Rhode Island Current State Assessment

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Executive Summary

The Executive Office of Health and Human Services is in the process of developing a shared, statewide strategic roadmap to guide health information technology (HIT) activities and investments across the state over the next three years.

Rhode Island has a long history of investing in HIT to support broader efforts to improve the healthcare delivery system, reduce costs, and support public health initiatives. These investments include a statewide health information exchange (HIE), CurrentCare, statewide hospital event notifications, HealthFacts RI, the State Data Ecosystem, KIDSNET, and dozens of additional Health and Human Services (HHS) data systems. Private sector stakeholders have also made significant investments in electronic health records systems, analytics and population health platforms, and other technologies to support care management, reduce costs, and improve the health of Rhode Islanders.

This current state assessment catalogs and describes many existing HIT investments across the state and describes the policy landscape and regulatory drivers that may affect or influence HIT activities. The assessment draws on reviews of existing documentation and extensive interviews with key stakeholders across both state agencies and community partners.

In conjunction with a stakeholder assessment of the current state of HIT, this current state assessment provides the foundation for identifying shared priorities for HIT investments, clarifying and strengthening existing governance and convening bodies, and highlighting needs and gaps to be addressed by the statewide HIT Roadmap and Implementation Plan.

Introduction

The Rhode Island Executive Office of Health and Human Services (EOHHS) is developing a single statewide HIT Roadmap and Implementation Plan to promote alignment among stakeholders and guide future investments in HIT. This roadmap will be developed in cooperation with stakeholders across state agencies and community partners. It will reflect the needs and opportunities to support shared efforts to improve healthcare services and quality, lower costs, reduce provider burden, and better serve the people of Rhode Island.

Rhode Island has been a national leader in the spread and adoption of HIT initiatives across the state. These initiatives include CurrentCare[1] (statewide HIE), Care Management Dashboards facilitating statewide hospital event notifications, HealthFacts RI (All-Payer Claims Database (APCD)), State Data Ecosystem (which aggregates data across EOHHS and other state agencies), KIDSNET (Department of Health's (DoH's) integrated child health information system), and many other health and human services data systems. Rhode Island has also seen significant investments in HIT in the private sector, including widespread adoption of electronic health records (EHRs) and the use of numerous technologies for care management, population health, and advanced analytics.

As a foundation for the development of this shared roadmap, Rhode Island contracted with Briljent to conduct a current state HIT assessment. This assessment included the following:

A review of historical documents, including initiative summaries, Implementation Advanced Planning Documents (IAPDs), operational and sustainability plans from work under the State Innovation Model (SIM), and others listed in Appendix 1
In-person and phone interviews with state employees across multiple state agencies and programs, including EOHHS, Department of Health (DOH), Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH), Department of Human Services (DHS), and others
In-person and phone interviews with community partners, including hospitals and health systems, health plans and other payers, physician practices, community health centers, community mental health centers (CMHCs) and other behavioral health providers, and key associations representing hospitals, behavioral health, physicians and long-term care providers
Consultation with EOHHS HIT leadership and project sponsors

History of HIT Investments

Rhode Island has a long history of, and has been a national leader in, developing and investing in HIT. In 1997, RIDOH inaugurated KIDSNET, the state's integrated child health information system. The aim of the system was to ensure that all children in Rhode Island receive the appropriate health screenings and preventive care at the right time, by allowing providers and other authorized users to access immunization and other key childhood preventive health data.

The Rhode Island Quality Institute[2] (RIQI) partnered with Surescripts to pilot and test end-to-end electronic prescribing with 40 physicians in multiple, unaffiliated practices in 2003. In 2004, RIDOH received a grant from the Agency for Healthcare Research and Quality (AHRQ) to develop the

[1] http://www.currentcareri.org/
[2] https://www.riqi.org/

governance and technical infrastructure necessary to support statewide HIE efforts, now known as CurrentCare.

Following the passage of the Rhode Island HIE Act of 2008, a competitive request for proposals (RFP) process selected RIQI as the Regional Health Information Organization (RHIO), the state designed entity for HIE, and work continued on the development and launch of the HIE. RIQI received additional investments through the State HIE Cooperative Agreement and state-led Health Information Technology for Economic and Clinical Health Act (HITECH Act) initiatives. In 2010, RIQI received two further grants by the Office of the National Coordinator for Health Information Technology (ONC). The first was to serve as the state's Regional Extension Center (REC) to provide education and outreach services to help primary care providers achieve Meaningful Use (MU). The second was a $15.9 million Beacon Community grant to support interoperability with EHRs, enroll nursing home providers, support patient education efforts, and develop Direct message-based hospital alerts.

In 2012, the Rhode Island Medicaid EHR Incentive Program became operational, assisting Eligible Providers (EPs) and Eligible Hospitals (EHs) in achieving MU. Since that time, the program has supported 758 providers and 9 acute care hospitals, providing a little over $43.3 million in incentive payments.

Lastly, in 2015, EOHHS received a 4-year $20 million SIM grant from the Centers for Medicare and Medicaid Services (CMS). EOHHS used those SIM funds to improve primary care and behavioral health infrastructure, engage patients in healthy behaviors, and support the ability of providers and policy makers to better use data. SIM supported numerous HIT initiatives and pilots, providing significant funding for the infrastructure necessary to advance value-based payment models.

Rhode Island State Government Structure

Rhode Island has a number of unique characteristics with regards to the state government structure of health and human services. Broadly speaking, many agencies are organized under the umbrella of the EOHHS, and then EOHHS agencies work together with the Office of the Health Insurance Commissioner (OHIC) and HealthSource RI (HSRI) as the unified Health Cabinet.

The state created EOHHS to serve as the principal agency of the executive branch of state government for managing the Department of Children, Youth and Families (DCYF), RIDOH, DHS, and BHDDH). Rhode Island's Medicaid program is situated within EOHHS.

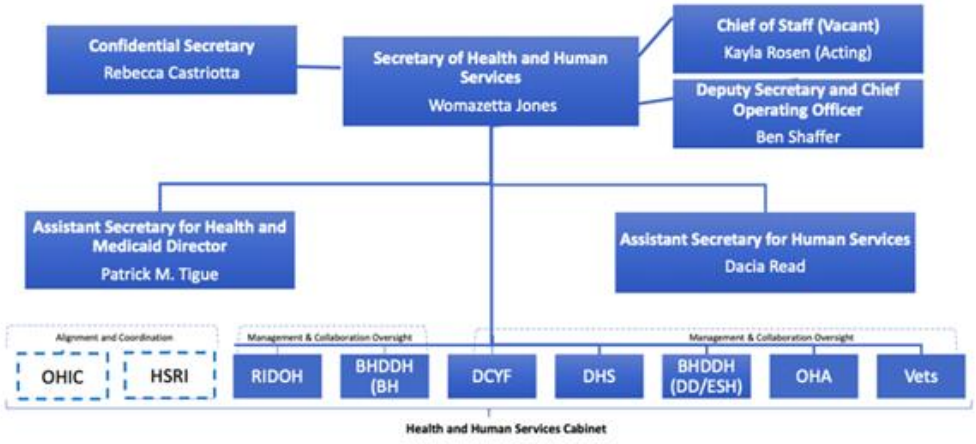


Figure 1: Health and Human Services

Because of Rhode Island's size, all public health services are operated at the state level, as opposed to the county or local level as in most other states. Similarly, the Department of Corrections (DoC) operates correctional facilities on a single campus with a unified health services program.

Rhode Island is also unique in having a specific office charged with overseeing commercial health insurance. OHIC oversees insurers across the state with the goal of promoting improved accessibility, quality, and affordability for the healthcare delivery system. OHIC works in the following three primary areas:

1. Focusing on providers and health plans to realign payment practices and incentivize primary care
2. Assisting consumers to reduce unnecessary services through education and plan design
3. Supporting healthcare infrastructure through administrative simplification

RI also developed, and continues to operate, its own health insurance exchange known as HealthSource RI (HSRI). HSRI facilitates access to health insurance through the Affordable Care Act (ACA) and works closely with OHIC and EOHHS on several data-related initiatives. HSRI conducts a regular survey on Rhode Islanders' health insurance status, experience getting care, and use of healthcare services.

Finally, state IT resources are centrally managed through the Division of Information Technology (DoIT) at the Rhode Island Department of Administration (DOA). Each agency is assigned a dedicated IT manager, who serves as the agency coordinator for IT needs and facilitates communication between the agencies and DoIT. The State Chief Information Officer (CIO) and staff work closely with these deployed IT managers, as well as with agency leadership, to provide support, guidance, and oversight of IT projects. State IT projects are reviewed by DoIT to ensure enterprise alignment, reduce the risk of project failure or duplication of efforts across agencies, and provide security and technical oversight as needed.

EOHHS Strategic Vision

EOHHS' four Strategic Priorities are as follows:

1. Preserve and improve access to quality, cost-effective, physical and behavioral healthcare
2. Shift systems and investments to prevention, value, choice, and equity
3. Curb the opioid epidemic, address addiction, and improve mental health
4. Promote efficient, effective and fair delivery of services and operations

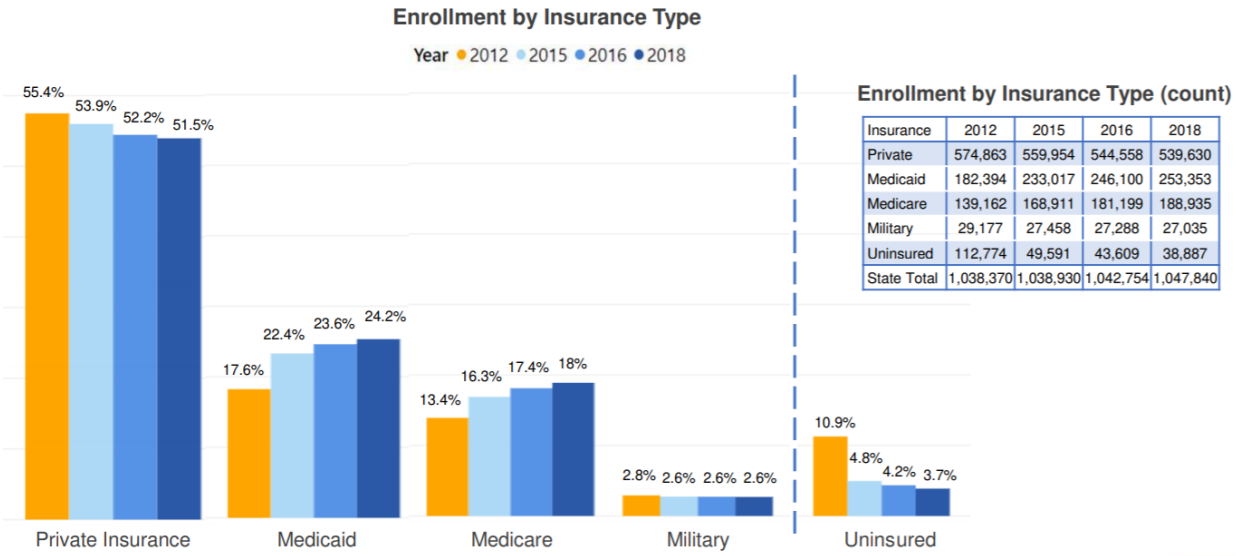
Taken together, this means that the state is looking to shift spending from high-cost, treatment-focused services to lower-cost community-based, prevention-focused services; align payment models to achieve these goals; focus on social determinants to improve health and elevate families from poverty; and continue strengthening agency performance.

It is important for the state to ensure that its HIT systems are aligned and meeting the needs of state departments and community partners.

Overview of the Healthcare Delivery System in Rhode Island

Rhode Island is the smallest state in the country with a population of just over a million people. There are 13 licensed hospitals, 8 Federally Qualified Health Centers (FQHCs), 6 Community Mental Health Centers (CMHCs), over 6,000 licensed physicians, and 85 licensed nursing homes.

The vast majority of Rhode Islanders have health insurance, with the rate of uninsured falling below 4% in 2018. Blue Cross & Blue Shield of Rhode Island (BCBSRI) is the largest commercial plan, followed by United Healthcare and Tufts Health Plan. Medicaid is provided through contracts with three managed care organizations: Neighborhood Health Plan, Tufts Health Plan, and United Healthcare Community Group. There is a very small Medicaid population that is managed directly by EOHHS, called Medicaid Fee for Service (Medicaid FFS).



