only improved the accuracy and accessibility of patient records, but have also contributed to more informed decision-making by healthcare professionals. The growth of EHRs in Hawaii aligns with the nationwide push towards a more connected and technologically advanced healthcare system.

National networks that have a significant footprint across Hawaii include:

The eHealth Exchange, established in 2009, has been a pioneer in fostering interoperability by connecting various healthcare organizations, including federal agencies, hospitals, clinics, and health information exchanges. This network has played a pivotal role in promoting care coordination, reducing duplication of tests and procedures, and enhancing patient outcomes on a national scale. Governance of the exchange is led by the Sequoia Project, a nonprofit based in Virginia.

Carequality, launched in 2016, is another influential initiative aimed at advancing nationwide health data sharing. It operates as a framework for connecting diverse health data sharing networks, making it easier for healthcare organizations on various health IT platforms to share information with one another. By establishing a common set of rules and technical specifications, Carequality has enabled the exchange of health records across different platforms and systems. This approach fosters a more connected healthcare ecosystem, allowing for improved care continuity and better-informed decision making by healthcare professionals. Carequality currently connects 600K care providers, 50K clinics, and 4,200+ hospitals and the framework supports the monthly exchange of more than 350 million clinical documents.

Epic's Care Everywhere interoperability solution is another solution designed to facilitate seamless sharing of electronic health records (EHRs) across disparate healthcare organizations on the Epic EHR. Care Everywhere enhances care coordination and patient outcomes by allowing healthcare providers to access and exchange patient data securely. With a focus on interoperability, the solution breaks down traditional data silos, enabling clinicians to retrieve a patient's comprehensive medical history, including diagnoses, medications, and treatment plans, regardless of the healthcare system's origin. A number of large hospitals and health systems in Hawaii are currently on Epic’s EHR or planning to adopt it. In addition to connecting Epic EHR sites, Care Everywhere supports connections with other national networks, such as Carequality and eHealth Exchange.

All of these networks support a query/ retrieve approach to exchange, allowing for expanded access and sharing of records across organizations and health IT systems. At the same time, many gaps in exchange remain, along with technical limitations affecting patient matching and limited ability to push data. The networks and initiatives are also based outside of Hawaii and may not be as responsive to local community needs and concerns. In addition, natural disasters and other local events may require more flexibility in network capabilities to meet emergent needs.

21^{st} Century Cures Act and Federal Efforts to Improve Exchange

The 21st Century Cures Act, landmark, bipartisan federal legislation passed in 2016, plays a pivotal role in advancing healthcare interoperability. It aims to accelerate medical innovation, improve patient access to healthcare data, and foster interoperability by supporting the development and implementation of the Trusted Exchange Framework and Common Agreement (TEFCA).

TEFCA establishes a standardized framework and set of protocols for the secure exchange of electronic health information. It provides a common ground for various healthcare entities, including providers, payers, and health information networks, to share patient data more effectively and efficiently. By standardizing these processes, TEFCA aims to reduce the current fragmentation and data silos that hinder interoperability, making it easier for healthcare providers to access and share patient information across different platforms and systems.

While the Trusted Exchange Framework and Common Agreement (TEFCA) holds great promise in advancing healthcare interoperability, it is not without its drawbacks. One significant concern is the potential for increased administrative burdens on healthcare organizations and providers. Implementing TEFCA standards and protocols may require significant investments in terms of time, technology, and resources, which could strain the resources of smaller healthcare entities. Additionally, there are apprehensions about data security and privacy, as the increased sharing of sensitive patient information across networks and systems may raise potential cybersecurity risks and heighten the need for robust data protection measures. Moreover, the challenge of achieving widespread adoption among the diverse array of healthcare stakeholders will likely result in slow adoption. These drawbacks underscore the need for a careful and balanced approach in implementing TEFCA to ensure that the benefits of interoperability are not overshadowed by its challenges and highlight the continued need for community-based HIE solutions.

HHIE, for example, can support the Hawaii healthcare community by collecting and normalizing key data and making it available in a longitudinal community health record to support better patient care and care coordination. HHIE can also monitor cohorts of patients for activities and push data real-time to providers and care coordinators to assure timely follow up and care planning, which are functions that the TEFCA-QHIN framework is not designed to support. Data can also be combined to support analytics and risk stratification efforts that address health inequities and improve population health.

The Information Blocking Rule, a vital component of the 21st Century Cures Act, is designed to eliminate barriers that have historically hindered the free exchange of electronic health information. This rule prohibits healthcare providers, IT developers, and other stakeholders from intentionally withholding or obstructing the sharing of patient health data for reasons unrelated to patient safety or privacy.[10] The primary objective is to encourage transparency, interoperability, and accessibility in the healthcare industry, ultimately leading to enhanced patient care and outcomes. ONC was tasked with developing specific exceptions to the Information Blocking rule that are designed to be narrow.

Information Blocking Definition:

A practice that interferes with, prevents, or materially discourages access, exchange, or use of electronic health information," except as required by law or covered by an exception defined by the Secretary of HHS

In 2022, Med-QUEST engaged HHIE to survey Hawaii Medicaid health care providers on their understanding and alignment with the 21st Century Cures Act and its Information Blocking Rule. More than half of Medicaid providers were unaware of the Information Blocking Rule. The survey's conclusions, provided by an outside research firm, indicated that additional education was required to ensure compliance, but that assistance and services would need to be subsidized.

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[10] https://www.healthit.gov/topic/information-blocking

Section III: Gaps and Needs in Health Data Sharing in Hawaii

Despite the progress of HHIE to support interoperability, data exchange in Hawaii has yet to reach its full potential. While information sharing between hospitals and acute care facilities is high, many gaps remain in terms of organization types connected to health information exchange, as well as robust data exchange necessary for whole-person care and population health improvement. Many providers use capabilities in their EHRs to exchange information with other health systems. These are important functions that can support some care coordination needs but are insufficient to manage population health, and many providers are still left out of exchange opportunities.

High-Priority Provider Types

Significant gaps remain in connecting FQHCs, rural healthcare providers, skilled nursing and long-term care facilities, behavioral health providers, specialty medical practices and community pharmacies. These entities provide critical services to vulnerable populations, but often lack the resources to adopt advanced health IT systems and make investments to onboard to interoperability solutions like HHIE. These critical providers often provide care to higher percentages of Med-QUEST members and high-risk populations.

New work to address the social determinants of health, especially around housing, has also highlighted data gaps between healthcare entities and community-based organizations (CBOs). Closed-loop referral systems and data to support complex care coordination are among the highest-priority use cases, and integrating non-healthcare entities involves a number of complex issues such as HIPAA rules around information sharing and technology readiness among CBOs.

Data Flows

Interoperability solutions, including HHIE and national interoperability networks, have made some progress in sharing certain types of data, including ADTs and CCDs. A comprehensive view of a patient's health goes beyond the traditional clinical data found in CCDs, however, and include:

- Longitudinal records: a comprehensive view of a patient’s medical history, including relevant acute care, primary care, specialty, lab, and other encounters.
- Lab results: this includes the timely exchange of lab results between healthcare providers, allowing for quicker access to critical information. This can be especially

important in emergency situations, for coordinating care across different healthcare settings, and for reducing duplicative screening.

- Pharmacy Data: including data from pharmacy records can help in tracking medication adherence, identifying problems in indication, effectiveness, potential drug interactions and other safety issues, ensuring a more complete medication history for patients.
- Imaging Results: the exchange of medical imaging results, such as X-rays, MRIs, and CT scans. This is crucial for providing a more holistic understanding of a patient's health condition and reducing the cost associated with duplicative imaging.
- Social Determinants of Health (SDOH): acknowledging that social and environmental factors significantly impact health, this can include screening information about a patient's social needs like housing, food, and transportation and closed-loop referrals to community-based organizations that provide case management and supportive services. In Hawaii, there is growing interest in facilitating exchange between healthcare providers, community-based organizations, and others such as supportive housing providers and homeless shelters, which can advance care and service coordination.
- Public Health Data: to address population health challenges, this information includes disease surveillance information, vaccination records, and epidemiological data.

The expansion of data types exchanged is driven by the desire to create a more complete and nuanced picture of a patient's health. This richer dataset enables healthcare providers to make more informed decisions, tailor treatments to individual patients, and improve overall care coordination. However, the integration of diverse data types also presents challenges related to data standardization, privacy, and security, which highlights the importance of a trusted, neutral third-party organization to take on the work of coordinating data sharing within the community.

Secondary Data Uses, Including Analytics and Population Health

Data is currently exchanged through HHIE for treatment and care coordination purposes, as well as for certain disclosures to the state. Many/most HIEs permit covered entities to use and disclose PHI for treatment, payment, and health care operations activities. This fuller exchange has numerous benefits. As the federal government explains:

Ready access to treatment and efficient payment for health care, both of which require use and disclosure of protected health information, are essential to the effective operation of the health care system. In addition, certain health care operations—such as administrative, financial, legal, and quality improvement activities—conducted by or for health care providers and health plans, are essential to support treatment and payment.

HHIE should expand to allow exchange for the full allowable exchange, to provide for best patient care in Hawaii.

Increasing the scope of exchange will have numerous benefits including:

- Improving patient safety and quality-of-care by permitting participants to (i) conduct quality assessment and improvement activities, including outcomes evaluation, (ii) perform population-based activities relating to improving health or reducing health care costs, and (iii) review the competence and qualifications of health care professionals.
- Allowing health care providers to obtain payment or be reimbursed for their services and permitting health plans to obtain premiums, to fulfill their coverage responsibilities and provide benefits under the plan, and to obtain or provide reimbursement for the provision of health care.
- Protecting health care providers from Information Blocking regulatory concerns, which may result from restricting allowable purposes of data exchange.
- Aligning with current and future exchange purposes under TEFCA, allowing for easier entry into the national network.
- Permitting HHIE to participate in NCQA's Data Aggregator Validation program[11], which evaluates clinical data streams to help ensure that health plans, providers, government organizations and others can trust the accuracy of HHIE's aggregated clinical data for use in HEDIS reporting and other quality programs.

Many communities have found success in bringing together data across organizations, working to standardize and normalize it, and making it available to support a broad range of analytics and population health use cases.

Data solutions can also reduce reporting burdens on providers by facilitating exchange to public health programs and health plans. NCQA's Data Aggregator Validation (DAV) program evaluates clinical data streams to help ensure that health plans, providers, government organizations and others can trust the accuracy of clinical data for use in quality reporting, value-based contracting, closing care gaps and other important clinical decisions. Payers can ingest this data directly as standard supplemental data eliminating the need to obtain the records from the providers or facilities individually.

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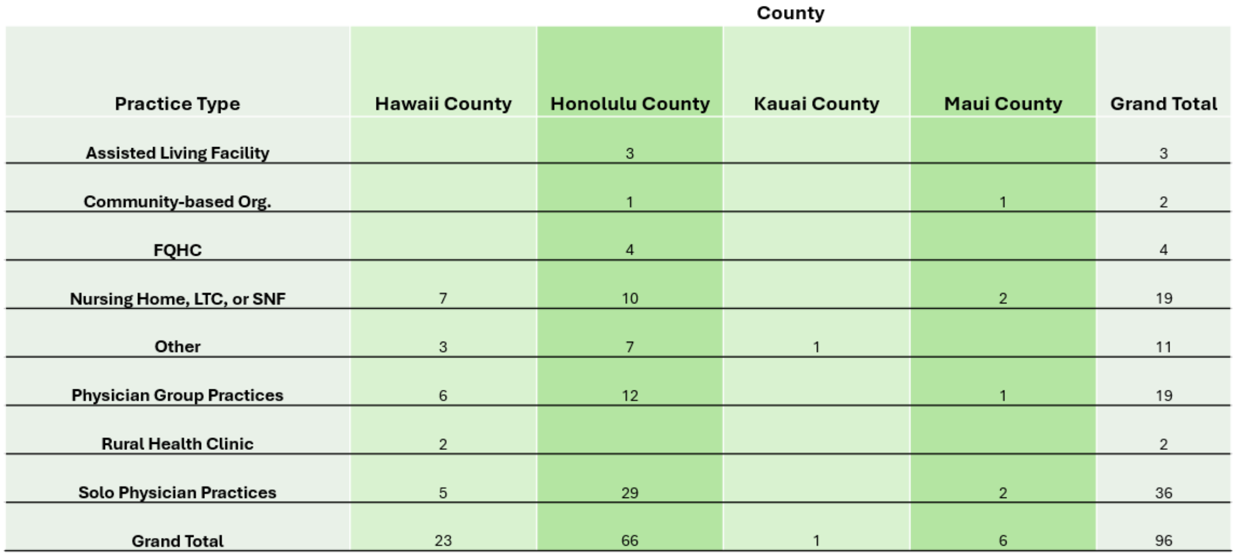
[11] https://www.ncqa.org/programs/data-and-information-technology/hit-and-data-certification/hedis-compliance-audit-certification/data-aggregator-validation/

Section IV: Barriers to Data Sharing Participation

2023 Hawaii Provider Interoperability Survey

To better understand community interest and challenges around interoperability, HHIE and Healthcare Association of Hawaii (HAH), together with the health IT consulting firm, Briljent, conducted a survey of Hawaii healthcare providers between September 2023 and October, 2023. Briljent, recognizing the critical need for providers to access complete, real time health data on their patients following the Maui wildfires, offered it services pro bono and worked with HHIE and HAH to design, execute and execute the survey, and compiled a comprehensive report detailing findings.