Enrollment by Insurance Type (count)

Insurance	2012	2015	2016	2018
Private	574,863	559,954	544,558	539,630
Medicaid	182,394	233,017	246,100	253,353
Medicare	139,162	168,911	181,199	188,935
Military	29,177	27,458	27,288	27,035
Uninsured	112,774	49,591	43,609	38,887
State Total	1,038,370	1,038,930	1,042,754	1,047,840

Figure 2: Enrollment by Insurance Type. Source: HealthSource RI

Key Policy Initiatives and Programs

Rhode Island has been a leader in healthcare efforts, including advancing the use of primary care and promoting the use of HIT to improve quality and reduce costs.

PCMH and Primary Care

In 2008, OHIC and EOHHS convened at the Care Transformation Collaborative of RI (CTC-RI, formerly known as the Chronic Care Sustainability Initiative (CSI-RI), to promote the Patient Centered Medical Home (PCMH) model among primary care practices (internal medicine, family medicine, and pediatrics)).

CTC-RI began with five pilot sites and has grown to 81 sites representing over a third of the RI patient population. CTC-RI was the lead for the CMS Multi-Payer Advanced Primary Care Practice (MAPCP), is supported through multi-payer contributions, and continues to support practice transformation among new primary care practices each year.

In 2010, OHIC established a comprehensive set of Affordability Standards to lower costs and improve quality. These standards encourage insurance companies and hospitals to reduce costs without lowering the quality of care or reducing coverage and have been updated several times. The standards require insurers to increase primary care spending, incentivize the spread and adoption of PCMHs, and support alternative payment models that promote value.

Integration of Behavioral and Physical Health

Through SIM, RI began investing in the integration of behavioral and physical health with a highly successful pilot initiative led by CTC-RI. Participating primary care practices hired on-site behavioral health clinicians to ensure the ability to provide a warm hand-off for patients that needed a referral for behavioral health. The pilot uncovered billing and coding issues tied to the co-location, some of which were remediated through collaboration among providers and payers to troubleshoot the issues. Throughout the four years of SIM, the concept of integrating physical and behavioral health transformed from one funded project to an overall goal of the entire project.

Value-Based Purchasing and Alternative Payment Models

The state of Rhode Island has been driving the adoption of value-based purchasing though alternative payment models. The second major goal of the OHIC Affordability Standards is to reduce costs through the adoption of payment reform strategies. In 2019, the Alternative Payment Model (APM) target was to have 50% of medical payments be made through an APM. Medicaid is also in the process of adopting APM for its beneficiaries through the implementation of Accountable entities (Medicaid's version of Accountable Care Organizations (ACOs)).

ACO Landscape

Rhode Island has an active and growing ACO market across Medicaid, Medicare and commercial markets. Coastal Medical created the first Medicare ACO in 2012 and has been joined by several others. Several health plans, including United Healthcare and Blue Cross Blue Shield have partnered with provider organizations to launch ACOs in the commercial market.

Accountable Entity Program

The Accountable Entity (AE) program[3] is an initiative of EOHHS to transform the delivery of Medicaid by creating provider-led organizations responsible for the total cost of care of attributed Medicaid members. There are currently six AEs certified across the state. Certification requirements cover eight organizational domains, including several with HIT-related components (information technology (IT) infrastructure; integrated care management; population health and system transformation; and quality management).

Specific requirements include the following:

1. CurrentCare (statewide HIE) member enrollment
2. Contribution of data to CurrentCare
3. Support for the use of Certified EHR Technology (CEHRT)
4. Demonstrated capacity for risk stratification
5. Use of real-time alerts for emergency department (ED) and hospital utilization
6. Ability to share clinical data directly with the health plans

Population Health and Social Determinants of Health (SDOH)

Rhode Island's focus on addressing the social determinants of health (SDOH) began many years ago. Because only 20% of health activities happen in a provider's office, Rhode Island is emphasizing the creation of community/clinical linkages through the programs listed below. There have been several investments through Medicaid waivers and various grant opportunities (including SIM) to improve the state's community-wide approach to reducing disparities. These include, for example, the following:

RIDOH Health Equity Zones: The Health Equity Zone (HEZ) initiative is an investment by RIDOH aimed at developing sustainable community infrastructure within geographically defined locations to collectively work towards system-level changes and community improvements that ultimately improve health outcomes.

Accountable Entity Program: Medicaid's AE Program includes two EOHHS-developed SDOH quality measures included as part of Total Cost-of-Care Pay-for-Performance methodology. Quality Performance Years 1 and 2 include an SDOH Screening measure using admin/clinical data as a Pay-for-Reporting requirement, with Quality Performance Year 3 including the measure as reporting-only without payment. In year 3, it is replaced with a SDOH Infrastructure Development measure on a Pay-for-Performance basis. Specifications for the measures can be found in Appendices A and B of the Rhode Island AE Program's Total Cost-of-Care Quality and Outcome Measures Implementation Manual.[4]

Community Health Teams: Working with primary care providers, Community Health Teams (CHTs) assess high-risk patients' health needs and coordinate community-based support services. The Care Transformation Collaborative (CTC) has developed an infrastructure to support CHT standards, data analysis, technical assistance, and reporting. Through SIM, CHTs also carried out Screening, Brief Intervention, and Referral to Treatment (SBIRT) screenings for substance use disorder throughout the state in primary care, hospital emergency departments, in the community, and in the DOC. CHTs goals

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[3] http://www.eohhs.ri.gov/Initiatives/AccountableEntities.aspx

[4] http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/v2Quality%20and%20Outcome%20Measure%20Implementation%20Manual%202019%20final_.pdf

are to support patients and improve population health by increasing access to community services and resources to address social, behavioral, environmental, and/or complex medical needs.

All of these population health-focused projects will continue to be a major focus for the RI community in the coming years. And for them to be successful, they have identified a need for better access to data and technology solutions to communicate that data.

Other OHIC-Related Efforts

Measure Alignment

Increasingly, providers must report quality measures to various health plans and government agencies to meet regulatory requirements and receive incentive payments related to quality. These measures can include different specifications, requirements, and calculations, creating a significant burden on providers to extract, gather, and report the measures.

In 2015, with support from SIM, OHIC created a Measure Alignment Workgroup tasked with creating a common measure set. The Workgroup developed measures across several categories, including ACOs, primary care, hospital, behavioral health, and maternity, as well as a core set of measures that must be included in all applicable contracts, and a menu set of measures for health plans to choose from to reflect that different specialties or patient populations may have varying measures appropriate to that provider. The Workgroup convenes annually to review and update the Aligned Measure Set. While the Aligned Measure Set is only regulatorily required for commercial health plans, Medicaid has also adopted the measure set.

Healthcare Cost Trends Project

In coordination with the Office of the Governor and EOHHS, OHIC is working with Brown University on a data-driven cost trend analysis. The goal of this work is to leverage existing data sources, such as HealthFacts RI (the state's APCD), to identify cost and utilization drivers, reduce unwarranted variation and unnecessary care, and inform health systems' transformation efforts.

The project is funded by a grant from the Peterson Center on Healthcare and overseen by a public-private steering committee.

RI Commerce and Economic Development Activities

The Rhode Island Department of Commerce and Rhode Island Commerce Corporation operate numerous programs and initiatives aimed at increasing economic activity and business investments in the state. The Rhode Island Commerce Corporation has identified digital health and life science applications as key potential drivers of economic growth and is actively involved in supporting new investments. Support activities include identifying potential tax incentives available, collaborating with training agencies and educational institutions, and facilitating events and connections.

Long-Term Services and Supports Redesign

Supporting the redesign of Rhode Island's long-term services and supports is a key initiative of EOHHS. This work includes improving the "no wrong door" approach to accessing services, streamlining communication capabilities across agencies and community partners, and implementing technology to support new initiatives like the paid caregiver registry.

Current Overview of HIT Landscape

Rhode Island has a long history of investments in HIT, including widespread adoption of EHRs, significant investments in HIE efforts, and a wide array of other tools to help healthcare organizations use, leverage, and communicate data across systems and organizations.

Results of Statewide HIT Survey

Through a contract with Healthcentric Advisors, RIDOH conducts a biennial HIT survey of all licensed physicians, advanced practice registered nurses, and physician assistants. The HIT survey measures the spread and adoption of EHRs, statewide HIE, e-prescribing, and patient and clinician communication through technology. The survey also measures HIT-related stress, and HIT is increasingly recognized as a contributor to physician burden and burnout. In 2019, the survey collected responses from 1,835 physicians (43% response rate).

Prevalence of EHRs

According to the 2019 HIT Survey[5], 92.5% of responding physicians have an EHR.

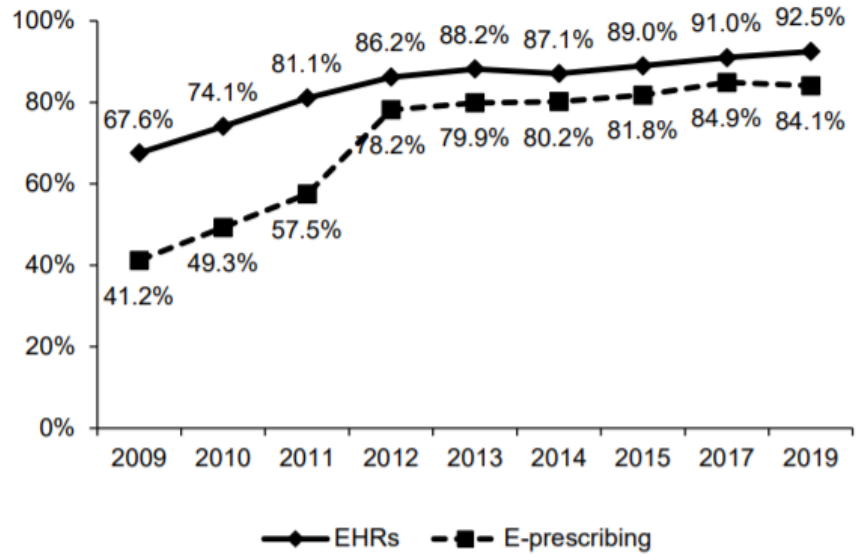

Figure 3: Prevalence of EHRs and e-prescribing among physician survey respondents[6]

For hospital-based physicians, the most common EHRs are Epic (57.6%), Cerner (17.1%), Meditech (8%), and CPRS/Vista (4%). For office-based physicians, the most common EHRs are Epic (26%), eClinicalWorks (20.4%), Athenahealth (9.4%), Greenway (5.1%), Modernizing Medicine (3.1%), Ingenix-Caretracker (3.0%), and CPRS/ Vista (2.5%).

[5] http://www.health.ri.gov/publications/annualreports/HealthInformationTechnologyPhysicanSurveySummary.pdf
[6] All figures are from the 2019 HIT Survey

E-prescribing rates for uncontrolled and controlled substances

Over half (59.2%) of office-based physicians who prescribe medications responded that they "always" transmit prescriptions electronically. Above one-quarter (28.4%) of the hospital-based providers said that they always e-prescribe to a pharmacy outside of their hospital pharmacy.

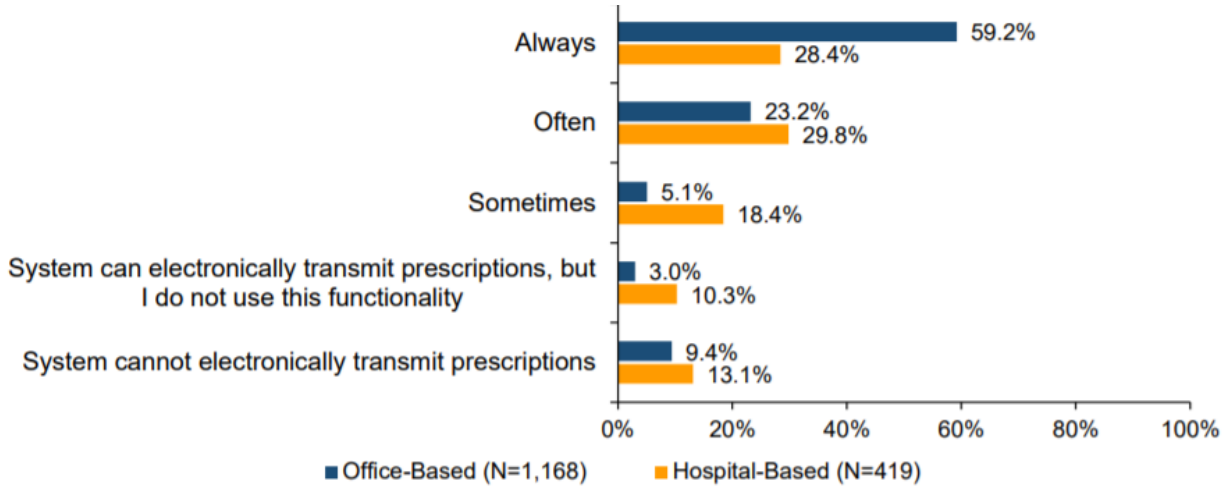

Figure 4: E-Prescribing rates among physicians

Among physicians who can e-prescribe medications and prescribe controlled substances, 41.2% of office-based physicians stated they always or often e-prescribe controlled substances. For the hospital-based physicians, 27.5% of physician respondents said they always or often e-prescribe controlled substances. Beginning in January 2020, Rhode Island law will require all prescribers to e-prescribe controlled substances.