96 surveys were completed, with almost 40% representing solo physician practitioners, almost 20% representing long-term care facilities, and the remainder being larger physician practices, acute care facilities, and other healthcare groups. 60% of respondents represent organizations that have 50 or less employees, and more than half of those employ 5 or less. 24% of respondents represent organizations with 100 or more employees.

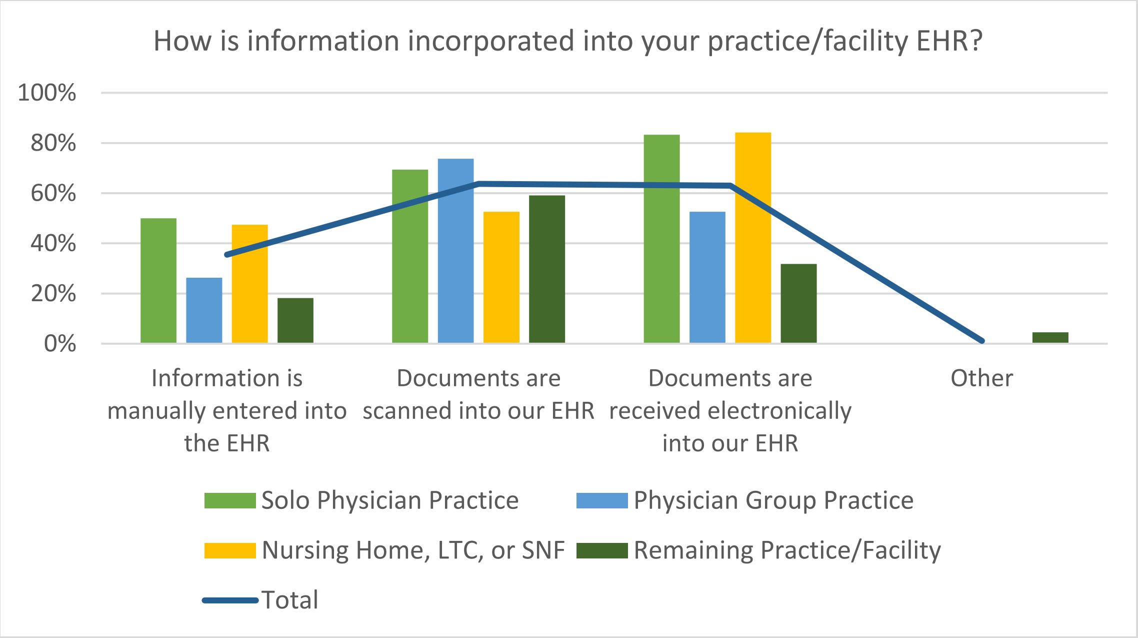


	County				
Practice Type	**Hawaii County**	**Honolulu County**	**Kauai County**	**Maui County**	**Grand Total**
Assisted Living Facility		3			3
Community-based Org.		1		1	2
FQHC		4			4
Nursing Home, LTC, or SNF	7	10		2	19
Other	3	7	1		11
Physician Group Practices	6	12		1	19
Rural Health Clinic	2				2
Solo Physician Practices	5	29		2	36
Grand Total	23	66	1	6	96

Key Results

92% of respondents have an EHR or plan to implement one in the next two years. Of those, 56% indicate the cost will be or was $60K or less. The balance of respondents indicate an experienced or expected cost of >$60K. 16% indicated the cost to be greater than $200K. These results are encouraging, and show the landscape is capable of at least some degree of HIE. Notably, almost 80% of respondents with an EHR indicated that their EHR was interoperable. Of those, 85% said that their organization takes advantage of that interoperability.

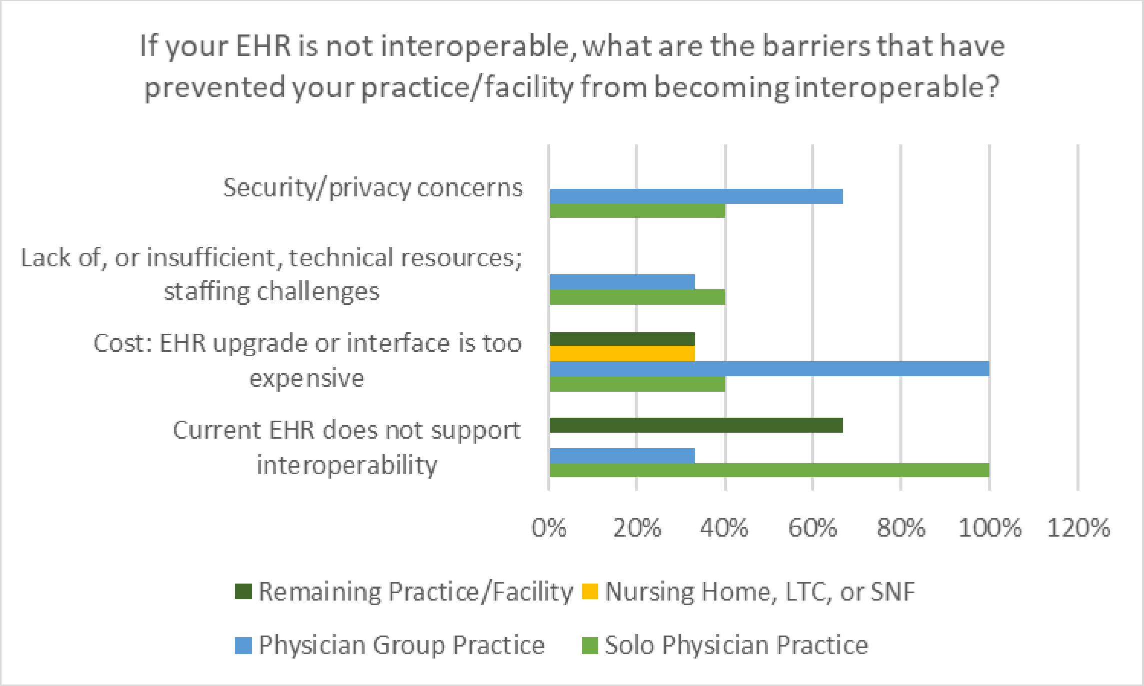
However, despite these capabilities, of those with an EHR, 64% are either scanning or manually entering information into their EHR.



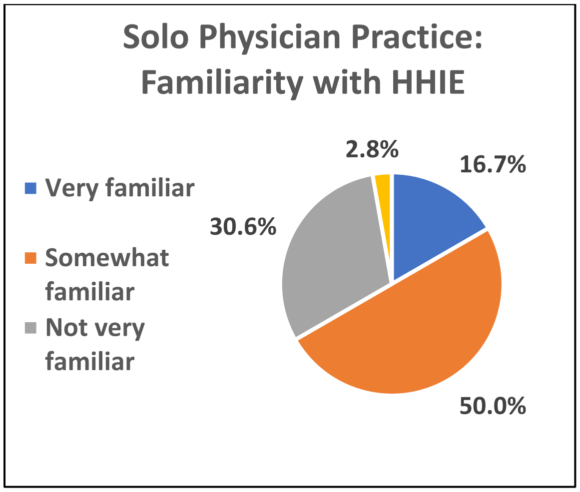
For those with an EHR that is not interoperable, the barriers to taking advantage of that interoperability are:

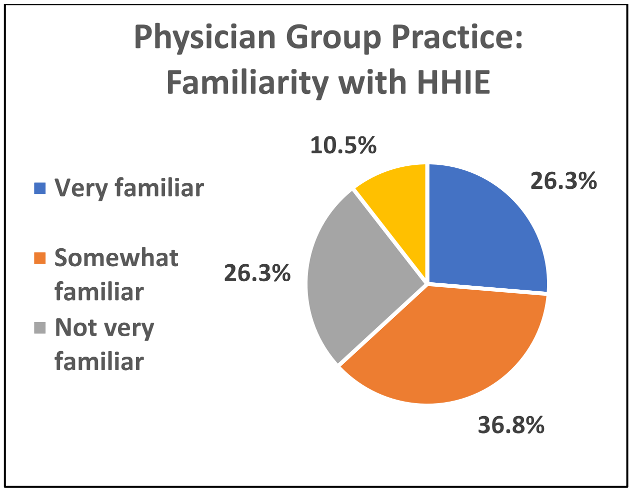
	Solo Physician Practice	Physician Group Practice	Nursing Home/ LTC	Other	Total
Current EHR does not support interoperability	100%	33%		67%	28%
Cost: EHR upgrade or interface is too expensive	40%	100%	33%		24%
Lack of, or insufficient, technical resources; staffing challenges	40%	33%			14%

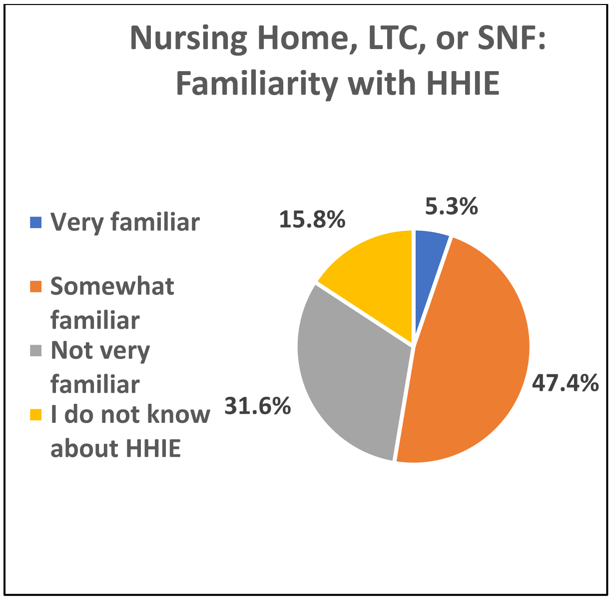
Security/privacy concerns	40%	67%			14%

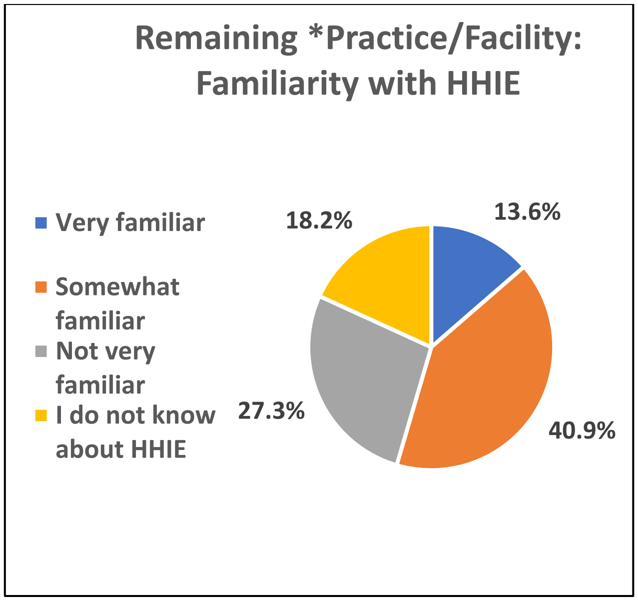


Almost 60% of survey respondents were either very or somewhat familiar with HHIE. 39% indicate that they use HHIE products and services. Of those that use HHIE products and services, 73% said that HHIE was very or somewhat helpful at addressing their interoperability needs. By practice type, awareness varied somewhat:



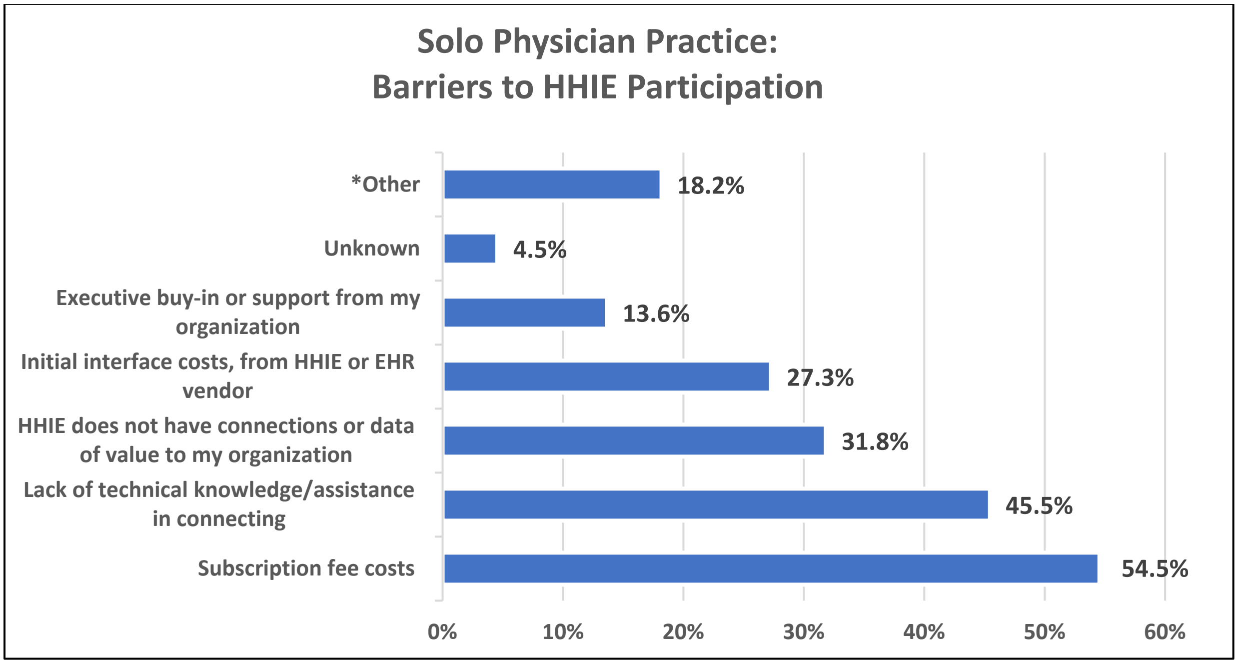


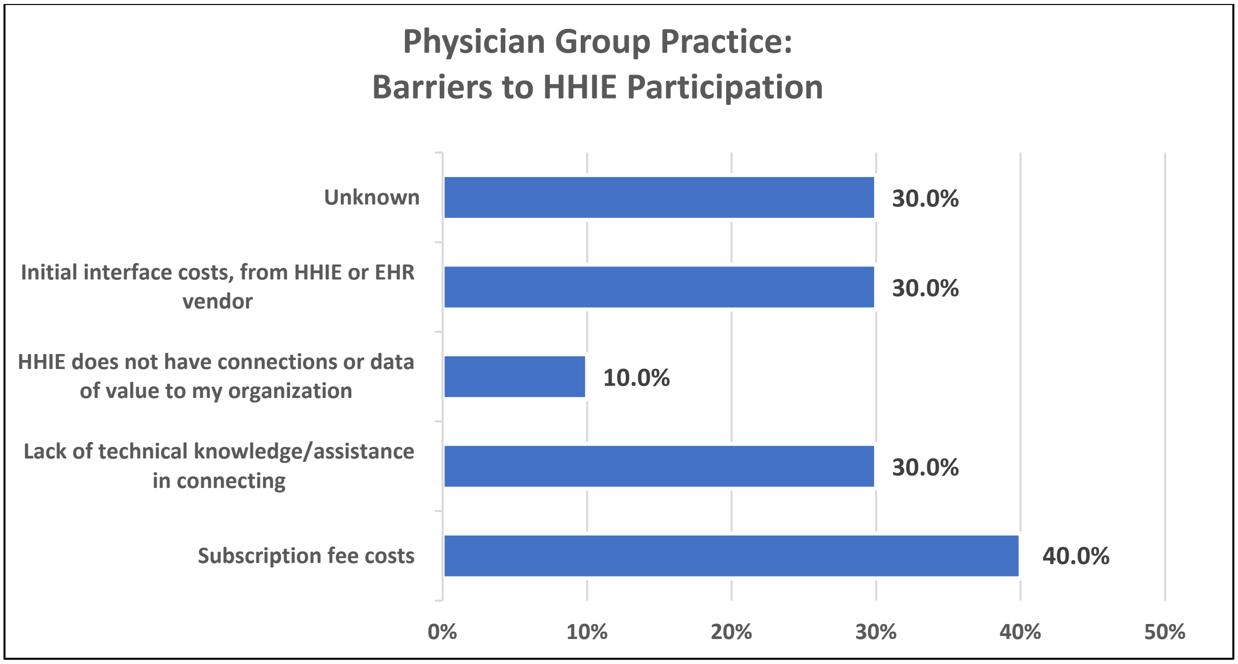


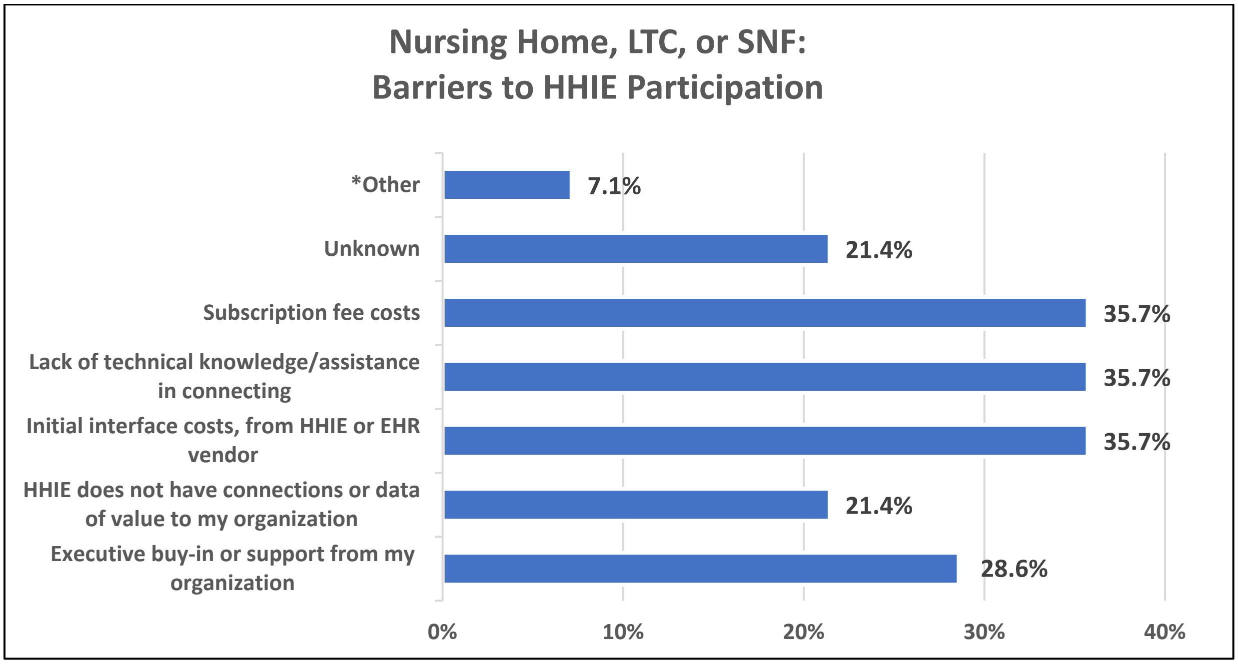


The survey also asked about barriers to participation in HHIE; respondents indicated the following obstacles:

- Subscription fee costs 23%
- Lack of technical knowledge/assistance in connecting 19%
- Initial interface costs, from HHIE or EHR vendor 17%







The types of information that respondents considered most important or valuable are:

- Clinical care summary/discharge summary 14%
- Imaging results 13%
- Lab results 13%

- Admit, Discharge, Transfer (ADT) notifications 12%

Overall, the interoperability survey highlighted success in some areas with data sharing, high value data providers are looking to exchange, and barriers to adopting solutions such as HHIE.

Note on Survey Results Related to Interoperability

Some of the nuance of interoperability may not be fully captured in these results. Some users of health IT systems may not be aware of interoperability capabilities, or the full breadth of sources that may already be incorporated into their systems (including from HHIE and other national networks discussed earlier).

HB 517/SB 895: A Desire to Improve Data Interoperability

In the 2023 Legislative Session, HB 517/SB 895 were introduced to promote statewide data interoperability. The companion bills called for creation a statewide health data exchange framework, including a single data sharing agreement and accompanying common set of policies and procedures, and would require most health care delivery organizations, including hospitals, physician practices, long-term care facilities, clinical labs, and health plans to participate in the exchange. The bills also called for the creation of an advisory board to help develop and implement the framework. The bills did not provide for specific appropriations to accomplish this work. While many organizations testified in support of the intent of the measure, there were also many concerns identified with the creation of an unfunded mandate, and the increased cost and technical burdens on providers, as well as potential duplication of efforts undertaken by HHIE.

Many stakeholders testified in favor of advancing data exchange. Mitchell Roth, Mayor of the County of Hawaii, stated: “health information exchange can improve health care quality, make health care even more efficient, streamline administrative tasks, engage more patients, and support community health through care coordination.” The Hawaii Medical Association testified, “Prioritization of data solutions that improve healthcare access for our patients, particularly our rural and underserved communities, is greatly needed.”

> *HHIE is ideally positioned to address broader data sharing and interoperability agreements and can continue to act as the primary convener of relevant stakeholders that have a vested interest in meeting the goals of the 21st Century Cures Act and addressing outstanding gaps in participation in the HHIE.*
>
> – Queen’s Health System Testimony on

Others noted, however, that the measure lacked sufficient resources for implementation and unnecessarily duplicated existing infrastructure and efforts. The Healthcare Association of Hawaii stated: “hospitals in Hawaii are generally able to share real-time information with each other, with insurers, and with community partners such as the Hawaii Health Information Exchange (HHIE), which serves as a statewide service that currently does provide the type of real-time data exchange that this bill seeks to promote... We concur that there are many areas where improvements can be made, and where difficult barriers must be overcome in order to bring the full potential of data-sharing between providers, patients, and community organizations to bear. We are, however, concerned that