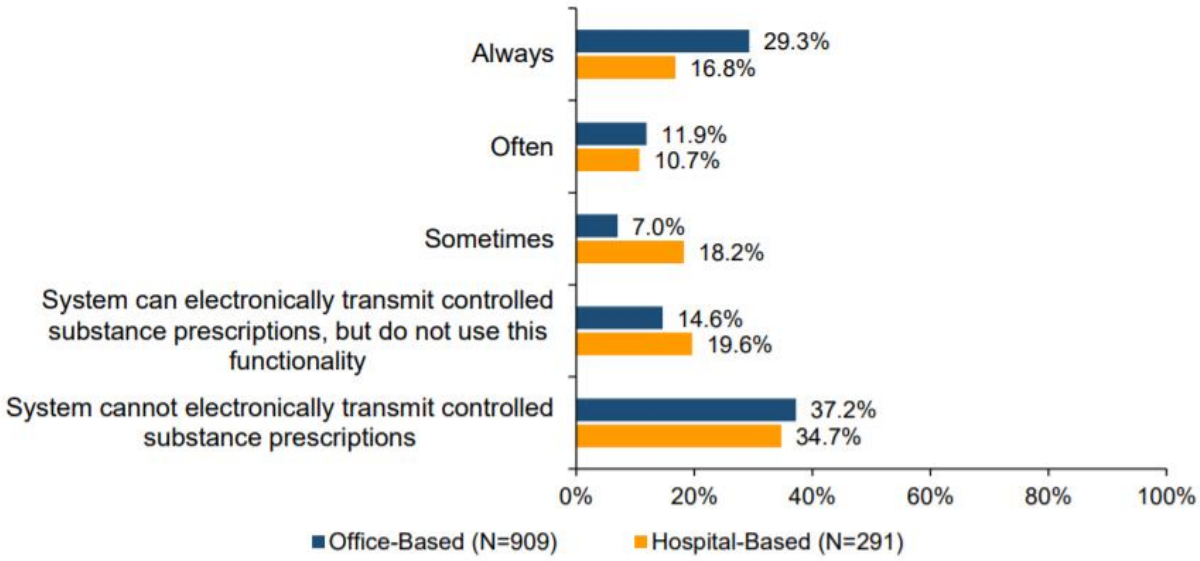

Figure 5: Among the physicians who e-prescribe medications and prescribe controlled substances, the respondents who e-prescribe controlled substances, by practice setting

The HIT survey shows moderate awareness and usage of various CurrentCare services, including almost 40% of physicians who are somewhat or very familiar with the CurrentCare Viewer, 30% who are aware of CurrentCare being integrated within an EHR, and over 25% who are aware of CurrentCare's Hospital Alerts.

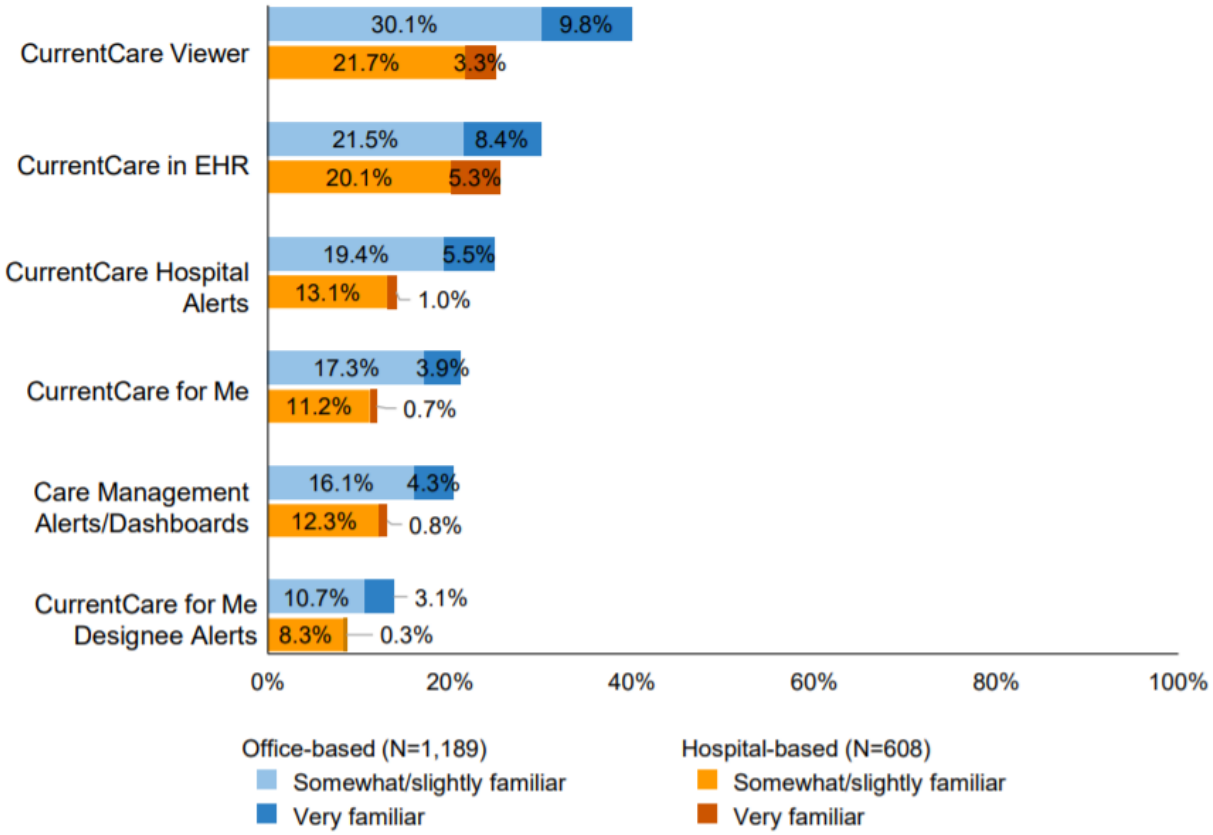

Figure 6: HIE services with which physician respondents are familiar, by practice setting

Use of CurrentCare is somewhat lower than awareness of it, with approximately 30% of physicians reporting using the CurrentCare Viewer, CurrentCare within an EHR, or CurrentCare Hospital alerts for transitions of care purposes.

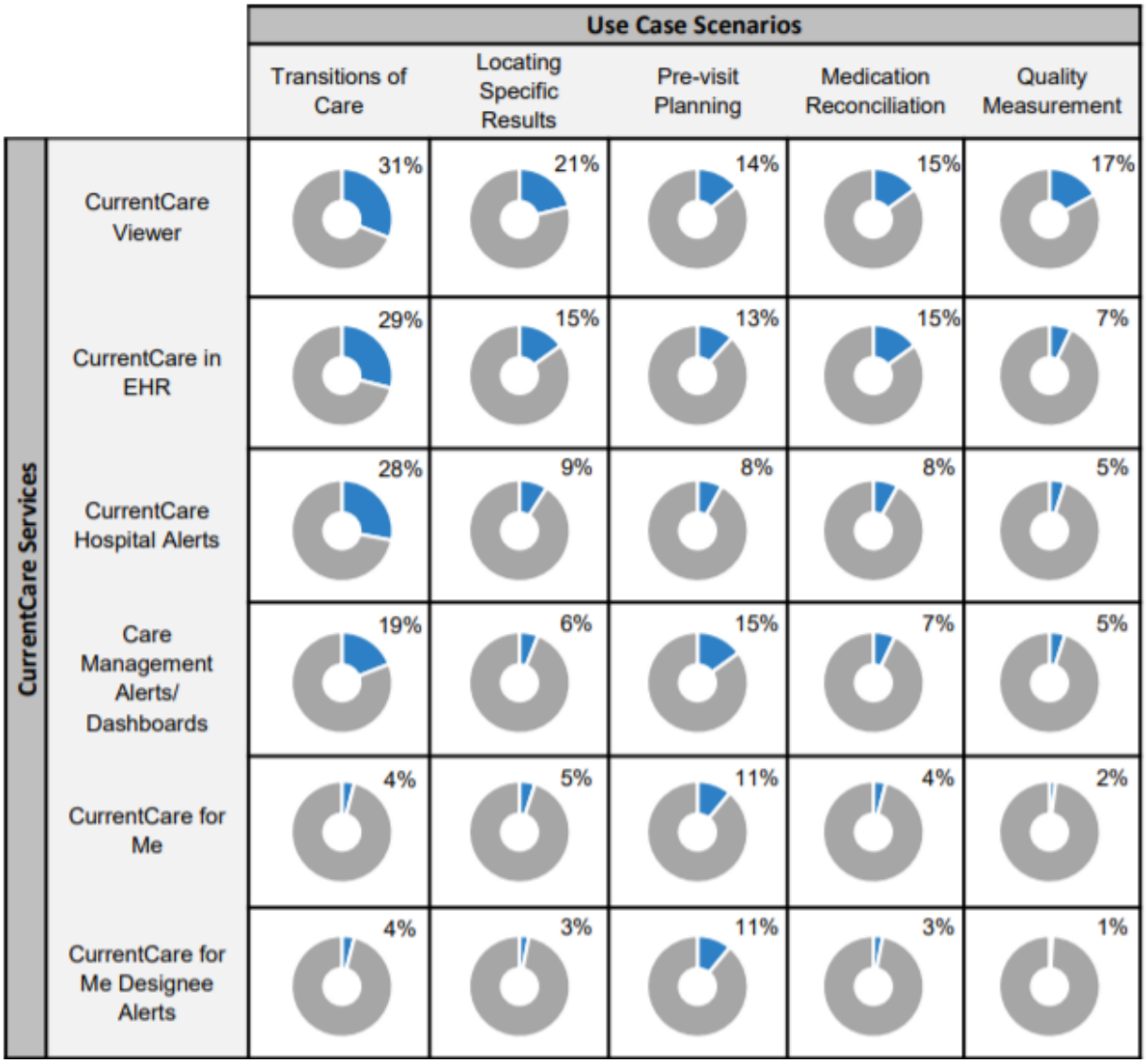

Figure 7: HIE services that primary care physician respondents or their staff use (N=340)

Key Statewide HIT Initiatives

Rhode Island has made several significant investments in statewide HIT systems and initiatives. Some are located entirely within state government, while others are in cooperation with private stakeholders.