this bill will not ultimately achieve the goal of true interoperability. Instead, it would enshrine in statute data-sharing requirements for many providers that have few financial resources, creating an unfunded mandate that will further stress the healthcare industry.” The Queen’s Health System added, “HHIE is ideally positioned to address broader data sharing and interoperability agreements and can continue to act as the primary convener of relevant stakeholders that have a vested interest in meeting the goals of the 21st Century Cures Act and addressing outstanding gaps in participation in the HHIE.”

Legislators decided to defer the bills to allow for more community input and development of needed solutions to address the interoperability gaps. Any unfunded mandate proposed on providers should be viewed critically within the context of Hawaii’s physician shortage.[12] The shortage is due, at least in part, to the state’s licensing requirements, its general excise tax, and Hawaii’s high cost of living.

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[12] https://www.capitol.hawaii.gov/session/measure_indiv.aspx?billtype=HB&billnumber=517&year=2023

Section V: Recommendations for Advancing Health Data Exchange in Hawaii

Building on the success of local and national interoperability efforts, Hawaii has an opportunity to advance interoperability by leveraging infrastructure already in place and providing resources to support the onboarding of critical healthcare providers to HIE opportunities. Options from other states, including those set forth in Appendix A, were considered by the workgroup, along with a review of Hawaii's unique needs and current state. The community workgroup makes the following recommendations:

1) **Support critical statewide enabling infrastructure at HHIE.** The state should provide direct financial support to advance data sharing through HHIE, Hawaii's designated Health Information Exchange. With an existing data sharing legal framework and substantial technical connections in place, HHIE is well-positioned to advance data sharing capabilities across the state.

   To maximize state investments, it is crucial to seek support through the Centers for Medicare and Medicaid (CMS) Medicaid Enterprise Systems (MES) program. CMS provides up to 90% federal match of expenditures on design, development, and implementation, and up to 75% federal match of expenditures on maintenance and operations of systems critical to Medicaid. Designating HHIE as critical infrastructure for Med-QUEST and certifying appropriate modules to support Medicaid business operations could open up access to significant federal funding.

   As part of this funding effort, certain services of HHIE could be offered to Med-QUEST providers at reduced cost in recognition of its ability to support the healthcare of members and lower healthcare costs for Med-QUEST.

2) **Subsidize technical onboarding support for providers facing barriers.** Many providers face financial and technical barriers in onboarding to exchange solutions. In addition, providers may have access to some interoperability solutions from within their own EHR. Targeted financial support to offset the cost of technical work, including vendor configuration and interface fees, along with technical assistance to provide education on interoperability solutions, and training and workflow support to the providers and their staff to help use those solutions can be crucial aids to expand interoperability. Funding can be staged to support providers along the interoperability journey, with milestone payments linked to key activities like a) signing the HHIE data sharing agreement, b) completing technical interface work, c) successfully accessing HHIE for a period of time, and d) participating in community-led data quality initiatives.

3) **Consider provider readiness and access to sufficient resources prior to any data sharing mandate.** Expanding access to interoperability and lowering or removing barriers will help providers in Hawaii participate in health information exchange. Any legislation mandating health data exchange in Hawaii should (i) be funded to ensure that providers’ financial and technical barriers are addressed, and (ii) support participation and data exchange through HHIE, Hawaii’s state-designated health information exchange to avoid costly duplication of efforts and confusion among stakeholders. Instead of a direct mandate, a broad coalition of stakeholders should convene to develop a shared roadmap to universal data exchange. Factors such as provider readiness, barriers to participation, available resources, and capabilities of existing health IT systems should be considered in determining participation requirements and the best path towards universal data sharing.

Appendix A:
Data Sharing Success in Other States: Lessons for Hawaii

The challenges of interoperability are widespread, and efforts in other states show progress can be made by leveraging federal support, addressing barriers, and convening stakeholders. A number of approaches have seen success, including the evolution of HIEs into health data utilities; statewide data-sharing and HIE onboarding mandates; and state/ payer incentives and requirements to participate in information sharing. These examples can provide ideas to support the needs in Hawaii.

Health Data Utilities

For almost two decades, federal, state, and local investments in common health IT exchange infrastructure have helped advance health information exchange. Through the adoption of advanced use cases, and the partnering with stakeholders beyond healthcare entities, some HIEs are evolving to become Health Data Utilities (HDUs), public-private partnerships that advance critical infrastructure designed to support multi-directional exchange. HDUs are characterized by having strong, neutral, public-private governance, financial support from an array of stakeholders, including State Public Health Agencies, State Medicaid Agencies, health delivery organizations, health plans, and others, and broad participation in data sharing activities.

California

California embarked on a multi-pronged approach to advance data sharing through HIE onboarding support, the establishment of a statewide data exchange framework, and a mandate for healthcare organizations and health plans to exchange data.

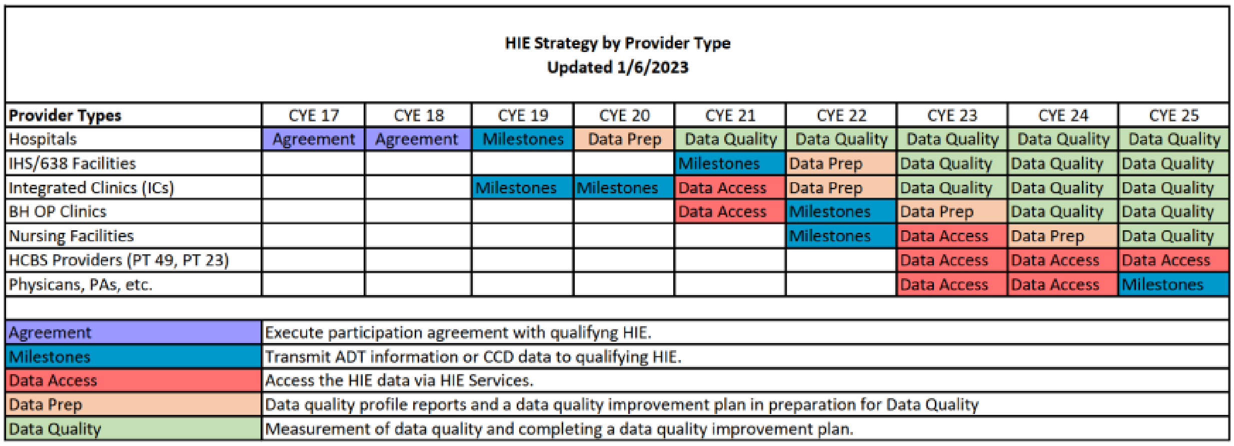
The California HIE Onboarding Program (CalHOP), administered and funded by the California Department of Health Care Services and CMS, provided $50 million in funding for hospitals and ambulatory providers to onboard qualified health information organizations (HIOs). Its tiered approach incentivized providers to connect and share data with HIOs and provided technical assistance resources and support to offset the cost of building interfaces.

AB 133 included data exchange legislation that required the creation of a Data Exchange Framework for California and mandates for participation. It created a process for the legislature to receive input from stakeholders and CalHHS that it may consider for future legislation.

CalHOP helped over 700 healthcare facilities connect to regional HIOs. Following the success of this program, several health plans, including Anthem Blue Cross, Blue Shield and Inland Empire Health Plan, adopted measures to incentivize provider data sharing. In 2021, and the legislature passed AB 133 to establish the CalHHS Data Exchange Framework, with a participation mandate and funds to support education and implementation. By combining onboarding support with a stakeholder-informed participation mandate, and leveraging existing investments in data sharing infrastructure, California has made substantial progress in advancing health information exchange, moving from scattered regional pockets of exchange toward broad statewide exchange.

Arizona

To support information exchange efforts in Arizona, the state Medicaid agency, the Arizona Health Care Cost Containment System (AHCCCS), created a differential adjusted payment approach for certain hospitals and other providers participating in Medicaid. The payment adjustment ranges from 2.5% to 10%, and is tiered based on content and data quality of participants.[13] Over time, provider types have been incentivized to move from simply participating in exchange to actively working on improving the quality of data shared.



HIE Strategy by Provider Type
Updated 1/6/2023

Provider Types	CYE 17	CYE 18	CYE 19	CYE 20	CYE 21	CYE 22	CYE 23	CYE 24	CYE 25
Hospitals	Agreement	Agreement	Milestones	Data Prep	Data Quality	Data Quality	Data Quality	Data Quality	Data Quality
IHS/638 Facilities					Milestones	Data Prep	Data Quality	Data Quality	Data Quality
Integrated Clinics (ICs)			Milestones	Milestones	Data Access	Data Prep	Data Quality	Data Quality	Data Quality
BH OP Clinics					Data Access	Milestones	Data Prep	Data Quality	Data Quality
Nursing Facilities						Milestones	Data Access	Data Prep	Data Quality
HCBS Providers (PT 49, PT 23)							Data Access	Data Access	Data Access
Physicans, PAs, etc.							Data Access	Data Access	Milestones

Agreement	Execute participation agreement with qualifyng HIE.
Milestones	Transmit ADT information or CCD data to qualifying HIE.
Data Access	Access the HIE data via HIE Services.
Data Prep	Data quality profile reports and a data quality improvement plan in preparation for Data Quality
Data Quality	Measurement of data quality and completing a data quality improvement plan.