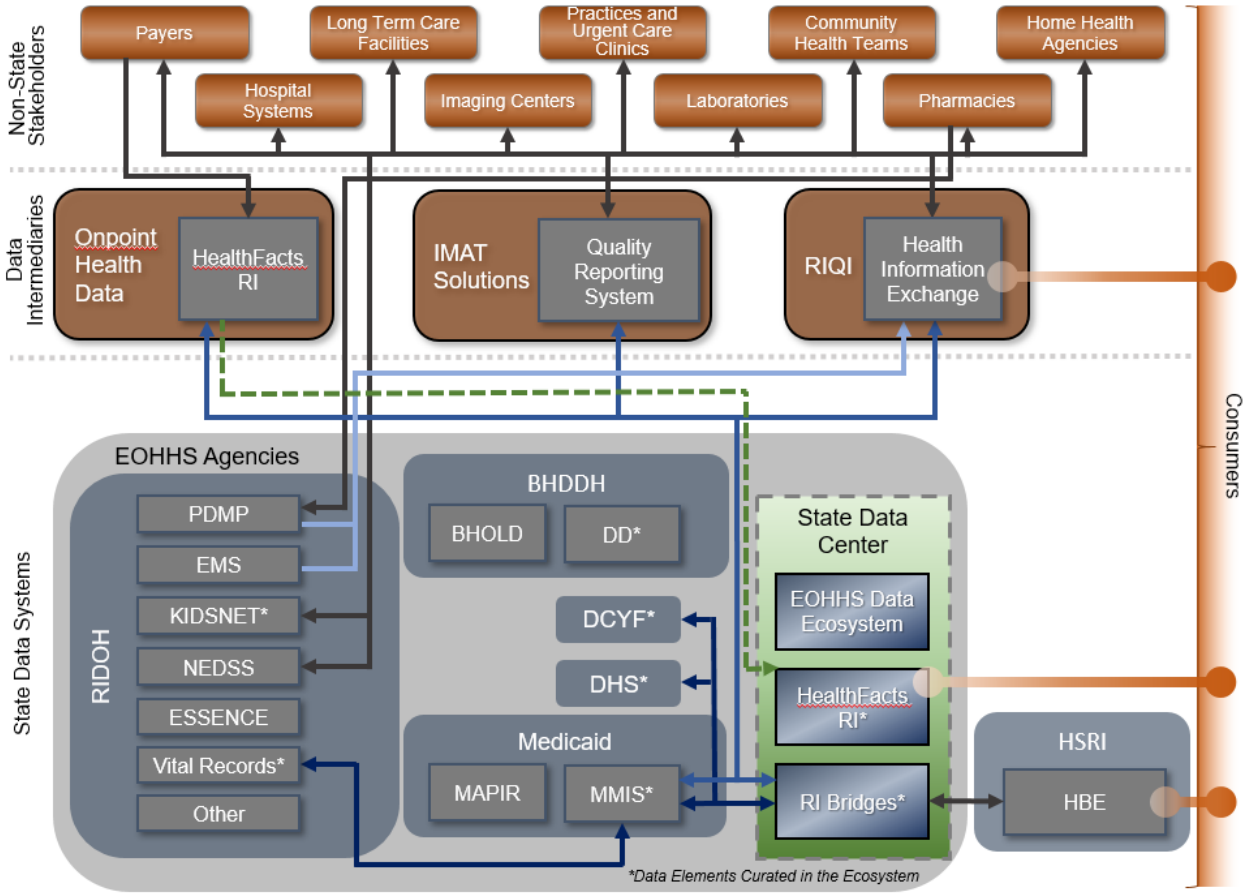

Figure 8: Rhode Island Health Data Architecture

Quality Reporting System *(formerly the Healthcare Quality Measurement Reporting and Feedback System—HQMRFS)*

The need to gather and analyze healthcare quality and outcome data has grown significantly as healthcare entities move towards value-based payment models. A growing number of state and federal reporting requirements have put pressure on providers to produce necessary quality reports and data extractions, often at a high cost of staff time and technology customization. In response, EOHHS, through SIM, developed the Quality Reporting System (QRS). It is designed to reduce provider burden by simplifying data collection, measure calculation, and data exchange for quality reporting purposes. It will collect data once and address reporting requirements of multiple payers and programs. The effort is currently led by EOHHS and overseen by a public-private workgroup.

SIM contracted with IMAT Solutions[7] (IMAT) as the QRS vendor through a competitive RFP process. IMAT serves as a data intermediary, collecting clinical data from provider EHR systems, claims files, and other data sources such as HealthFacts RI; transforming and normalizing the data; and offering reporting solutions for health plan, state, and federal needs. The QRS is initially developing 53 measures selected from the OHIC Aligned Measure Set, Promoting Interoperability program measures, AE program measures, and other measures from Medicaid-related programs in Rhode Island.

Several provider organizations have begun implementation with IMAT and are working through data submission and validation testing. The QRS program is working with RIQI to explore opportunities to reduce burden and cost on providers by leveraging existing EHR interfaces to provide data to IMAT. The EOHHS QRS program is also working with AEs and Medicaid Managed Care Organizations (MCOs) on Medicaid AE program submission requirement timelines, to reduce the risk of uncoordinated investments in quality reporting solutions.

The effort is currently being funded by 90/10 HITECH funds.

HealthFacts RI (All Payer All Claims Database)

The Rhode Island APCD, HealthFacts RI, collects and links individuals' claims data without any direct personal identifiers from all Rhode Island payers longitudinally to help identify healthcare cost savings, healthcare quality, and health outcomes improvement opportunities. HealthFacts RI is jointly managed by EOHHS, RIDOH, OHIC, and HealthSource RI.

Legislation establishing the APCD passed in 2008, and development began in 2012. The database currently collects data from all health plans with over 3,000 Rhode Island members, and contains historical information since 2013. The database also contains Rhode Island Medicaid claims data and CMS Medicare claims data from 2013 to 2017. Following a 2016 Supreme Court decision (Gobeille v. Liberty Mutual) striking down a requirement that self-insured health plans must submit data to all payer claims databases, many health plans halted the submission of self-insured plan claims to HealthFacts RI. While some self-insured plans have voluntarily continued to submit claims, most have stopped their submissions. This has resulted in an approximately 9% reduction in total submitted claims. Note: the self-insured plan population has marked differences in terms of claims and utilization from other health plan populations, and the loss of these claims data within the APCD is considered significant.

HealthFacts RI is overseen by the Interagency Staff Workgroup (ISW), which includes representatives from supporting agencies and provides overall project governance and leadership. An eleven-member multidisciplinary public APCD Data Release Review Board advises the Director of RIDOH on protecting patient privacy when releasing data. The board meets regularly to review data requests and ensure that adequate privacy and security precautions are in place and that the released data cannot be used to re-identify patient data.

The APCD is currently expanding by adding dental claims to the database; working with health plans to define and capture data on non-claims-based spending, such as capitation and other value-based care payment arrangements; and improving the overall data quality of submissions. HealthFacts RI is also

[7] https://imatsolutions.com/

working with both self-insured employers and plan administrators to improve voluntary reporting to the program.

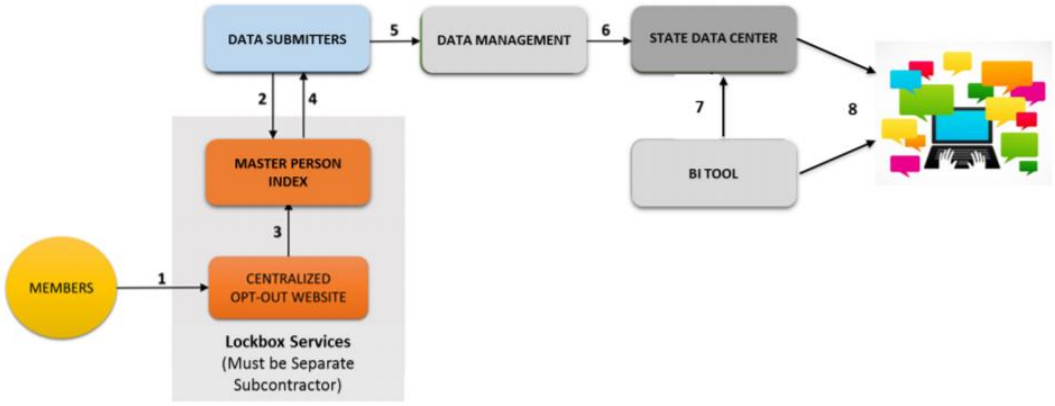

Figure 9: All Payer All Claims Database

HealthFacts RI is funded through a combination of fees, 75/25 operations and maintenance funding through CMS Medicaid Management Information System (MMIS) funding, and 90/10 Design, Development, and Implementation (DDI) MMIS funding. Fees are charged for non-ISW agency and external entity data requests. Primary external entity users include research institutions, healthcare providers, and public policy research entities. 90/10 DDI funding is used for the development and implementation of new features and capabilities.

Data Ecosystem

The EOHHS Data Ecosystem is a collaborative data integration project designed to better leverage state data across programs and agencies for policy development, program oversight, and program development. In 2017, EOHHS used funds from SIM to test the feasibility and impact of integrating state agency data sets, and work was continued with CMS MMIS funding support. The goal of the Ecosystem is to develop cross-agency reports and analytic functionality that provides Medicaid a more complete picture of state program beneficiaries to improve performance management and support program development and improvement.

EOHHS developed the Ecosystem as a principles-first, agile project. Rather than attempt to build a master integrated human services data warehouse, EOHHS selected a few early use cases, and built data integrations to provide immediate value. Over time, additional data sources have been added and curated to address new high-value research questions. As the Ecosystem grows in capacity, some agency program staff have limited access to a reporting environment to leverage those data integrations for Medicaid and program-level research and policy analysis.

Data sources are linked at the person and family levels, which allows for a longitudinal view across agencies, programs, and initiatives. While data is linked at the person level, it is also used at the aggregate level to inform policy development and program evaluation. Data is currently refreshed as often as monthly, though individual program data contributions may be limited or restricted based on program, state, or federal data use restrictions.

The Ecosystem program is comprised of an executive team of approximately eight personnel at varying levels of commitment responsible for the leadership, management, and technical and operational

oversight of the project. An executive board comprised of the directors from EOHHS agencies, sub-agencies, sister agencies (HealthSource RI and OHIC), and DoIT provides overall governance and strategy, meeting regularly to review program progress, prioritize projects, and make decisions on new data integration matters. A data stewards group, comprised of senior operations and analytics staff and data owner representatives, ensures appropriate use of data and helps to guide interpretation of results based on known data limitations, exclusions, and other pertinent information. A multi-agency memorandum of understanding (MOU) outlines the sharing of data between agencies and permissible use cases for Ecosystem projects.

The Ecosystem is a core component of the HealthFacts RI MMIS module and is currently funded through 90/10 DDI MMIS funds. As components become fully operational, they will be sustained through 75/25 MMIS funding.

E-Referral Discovery

Social and economic factors, sometimes referred to as the social determinants of health (SDOH), are increasingly recognized as major influences on overall health and wellness. Because of this, many healthcare providers, along with AEs and other ACOs, are making investments in the capacity to screen for SDOH needs and refer patients to community service organizations that can address those needs. Through SIM, Rhode Island invested in validating, enhancing, and updating the local 211 social services directory at the United Way of RI. Building upon both the work completed under SIM, as well as related referral efforts at RIDOH, DCYF, Office of Veterans Services, and others, EOHHS is exploring opportunities to develop a statewide e-referral platform for social needs. The technology platform would ideally interface with provider EHR systems, communicate referrals to community service organizations to address patients SDOH needs, and, where applicable, provide feedback to providers to “close the loop” on the referral.

An EOHHS-led inter-agency workgroup has been exploring this concept. EOHHS HIT staff is working closely with Medicaid for the initial planning and potential development of such a project, with the intent to build a system that can be leveraged by other agencies as well. HITECH 90/10 funding is currently being used for planning activities and may be available to support implementation activities over time.

Other EOHHS and Medicaid Initiatives

RI Bridges

In 2015, EOHHS transitioned the Medicaid eligibility and enrollment system, formerly called InRhodes, to create the RI Bridges system, a single technical platform that supports Medicaid, HSRI, and other state human services eligibility. RI Bridges is an interagency initiative between EOHHS, HealthSource RI, and OHIC. The first phase of this effort, to implement the ACA and develop an integrated approach to Modified Adjusted Gross Income (MAGI) Medicaid and health insurance exchange eligibility, went reasonably smoothly. The integration of the remaining human services programs such as Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), childcare support, and long-term care proved to be significantly more difficult with a premature roll out resulting in negative consequences. This experience resulted in a loss of community trust regarding the state’s management of IT projects. The subsequent turn-around activities, analysis, and evaluation led to sweeping changes in how the state now manages IT projects and to increases in the capacity and influence of DoIT across state agencies.

Medicaid Management Information System

Rhode Island has made significant investments in the state's core Medicaid IT systems. While not fully modular, the MMIS has a number of component systems as part of its overall infrastructure. Major components include the following:

1. MMIS, the Medicaid claims adjudication system
2. Human Services Data Warehouse (HSDW), which serves as a landing and storage location for Medicaid and other human services data including the EOHHS data ecosystem for use in specific operational processes outside of core claims transactions performed in the MMIS
3. Medical Assistance Provider Incentive Repository (MAPIR), which is the MU attestation and management system for providers as part of the promoting interoperability program, initially developed as part of a multi-state collaborative
4. Other components such as the Lexus Nexus system to support program integrity (fraud waste and abuse), a provider enrollment system, and various subsystems supporting MMIS operations.

Rhode Island is planning for the reprocurement and replacement of key systems over the next several years to meet updated CMS requirements around modularity.