Figure 1: Provider Incentive Roadmap in Arizona

These efforts have helped the HIE, Contexture, grow to over 800 participants across Arizona and Colorado, greatly supporting healthcare organizations' ability to share and receive crucial patient information for care coordination, quality improvement, and performance in value-based care.

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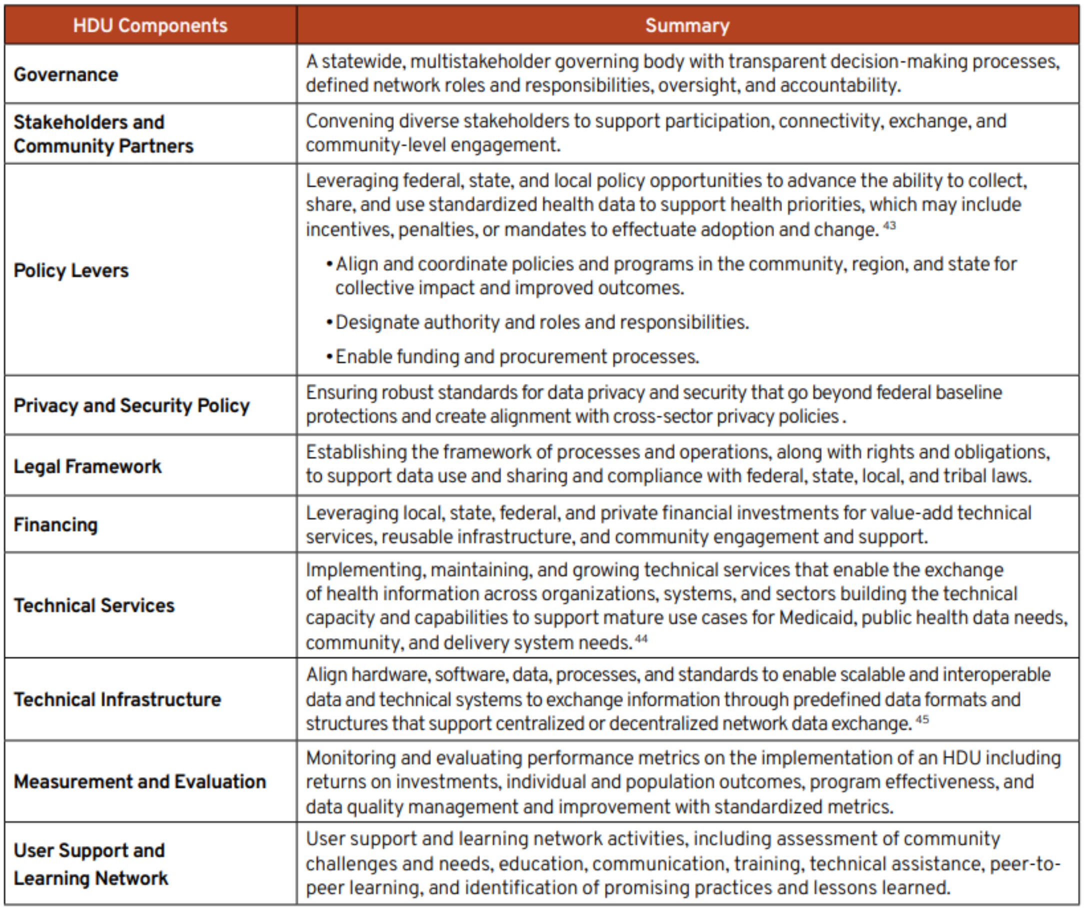
[13] https://www.azahcccs.gov/AHCCCS/Downloads/PublicNotices/rates/CYE24DAPPreliminaryPublicNotice.pdf

Maryland

Building on the success of its HIE efforts, Maryland was among the first states to adopt a health data utility approach to broad exchange[14]. Legislation mandates both participation in the HDU, CRISP, as well as minimum functionality of CRISP's services to ensure it meets the community's needs. This includes supporting efforts to advance health equity, facilitate communication of data between public health officials and health care providers, and enhance interoperability of health information throughout the State.



HDU Components	Summary
Governance	A statewide, multistakeholder governing body with transparent decision-making processes, defined network roles and responsibilities, oversight, and accountability.
Stakeholders and Community Partners	Convening diverse stakeholders to support participation, connectivity, exchange, and community-level engagement.
Policy Levers	Leveraging federal, state, and local policy opportunities to advance the ability to collect, share, and use standardized health data to support health priorities, which may include incentives, penalties, or mandates to effectuate adoption and change. [43] • Align and coordinate policies and programs in the community, region, and state for collective impact and improved outcomes. • Designate authority and roles and responsibilities. • Enable funding and procurement processes.
Privacy and Security Policy	Ensuring robust standards for data privacy and security that go beyond federal baseline protections and create alignment with cross-sector privacy policies .
Legal Framework	Establishing the framework of processes and operations, along with rights and obligations, to support data use and sharing and compliance with federal, state, local, and tribal laws.
Financing	Leveraging local, state, federal, and private financial investments for value-add technical services, reusable infrastructure, and community engagement and support.
Technical Services	Implementing, maintaining, and growing technical services that enable the exchange of health information across organizations, systems, and sectors building the technical capacity and capabilities to support mature use cases for Medicaid, public health data needs, community, and delivery system needs. [44]
Technical Infrastructure	Align hardware, software, data, processes, and standards to enable scalable and interoperable data and technical systems to exchange information through predefined data formats and structures that support centralized or decentralized network data exchange. [45]
Measurement and Evaluation	Monitoring and evaluating performance metrics on the implementation of an HDU including returns on investments, individual and population outcomes, program effectiveness, and data quality management and improvement with standardized metrics.
User Support and Learning Network	User support and learning network activities, including assessment of community challenges and needs, education, communication, training, technical assistance, peer-to-peer learning, and identification of promising practices and lessons learned.

Components of an HDU Framework, courtesy of Maryland Health Care Commission and Civitas Networks for Health "Advancing Implementation of Health Data Utility Models" issue brief[15]

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[14] https://mhcc.maryland.gov/mhcc/Pages/hit/hit_hdu/hit_hdu.aspx

[15] https://www.civitasforhealth.org/wp-content/uploads/2022/12/Civitas-MHCC-HDU-Brief_FINAL_2022-15-12.pdf