Key RIDOH Projects

RIDOH[8] serves to prevent disease and promote the health and wellbeing of the people of Rhode Island. Its three leading priorities are as follows:

1. Addressing the socioeconomic and environmental determinants of health
2. Eliminating disparities of health and promoting health equity
3. Ensuring access to quality health services for all Rhode Islanders, including the state's vulnerable populations

RIDOH operates many specific programs across six divisions and two institutes. The RIDOH Informatics Coordinator, in coordination with the DoIT IT Manager and key staff from the Center for Health Data and Analysis and Public Health Informatics, and EOHHS HIT staff, works across RIDOH programs and centers to identify opportunities for collaboration, shared investments, and coordination with broader statewide HIT efforts.

RIDOH also plays a central role in the statewide governance of HIT initiatives, including having statutory requirements to convene an HIT Advisory Committee, the HIE Advisory Commission, and the APCD Data Release Review Board. RIDOH collaborates closely with EOHHS on these governance activities.

RIDOH maintains a large number of categorical program-specific databases, often as a result of federal reporting and/or funding requirements. The information below details some of the major RIDOH data systems and registries where data exchange is paramount. Understanding the current state of these systems will be critical to developing the statewide HIT roadmap.

[8] http://www.health.ri.gov/

KIDSNET

KIDSNET[9] is an integrated database that creates a longitudinal child's health record for all children who obtain care in RI. Since 1997, KIDSNET has captured information on all Rhode Island births, childhood immunizations and screenings, and children's participation in several programs across RIDOH, DHS, and the Rhode Island Department of Education (RIDE). Legislation in 2019 authorized RIDOH to create an adult immunization registry, and KIDSNET is in the process of building out this capability.

KIDSNET exchanges information through a variety of mechanisms, including direct interfaces with healthcare providers and hospitals, a Web-based portal, and flat file transactions. Providers can also submit immunization records by mail. Because KIDSNET consolidates data from a variety of sources, data use is governed by a variety of state and federal laws. Primary users include pediatricians, school nurses, and public health professionals.

KIDSNET Information Sources

- Childhood immunizations
- Birth records
- Newborn screenings
- Family visiting
- Women, Infants, and Children (WIC)
- Early intervention
- Lead screening
- Head start
- School enrollment
- Developmental screening
- Birth defects
- Foster care
- Dental sealants
- Cedar services

Through an interactive Web portal, users are able to generate custom reports for multiple purposes, including longitudinal views of a patient and aggregate panel reports on screenings and immunizations.

KIDSNET is connected to the EOHHS data ecosystem and the program is working on ways to support other Medicaid and early childhood interventions efforts. Because KIDSNET receives information from other data systems, upgrades in those systems may improve data access or availability. Currently, IT upgrades in Vital Records and Women, Infants, and Children (WIC) are in the planning or early implementation phases. KIDSNET is not presently exchanging data with the statewide HIE, CurrentCare, but this concept has been discussed in the past and is increasingly being requested from health care providers.

[9] http://www.health.ri.gov/programs/detail.php?pgm_id=19

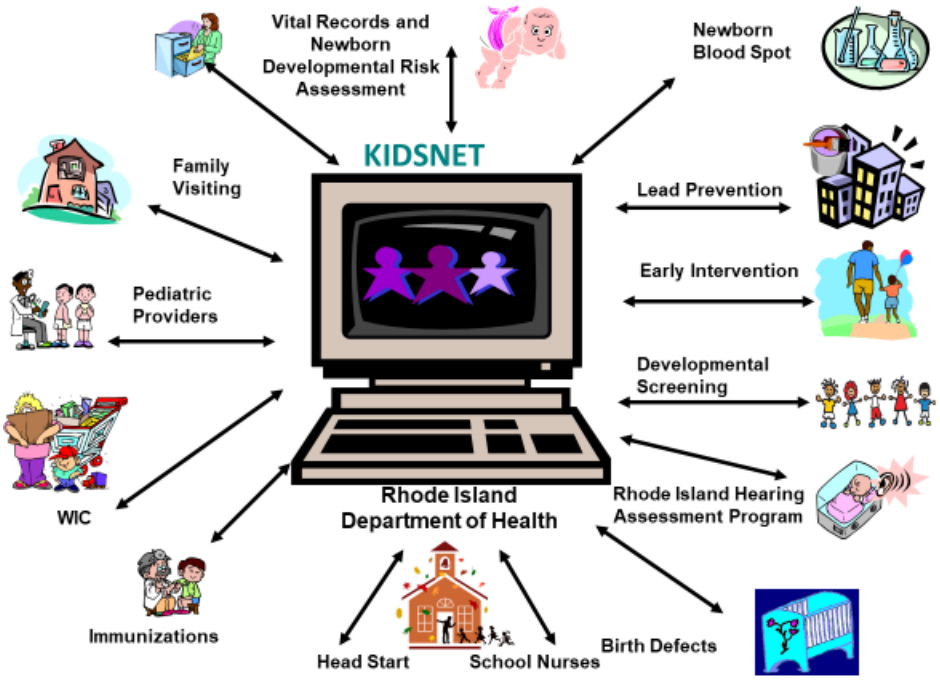

Figure 10: KIDSNET

KIDSNET is currently funded through a mix of Centers for Disease Control and Prevention (CDC) immunization registry support, program transfers, data request fees, and other grants. The expansion of adult immunizations to the system is supported by HITECH 90/10 funding, as it supports providers' ability to meet MU.

Prescription Drug Monitoring Program

The Rhode Island Prescription Drug Monitoring Program[10] (PDMP), authorized under RIGL § 21-28-3.32, collects all dispensing data for controlled substance prescriptions (Schedules II - V) into a centralized registry. Information is used to improve patient care, identify risky prescribing practices, and help prevent drug diversion. All practitioners that hold a Rhode Island Controlled Substance Registration (CSR) must register with the PDMP. Prescribers are required to check the PDMP prior to prescribing an opioid for the first time, and at least every three months for continuous opioid prescriptions. RIDOH also uses the PDMP to evaluate compliance with Rhode Island's Safe Opioid Prescribing Guidelines and support drug overdose prevention program efforts.

The database, run by Appriss Health (Appriss), currently collects information about dispensed prescriptions from Schedule II-V from all outpatient Rhode Island pharmacies. Data is available through a Web-based portal, EHR integrations, and the ED Smart Notification service developed by RIQI. The portal includes the ability for prescribers to authorize delegates to search on their behalf, as well as alerts and notifications for risky prescribing patterns.

[10] http://health.ri.gov/healthcare/medicine/about/prescriptiondrugmonitoringprogram//

Funding is provided by CDC grants, state appropriations, HITECH 90/10 funding, and Medicaid Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment (SUPPORT) Act funding at 100%. The Rhode Island Board of Pharmacy oversees Appriss's work and the PDMP database and works collaboratively with the Drug Overdose Prevention Program. Data use is governed by RIGL § 21-28-3.32.

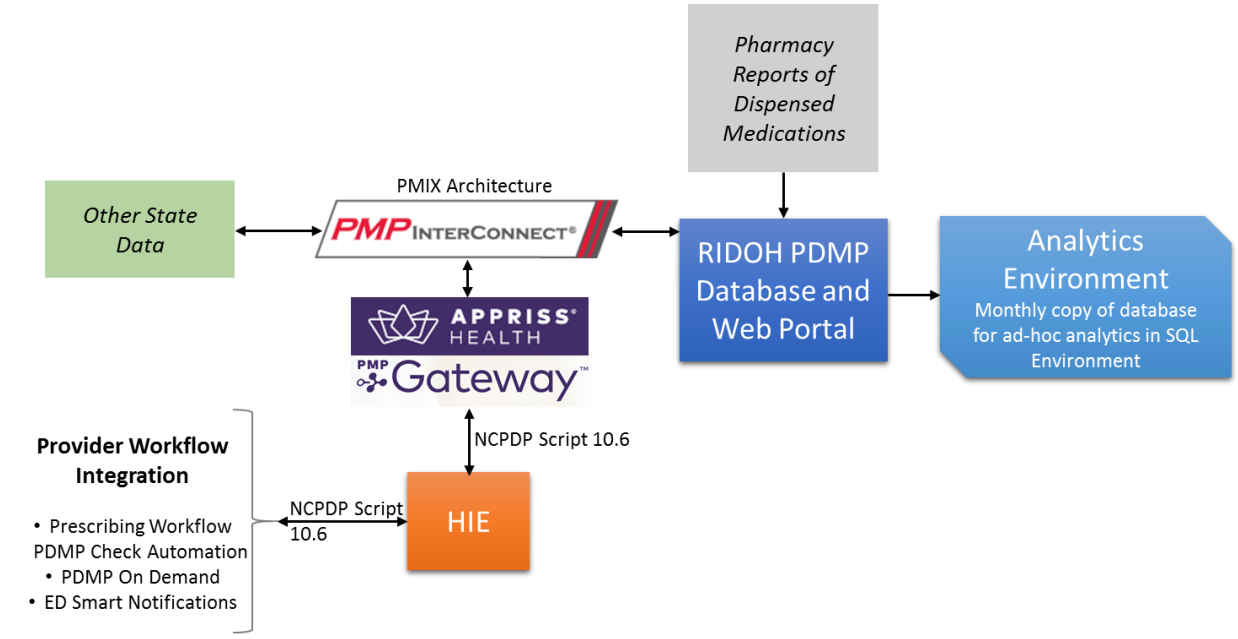

Figure 11: PDMP data flows

PDMP Enhancements

Rhode Island has received additional support through the CDC State Opioid Response grant, Bureau of Justice Assistance grant, and CMS SUPPORT Act funding to hire additional staff, and build out technology and analytics capabilities within the PDMP. This work includes adding program and evaluation staff, modifying the PDMP to become a CMS-qualified PDMP, investing in the state's HIE to improve EHR integration and access to data within prescriber workflows, and enhancing analytic capabilities by connecting the PDMP to the EOHHS Data Ecosystem.

E-Referrals

The Center for Perinatal and Early Childhood Health is piloting the development of a closed-loop referral platform to facilitate data exchange between early childhood providers, called RISES. This grant-funded project is building the system on the Salesforce platform and is designed to be compliant with the Health Insurance Portability and Accountability Act (HIPAA) and the Family Educational Rights and Privacy Act[11] (FERPA) by integrating customizable security and information sharing based on data-sharing restrictions. Where allowed, the system is designed to provide feedback to the referring provider.

[11] https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html

The initial pilot connects a Pre-K program, Community Action Partnership (CAP) agency, dental provider, and school in the Cranston area. Additional geographic areas and providers will be added over time. The system is currently not able to support EHR integration due to the cost of the interfaces.

The program provides governance over the project, working closely with partners at RIDE, DCYF, and the participating organizations. Funding is currently provided by a grant from the Kellogg Foundation. This program is also part of the EOHHS-led interagency workgroup on the statewide E-referral discovery project.

Infectious Disease Reporting and Syndromic Surveillance

The Infectious Disease Reporting and Syndromic Surveillance programs utilize three main data systems: Realtime Outbreak Detection Surveillance System (RODS), National Electronic Disease Surveillance System (NEDSS) and Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). RIDOH has made significant progress in onboarding labs across the state to the electronic lab reporting system, with over 70% of the state's hospitals and labs currently submitting data electronically. Lab reporting interfaces also feed into additional data systems that support HIV and TB prevention efforts.

RIDOH is exploring ways to leverage a connection to CurrentCare to better streamline reporting and improve data accuracy, completeness, and timeliness.

The program is currently exploring potential opportunities to support electronic case reporting (ECR). Preliminary work includes monitoring the national landscape of ECR efforts, including the development of the Digital Bridge ECR framework, and ensuring that RIDOH reporting regulations are aligned with developing national standards.

Vital Records

The Vital Records program collects information about births, deaths, adoptions, and marriages in the state. The birth registry is electronic and receives electronic information from Rhode Island hospitals. Some supplemental information is sometimes required to be submitted manually.

The program is currently in the process of implementing a new electronic death registry system. The system will support Medicaid providers' ability to meet MU and is supported by 90/10 HITECH funding.

Cancer registry

The cancer registry and prevention programs maintain multiple data systems to support their work. The state's cancer registry collects data from the state's hospitals through a contract with the Hospital Association of Rhode Island. Some programs support Medicaid providers efforts to achieve MU and are supported by 90/10 HITECH funding.

Summary of Other Data Systems and Registries

RIDOH operates over 100 registries, Access databases, applications, and other data systems related to various program activities. These systems range from very specific HIV/AIDS reporting systems (in addition to NEDSS) to a hospital discharge data set to an emergency events notification system. Given the number and range of program specific databases and HIT efforts underway at RIDOH, it would be difficult to assess each one in depth. Understanding the wide range of data needs and HIT systems to support those needs is critical to also understanding the current state of HIT in RI.

Key Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH) Projects

BHDDH supports the health and well-being of Rhode Islanders across three main divisions: behavioral healthcare, developmental disabilities, and the state hospital system, Eleanor Slater Hospital. Each division has specific IT systems and registries to support their efforts, and an agency-wide data and research team works across programs.

Behavioral Health On-Line Database

The Behavioral Health On-Line Database (BHOLD) collects admission, discharge, and service data from licensed behavioral health providers through a Web-based platform. Providers can also submit batch data files for uploading to the system. In addition, community-based services for individuals with Serious and Persistent Mental Illness (SPMI) such as Integrated Health Homes and Assertive Community Treatment programs, and Opioid Treatment Program Health Home services, submit information through BHOLD to support performance-based payment programs with Medicaid. BHOLD provides Medicaid a monthly cohort of clients with SPMI to inform specialized capitation payments for that population.

Providers can access data in BHOLD to ensure clients are not already enrolled in another program. BHDDH uses BHOLD for a variety of reporting, analytic, and program oversight purposes. These include: gathering data as the State Mental Health Agency and the Single State Agency for Substance Abuse Services to fulfill required reporting to the Substance Abuse and Mental Health Services Administration (SAMHSA), evaluating the usage and effectiveness of services and treatments, and supporting payment and quality oversight requirements of licensed providers.

BHOLD contains data covered by both HIPAA and 42 CFR Part 2, as well as Rhode Island's state mental health law[12]. BHDDH strictly controls the use and re-release of the data to ensure compliance with those laws. There are ongoing discussions with EOHHS and RIDOH around data-sharing opportunities and information needs. BHDDH occasionally shares deidentified or identified BHOLD data for approved research purposes in line with allowable HIPAA research disclosures.

Consumer Engagement

Through a five-year SAMHSA grant, Promoting the Integration of Primary and Behavioral Healthcare (PIPBHC), BHDDH is supporting participating providers with acquiring consumer engagement software. The state is pursuing a cloud-based, HIPAA-compliant, measurement-based care (MBC) tracking platform that will allow clients to complete assessments and screenings–and for those data to be easily available for providers. In particular, the state is seeking a platform that will support behavioral health providers in making treatment more effective by increasing clients' participation, helping support team-based care, and making it possible for public or private agencies to increase coordination.

[12] http://webserver.rilin.state.ri.us/Statutes/TITLE40.1/40.1-5/INDEX.HTM

Eleanor Slater Hospital

Eleanor Slater Hospital is a state-operated hospital providing long-term acute and post-acute inpatient care to patients with complex medical and psychiatric needs and is currently evaluating the feasibility of acquiring a comprehensive EHR to replace outdated tracking systems and paper records.

An EHR is needed to address administrative burden around documenting care and managing transitions of care, and would reduce subsequent impacts on providing safe, timely, and effective treatment. It would additionally support meeting Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and CMS reporting expectations. Eleanor Slater Hospital is seeking an EHR that provides clinical decision support, mobile EHR access away from fixed workstations, and analytic capabilities for quality measurement and quality improvement.

As a State Hospital, obtaining funding for an EHR presents significant challenges in identifying potential funding sources for the large investment required for conversion to a comprehensive EHR.

Other Key Initiatives

BHDDH is involved in several other key HIT and HIE initiatives, including the following:

- Working with RIQI to develop a public-facing bed registry for open hospital psychiatric beds. This may include bed-based substance use treatment facility services availability in the future.
- The Division of Developmental Disabilities (DDD) is implementing a new case management and incident reporting system, Therap. This system will replace legacy systems and allow for better data collection and improved user experience. Under the principles of re-use, it is also being implemented for incident reporting for licensed Behavioral Health Organizations, centralizing incident reporting for BHDDH.
- The Outcome Evaluation Instrument is a long-standing outcomes measure for SPMI individuals receiving Medicaid services that fulfills a multitude of federal reporting requirements. BHDDH is seeking an electronic collection and submission method for this instrument to replace current paper administration and submission.
- BHDDH maintains a database for Medicaid-certified nursing facilities of Preadmission Screening and Resident Review (PASSR) assessments. These assessments are an intensive screening process for individuals being placed in nursing facilities meant to prevent inappropriate placement for those with mental illness, developmental disabilities, or related conditions, as they should be considered for all possible community services before an institutional placement is made.
- BHDDH is supporting efforts to understand the barriers that behavioral health providers face in adopting HIT/HIE and identifying solutions. These efforts include working with RIQI to support the use of CurrentCare and helping providers better leverage available HIT opportunities.

Department of Human Services

The Rhode Island DHS operates many programs that support health and wellbeing, including rehabilitations services, healthy aging, supplemental nutrition assistance, childcare services, and energy assistance programs. Like RIDOH, DHS programs use multiple data systems and IT services.

Recent work has included a focus on early childhood intervention efforts, and DHS completed an inventory of early childhood-related data systems that can be leveraged for comprehensive improvement efforts. DHS works closely with partners across EOHHS and related agencies to accomplish its work, including participation in several IT initiatives previously described.

External HIT Investments

RIQI and CurrentCare

RIQI serves as the State's RHIO, also referred to as the State Designated Entity (SDE) for HIE. In this capacity RIQI operates the statewide HIE, CurrentCare.

Moreover, RIQI provides additional HIT/HIE services, as well as practice transformation support and technical assistance programs. As noted above, development of CurrentCare began in 2004 through the support of an AHRQ grant. In 2008, the state selected RIQI to be the RHIO and CurrentCare operations began thereafter. RIQI received additional investments through the State HIE Cooperative Agreement, the Beacon Community Cooperative Agreement, and state-led HITECH initiatives.

The HIE Act of 2008 defines the role of the statewide HIE and establishes important patient privacy and security protections to ensure patient health information is secure and shared appropriately. The law also requires consumers to opt in to CurrentCare in order for the HIE to collect healthcare information. This policy has limited the growth of information within the exchange.

RIQI is governed by a fourteen-member board of directors that represents a broad array of healthcare leaders including many CEOs from hospitals, health plans, private providers, consumer groups, long-term and post-acute care, and, as ex-officio members, state agencies. In addition to formal board committees that advise on operations, finance, and compliance, RIQI has a number of community-based committees that provide valuable stakeholder segment input on activities.

CurrentCare is funded through a voluntary per-member, per-month contribution from health plans, self-insured employers, and Medicaid. Some infrastructure investments and technology upgrades are also funded through HITECH 90/10 investments.

Operating as a centralized HIE, CurrentCare offers a longitudinal clinical viewer; bi-directional interfaces into provider EHRs; other data feeds; and an analytics environment for reporting, public health purposes, and other approved research. CurrentCare receives the following:

- Encounter documents, such as those listed below:
    - Discharge and/or clinical Continuity of Care (CoC) documents
    - Emergency Medical Service (EMS) "run reports"
    - Admit, Discharge, Transfer (ADT) feeds from most Rhode Island hospitals
- Test results, such as those listed below:
    - Labs
    - Imaging
    - Electrocardiogram (EKG) results

CurrentCare for Me[13] is a patient-facing portal that gives consumers access to their health information via a portal or their mobile device. CurrentCare for Me provides a view to the CurrentCare record and

[13] https://cc4me.currentcareri.com/personal/index.html#/home

includes functionality for consumers to designate proxy relationships/designees. Through a customizable setup, designees can receive an alert if a patient is hospitalized, either through email or text. Consumers can select whether designees receive access to the full CurrentCare record or just the hospital event notification. Over 11,000 consumers have signed up for CurrentCare for Me accounts.

As of July 2019, CurrentCare has 526,000 enrolled patients, 523 accessible data sources, and 109.3 million transactions within its database.[14]

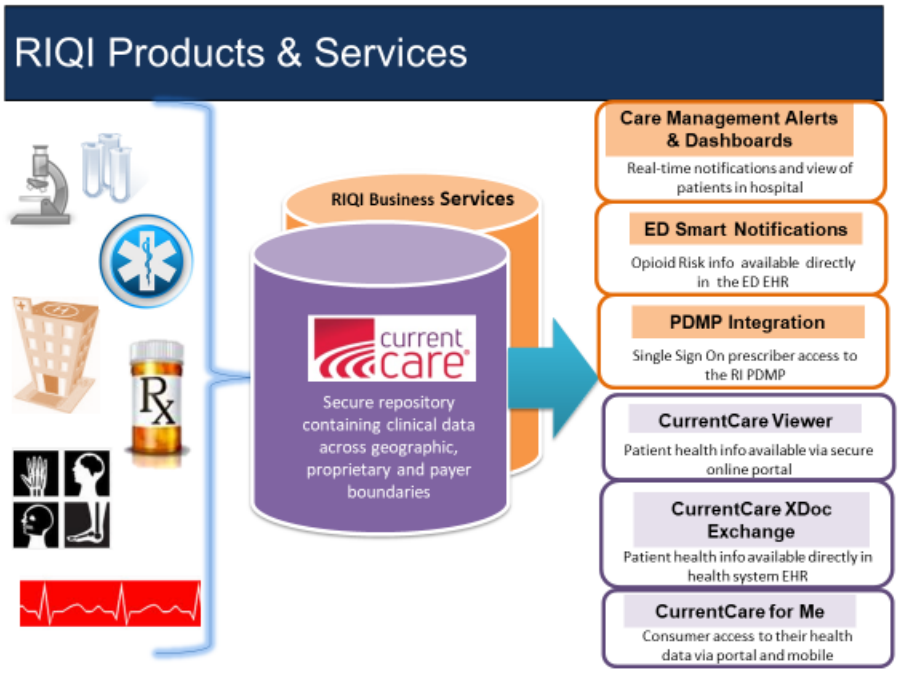

Figure 12: RIQI Products & Services

Other RIQI Projects and Services

Building upon the interface connections with Rhode Island's hospitals and leveraging HIPAA business associate agreements, RIQI developed a statewide ADT notifications service, the Care Management Alerts & Dashboards (CMAD). Through a customizable dashboard, customized alerts, and direct EHR integrations, these alerts provide valuable information about ED and hospital events to primary care providers, behavioral health agencies, AEs, and other key stakeholders involved in coordinating care. CMAD includes information about risk scoring, past visit history, and other panel management features. RIQI developed the service through foundation grant funds, and it is now provided to health care entities on a fee-for-service basis. Medicaid is in the process of implementing this service for their AEs to ensure notification of Medicaid beneficiaries as they are admitted to or discharged from the ED or hospital inpatient unit.

[14] http://www.currentcareri.org/Portals/0/Uploads/Documents/CurrentCare%20Information%20Sources.pdf

RIQI has also developed and implemented an ED smart notification service that alerts ED providers about patients that may be at risk for opioid overdose, and/or are heavy ED users. Upon receiving a notification that a patient is at the ED, RIQI uses data from the PDMP, previous ADT data, and CurrentCare data (if available) and sends the alert directly back into the ED tracker board within the hospital EHR system to allow the providers to access the information within their workflow. This system has been deployed in one hospital ED to date. Funding for this effort was initially made available through 90/10 HITECH funds.

An analytics environment is available that supports research use cases and other approved uses. RIQI received a National Institutes of Health (NIH) grant to support the development of additional capacity, including data modeling for additional services. Users include academic partners and health plans to support quality measurement, population health management, and research purposes.

Through support from SIM, RIQI has also developed a consumer engagement platform, Know My Health, which includes both consumer-facing and provider-facing views. Know My Health supports the inclusion and exchange of the following:

- Advance directives
- Medical Orders for Life-Sustaining Treatment (MOLST)
- Screening, Brief Intervention, and Referral to Treatment (SBIRT) assessments
- SDOH assessments
- Patient questionnaires
- Other consumer-facing documents

Through a web-enabled tool, patients are able to complete assessments and upload documents to CurrentCare, making these items accessible to their healthcare providers. The platform is customizable, allowing for the creation of new assessment instruments and future use cases. The platform is also creating a registry of searchable and sharable MOLST documents.

RIQI has developed an integration to the state's PDMP database that allows organizations to access PDMP information from within their EHR through a single sign-on.

Provider directory

Using SIM funds, the State contracted with RIQI to build a Statewide Common Provider Directory, with an overall investment of $1.64 million. The directory consisted of detailed provider demographics as well as detailed organization hierarchy. This organization hierarchy is unique and essential to being able to maintain both provider demographic and contact information, and their relationships to practices, hospitals, ACOs, and health plans. The intent of this project was to achieve the following:

- Allow for the mastering and maintenance of provider information and organizational relationships to only occur once in the state in a central location;
- Provide a web-based tool that allows a team of staff to maintain the file consumption and data survivorship rules, error-check-flagged inconsistencies or mapping questions, and manually update provider data or enter new providers;
- Develop and institutionalize the appropriate data mastering and maintenance system to allow for useful data export via a flat file to ensure readiness for a June 2016 launch;
- Provide iterative data exports that allow for hospitals, payers, and state agencies to incorporate the centrally-mastered provider data within their own databases; and
- Increase data availability and transparency within a provider portal and a consumer portal.

The state, led by RIQI, built the software, but issues with sustainability (especially around the cost of continually refreshing the data) and ensuring the appropriate business cases led the state and RIQI to pause the project at the end of 2017. The infrastructure exists and is currently being used for research purposes. If funds are identified to update and maintain the data, operations could resume.

External Investments in HIT

Rhode Island healthcare entities have made significant investments in HIT. All of Rhode Island's hospitals—mostly large physician practices, many smaller practices and specialty groups, all FQHCs, many behavioral health agencies, and various allied health and other provider types—have all adopted EHRs. Organizations have also invested in a variety of other HIT infrastructures, including data warehouses and advanced analytic capabilities, population health and care management tools, and support for quality reporting and care gap management. Patient-facing HIT tools are less common, though several stakeholders have shared that consumer-facing digital health is a growing strategic priority as they seek to improve access and convenience of healthcare options. Larger organizations and health systems tend to have more advanced HIT capabilities, as do organizations that are active in value-based care contracts.

There was growing participation among health systems in national and vendor-based HIE initiatives, such as Epic's CareEverywhere, Carequality, eHealth Exchange, and Commonwell Health Alliance. Organizations reported mixed results with this growing source of records; some saw the growth of these initiatives as extremely valuable, while others shared that the massive potential influx of outside records created significant challenges around data governance and usability.

Health plans active in Rhode Island also report significant investments in HIT. In addition to claims processing and medical management systems, health plans are investing in a variety of risk stratification modules, care management programs, and other tools to support alternative payment models and population health efforts. A variety of exchange methods with providers have been reported, including some direct integrations into provider EHRs, provider-accessible portals, flat file exchanges, and e-mailed reports. Plans also exchange data with several different State programs, including sharing encounter data with Medicaid, submitting claims information to HealthFacts RI, and fulfilling a variety of other reporting requirements related to quality, cost, and access.

FQHCs and large physician practices are overwhelmingly involved in value-based care arrangements that incentivize care coordination and reduce total cost of care. Hospitals and health systems report mixed experiences with transition to value-based care payment models, with some having moved significant amounts of their business to such models, and others with a high proportion of traditional FFS contracts. Reporting requirements of health plans vary significantly, even within a single line of business such as the Medicaid AE program, and providers share that they have made significant investments in quality reporting, EHR customization to support report-writing needs, and data analytics and aggregation capacity. At the same time, extensive quality reporting and unaligned requirements is noted as a significant burden on those organizations, requiring increasing amounts of staff time and IT investments to keep up with requirements.

The AEs reported a range of investments in HIT, with several still in a start-up phase of working with their provider networks to gather and report necessary quality measures, and others investing in centralized data aggregators and population health tools. While all AEs are exchanging data with health plans, they report mixed experiences in receiving useful information from the plans. They shared a number of challenges, including receiving multiple risk stratification lists, different data formats and data elements,

fully aggregated or patient-level data without practice or organization affiliation, and information about attributed patients that were unknown to the AE.

Current Statewide HIT Governance and Coordinating Structures

Rhode Island has several governance structures over HIT/HIE in place (see Figure 13). Some are internal to state government initiatives, while others are public-private groups. Because of Rhode Island's size, coordination between groups is typically accomplished informally, either through members that serve on multiple committees or through linkages of key staff. Because the state's HIT regulatory oversight is located at RIDOH, that agency's Director plays an important role in the state's HIT governance.

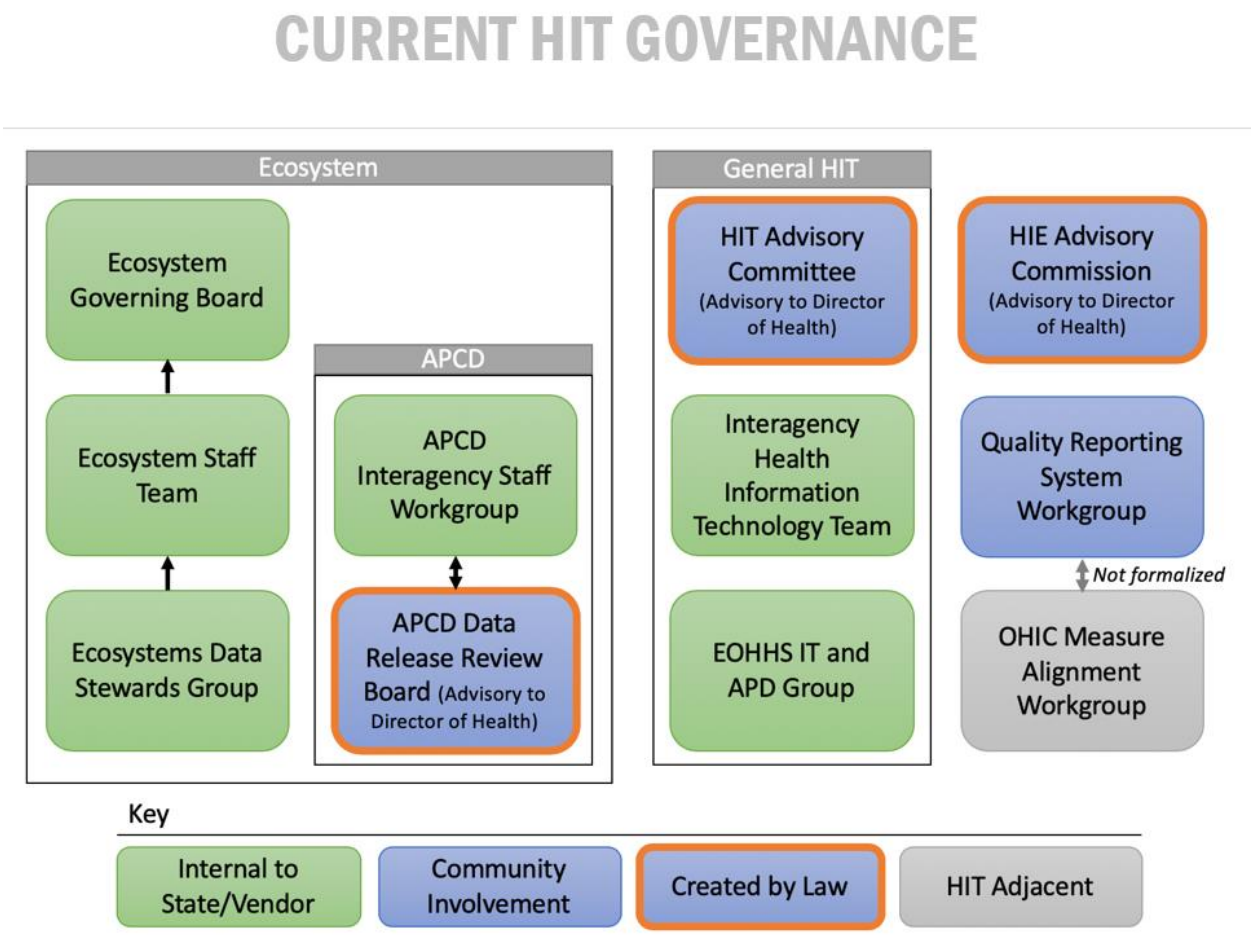

Figure 13: State HIT Governance Structures (June 2018)

Statewide HIT governance includes the following key groups:

- HIT Advisory Committee: this group provides advice to the Director of Health related to the Health Information Technology and Infrastructure Development Fund that support statewide HIT efforts.
- HIE Advisory Commission: this group provides advice to the Director of Health related to the privacy and security of CurrentCare, research requests for CurrentCare data, and other aspects related to the state-designated entity.

- Initiative-specific workgroups: these ad-hoc groups provide oversight and guidance to specific projects and initiatives. There is a QRS workgroup currently active.

Federal and National HIT Landscape

HITECH and Opportunities to Support HIE Through MMIS

The HITECH Act provided extensive opportunities for states to support the adoption of EHRs and development of health information exchange efforts, including HIEs. As the program comes closer to its sunset date of September 30, 2021, CMS and ONC have signaled a desire to continue supporting efforts, where allowable, through MMIS funding mechanisms. A series of State Medicaid Director letters (SMDs) in 2018 and 2019 have provided sub-regulatory guidance to allow for the use of MMIS funding to support care coordination, provider directories, IT systems to address the opioid epidemic, and other reusable HIT and HIE technologies. CMS has indicated that HIE efforts funded through MMIS APDs will require outcomes-based certification.

Several states have begun transitioning certain HITECH-initiated projects to MMIS funding, including Michigan, Oregon, and Maryland.

21st Century Cures Act[15]

The 21st Century Cures Act, passed by Congress in November 2016, contains numerous HIT provisions. These include the following:

- Developing or endorsing a trusted exchange framework and common agreement to support health information exchange
- Reducing the regulatory and administrative burden related to the use of EHRs
- Requiring the Government Accountability Office (GAO) to study patient matching and patient access issues
- Mandating EHR certification for pediatric EHRs
- Developing an EHR reporting program to collect information on usability, security, and interoperability
- Defining information blocking and requiring HHS to develop a rule of allowable exceptions to this definition
- Replacing the HIT Policy Committee and HIT Standards Committee with a new HIT Advisory Committee to recommend polices to the National Coordinator for HIT

Trusted Exchange Framework

ONC released the first draft of the Trusted Exchange Framework and Common Agreement (TEFCA) in January 2018 and a second draft in April 2019. TEFCA aims to create a "single on-ramp" for health information exchange by aligning participation requirements and technical standards across qualified networks.

ONC designated the Sequoia Project as the national Recognized Coordinating Entity (RCE), which will be responsible for developing and maintaining the common agreement. The common agreement will set the minimum technical and legal requirements for participating HIE networks. The RCE will also work

[15] https://www.congress.gov/114/bills/hr34/BILLS-114hr34enr.pdf

collaboratively with ONC to oversee Qualified Health Information Exchange Networks (QHINs), which will form the backbone of the trusted exchange framework.

Information Blocking Rule

Section 4004 of the 21st Century Cures Act defines information blocking as practices by a health care provider, HIT developer, health information exchange, or health information network that—except as required by law or allowed by HHS rule—is likely to interfere with, prevent, or discourage access, exchange, or use of electronic health information.[16]

HHS released the Information Blocking rule, which defines allowable exceptions, in March 2019. These proposed exceptions include protecting patient safety, promoting the privacy or security of electronic health information, allowing for the recovery of reasonably incurred costs, excusing an actor from infeasible requests, permitting the licensing of interoperability elements on reasonable and non-discriminatory terms, and bolstering maintenance or improvement efforts.

SUPPORT Act[17]

In October 2018, Congress passed the SUPPORT Act to support efforts to address the opioid epidemic. This law is particularly useful for supporting Medicaid agencies in innovative treatment programs, prevention, and recovery to help people with substance use disorders (SUD).

The key HIT component of the SUPPORT Act pertains to PDMPs. Beginning October 1, 2021, states must have a qualified PDMP and must require that certain Medicaid providers check information about certain Medicaid beneficiaries' prescription drug history in the qualified PDMP before prescribing controlled substances to the beneficiary. Through this Act, CMS provides 100 percent federal Medicaid matching funds for certain expenditures related to qualified PDMPs described in section 1944(f)[18] of the Act. The 100 percent federal match under section 1944(f) of the Act is available only through September 30, 2020.

A qualified PDMP, according to the statute, must satisfy each of the following criteria:

- The program facilitates access by a covered provider to, at a minimum, the following information with respect to a covered individual, in as close to real-time as possible:
    - Information regarding the prescription drug history of a covered individual with respect to controlled substances.
    - The number and type of controlled substances prescribed to and filled for the covered individual during at least the most recent 12-month period.
    - The name, location, and contact information (or other identifying number selected by the State, such as a national provider identifier issued by the National Plan and Provider Enumeration System of CMS) of each covered provider who prescribed a controlled substance to the covered individual during at least the most recent 12-month period.

[16] https://www.healthit.gov/topic/information-blocking
[17] https://www.congress.gov/115/plaws/publ271/PLAW-115publ271.pdf
[18] https://www.congress.gov/115/bills/hr6/BILLS-115hr6eah.pdf

The program facilitates the integration of information into the workflow of a covered provider, which may include the electronic system the covered provider uses to prescribe controlled substances.

States will also be required to submit annual reports to HHS showing percentage of covered providers who queried the PDMP before prescribing, aggregate trends with respect to prescribing controlled substances, whether the State requires pharmacies to query the PDMP before filling a controlled substance prescription, and any data or privacy breaches.

The SUPPORT Act also requires a state to have data-sharing agreements with contiguous states. The SMA may facilitate reasonable and limited access to medical and pharmacy directors of managed care plans and pharmacy benefit managers. All applicable State and Federal security and privacy laws shall apply to the directors or designees of such directors of any state Medicaid program or entity accessing a qualified prescription drug monitoring program under this section.

CMS Interoperability Rule[19]

The CMS Interoperability and Patient Access Proposed Rule, released in March 2019, expands access requirements to health information held by providers and certain health plans.[20] Hospitals would be required to send ADT notifications to other providers involved in the patient's care. Health plans would be required to provide claims, encounter, and clinical data (if managed by the plan) to beneficiaries. In addition, health plans would be required to provide access to Application Programming Interfaces (APIs) that would allow patients to use third-party applications to manage their data.

National Interoperability Initiatives and Vendor-Led Efforts

eHealth Exchange

The eHealth Exchange, overseen by the Sequoia Project, is a group of federal agencies (Department of Veterans Affairs, Department of Defense (DoD), Social Security Administration(SSA)), healthcare entities, and HIEs that leverage a comprehensive, multi-party trust agreement (the Data Use and Reciprocal Support Agreement (DURSA)) to support exchange efforts. eHealth Exchange supports document-based query exchange.

Carequality

Carequality is a multi-stakeholder collaborative that formed to help providers share clinical data across multiple networks and HIT systems. Using a consensus-based, use case-driven process, Carequality has developed a common interoperability framework, including legal and technical specifications, to enable connectivity across participating networks. Many of the largest EHR vendors are members of Carequality. EHR vendors must become "implementers" of Carequality; their users may then elect to participate.

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[19] https://www.federalregister.gov/documents/2019/03/04/2019-02200/medicare-and-medicaid-programs-patient-protection-and-affordable-care-act-interoperability-and

[20] https://www.federalregister.gov/documents/2019/03/04/2019-02200/medicare-and-medicaid-programs-patient-protection-and-affordable-care-act-interoperability-and

Carequality supports query-based document exchange and is in the process of implementing additional use cases. In 2019, the CommonWell Health Alliance became a Carequality Implementer.

CommonWell Health Alliance

CommonWell Health Alliance is a multi-vendor association that provides core services and infrastructure to enable the exchange of patient clinical data. These include a master patient index for patient identity and matching, centralized record locator service, and access and consent management solutions. CommonWell members include large EHR vendors and other HIT solutions, such as personal health records. Additional use cases and functionality are currently in development.

Vendor-specific HIE efforts

Many vendors have developed proprietary HIE solutions that connect users of the same EHR product. Epic's Care Everywhere, for instance, is a tool within the Epic electronic medical record that allows Epic users to securely share patient records with other health care providers that use Epic. Rhode Island organizations that have adopted Epic are increasingly incorporating information directly into a single medical record through an interoperability feature called "Happy Together."

Appendix 1: Document Registry

Table 1 provides a list of documents and website link references.

Table 1: Documents

Category	Document or Website Link Reference
Medicaid	Current HITECH IAPD-U 2018-2019
Medicaid	Draft HITECH IAPD-U 2020-2021
Medicaid	HITECH IAPD-UIAPD 2017 & FFY 2018
Medicaid	Draft PDMP APD- support Act
Medicaid	SMHP
Medicaid	SUD waiver HIT plan
Medicaid	MITA SSA
Medicaid	Accountable Entities background materials: http://www.eohhs.ri.gov/Initiatives/AccountableEntities.aspx
Medicaid	RI State Healthcare Innovation Plan (SHIP): http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/RIStateHealthcareInnovationPlan.pdf
APCD	APCD: http://www.health.ri.gov/data/healthfactsri/
APCD	APCD Authorizing legislation Health Care Quality program statute: http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-17.17/23-17.17-9.HTM http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-17.17/23-17.17-10.HTM http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-17.17/23-17.17-11.HTM
APCD	APCD regulations https://rules.sos.ri.gov/regulations/part/216-10-10-5
APCD	APCD Data Release Review Board (agendas and minutes): https://opengov.sos.ri.gov/OpenMeetingsPublic/OpenMeetingDashboard?subtopmenuId=201&EntityID=76&MeetingID=977628
SIM	SIM Operational Plan/report May 2017 version: http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/SIM_OpsPlan_May2017.pdf
SIM	SIM Operational Plan/report April 2018 version: http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/RISIMOperationalPlanInitialAY4Submission4.26.2018.pdf
SIM	Health Assessment Report (Pop health plan): http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/SIMHealthAssessmentReport7-28-2017.pdf
SIM	Sustainability Part I: http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/Rhode%20Island%20SIM%20-%20Sustainability%20Part%20I%2012.03.2018%20FNL.pdf
SIM	Sustainability Part II: http://www.eohhs.ri.gov/Portals/0/Uploads/Documents/SIM/RISIMSustainabilityPlanPartIIUpdated2202019.pdf
RIQI/HIE	CurrentCare Guidebook: http://www.currentcareri.org/Portals/0/Uploads/Documents/CurrentCare%20Information%20Sources.pdf
RIQI/HIE	Dashboards Informational Materials: https://www.riqi.org/how-we-help/care-management
HIT/HIE Laws	HIE Act of 2008: http://webserver.rilin.state.ri.us/Statutes/TITLE5/5-37.7/INDEX.HTM
HIT/HIE Laws	HIE Regulations: https://rules.sos.ri.gov/regulations/part/216-10-10-6
HIT/HIE Laws	HIE Advisory Commission agendas, minutes: https://opengov.sos.ri.gov/OpenMeetingsPublic/OpenMeetingDashboard?subtopmenuId=201&EntityID=1387&MeetingID=978383
HIT/HIE Laws	Healthcare Information Technology and Infrastructure Development Fund law: http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-77/INDEX.HTM
HIT/HIE Laws	HIT Advisory Committee agendas, minutes: https://opengov.sos.ri.gov/OpenMeetingsPublic/OpenMeetingDashboard?subtopmenuId=201&EntityID=1404&MeetingID=831771
Other Laws	Confidentiality of Health Care Communications and Information Act: http://webserver.rilin.state.ri.us/Statutes/TITLE5/5-37.3/INDEX.HTM
Other Laws	Mental Health Law: http://webserver.rilin.state.ri.us/Statutes/TITLE40.1/40.1-5/INDEX.HTM
Other Laws	HIV Law: http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-6.3/INDEX.HTM
RIDOH	2015 Health Inventory: http://health.ri.gov/data/healthinventory/

Category	Document or Website Link Reference
RIDOH Laws	Uniform Controlled Substances Act: http://webserver.rilin.state.ri.us/Statutes/TITLE21/21-28/INDEX.HTM
RIDOH Laws	"electronic data transmission" d(2) and e-prescribing requirements d(3) http://webserver.rilin.state.ri.us/Statutes/TITLE21/21-28/21-28-3.18.HTM
RIDOH Laws	PDMP law until 2023: http://webserver.rilin.state.ri.us/Statutes/TITLE21/21-28/21-28-3.32.HTM
RIDOH Laws	PDMP law after 2023: http://webserver.rilin.state.ri.us/Statutes/TITLE21/21-28/21-28-3.32-1.HTM
RIDOH Laws	Voluntary non-opiate directive law: http://webserver.rilin.state.ri.us/Statutes/TITLE21/21-28/21-28-3.33.HTM
RIDOH	Overdose Task Force: https://preventoverdoseri.org/
RIDOH	KIDSNET: http://www.health.ri.gov/programs/detail.php?pgm_id=19

Appendix 2: Stakeholder Interviews

Table 2 provides a list of Departmental Leadership Interviews by stakeholder.

Table 2: Stakeholder List

Organization/ Program	Stakeholder
Departmental Leadership Interviews:	
OHIC	Commissioner Marie Ganim Cory King Marea Tumber
RIDOH	Sandra Powell
Medicaid	Debbie Morales Melody Lawrence Kristin Sousa Libby Bunzli
HealthSource RI	Former Director Zach Shermann Betsy Tavares Director Lindsay Lang
BHDDH	Corinna Roy
DHS	Yvette Mendez Caitlin Molina
Agency-Level Program and Technical Staff:	
BHDDH Systems	Brendan Mahoney Jamieson Goulet Olivia King Diane Cavanaugh
eReferral System	Marti Rosenberg
Department of Corrections	Jennifer Clarke, MD Pauline Marcussen
EOHHS All Payer Claims Database	Tanya Bernstein Brian Boates
EOHHS State Data Ecosystem	Kim Paull Jessie Hole Alyssa Ribeiro
EOHHS LTSS	Brian Gosselin
EOHHS Medicaid Analytics	Bill McQuade
EOHHS Medicaid Systems	Hector Rivera Nicole Nelson Rob Tingle Stan Prokop
EOHHS Promoting Interoperability Program	Stan Prokop Robin Smith
RIDOH Cancer Registry	Eric Lamy Junhie Oh
RIDOH Diabetes, Heart Disease and Stroke	Megan Fallon Adrian Bishop Randi Belhumeur Carol Votta Meaghan Joyce
RIDOH Chronic Disease Program	Nancy Sutton
RIDOH Agency IT Manager	Bob Childs
RIDOH eReferral system	Blythe Berger Kristin Lehoullier (consultant)

Organization/ Program	Stakeholder
RIDOH Center for Vital Records	Roseann Giorgianni
RIDOH Pediatric Medical Director	Ailis Clyne, MD
RIDOH Center for Health Promotion	James Rajotte
RIDOH Center for Health Data Analysis	Samara Viner-Brown Leanne Lasher
RIDOH Infectious Disease	Bridget Teevan
RIDOH Kidsnet	Ellen Amore Kim Salisbury-Keith Tricia Washburn
RIDOH PDMP	James McDonald, MD Peter Ragosta Victoria Ayers Meghan McCormick
EOHHS Ryan White Program	Paul Loberti Andre Parker Nestor Dellagiovanna
RIDOH HIV, Hepatitis, STDs & Tuberculosis	Thomas Bertrand Teddy Marak
RIDOH Oral Health	Samuel Zwetchkenbaum, DDS, MPH Sadie DeCourcy
RIDOH Health Equity	Chris Ausura
Division of IT (DoIT)	Chirag Patel
Community Partners	
Office of Healthy Aging	Mackenzie Thiessen
RIQI	Neil Sarkar Scott Young Michael Dwyer
Hope Hospice	Diana Franchitto
Healthcentric Advisors	John Keimig Lauren Capizzo Rebekah Gardner, MD Blake Morphis Kathy Calandra Bryan Los
Care Transformation Collaborative RI	Pano Yeracaris, MD Debra Hurwitz Susanne Campbell Candice Brown
Care New England	Phil Kahn James Fanale, MD
Neighborhood Health Plan of Rhode Island	Beth Marootian Greg Velander
Blue Cross & Blue Shield of Rhode Island	Amar Gurivireddygari Matt Collins, MD Gus Manocchia, MD
UnitedHealthcare Community Plan	Marty Haglund Mike Baillie Patrice Cooper
Tufts Health Plan	Domenic Delmonico Joseph Imbimbo Juan Lopera
Rhode Island Primary Care Physicians Corporation	Al Puerini, MD Andrea Galgay

Organization/ Program	Stakeholder
United Way of RI	Angela Bannerman Ankoma Cristina Amedeo
Blackstone Valley Community HealthCare	Jonathan Mudge Ray Lavoie Sandy Pardus
Brown Medicine	David Hemendinger
Coastal Medical	Al Kurose, MD Ed McGookin, MD Mice Chen
Integrated Healthcare Partners	Kimber Barton Michael Lichtenstein Diane Evans
Integra Community Care Network	Melanie Brites Matt Harvey
Thundermist Health Center	David Bourassa Cynthia Skevington Matt Roman Gloria Rose Chris Corin Elizabeth Lynch
Providence Community Health Centers	Jonathan Gates, MD Andrew Saal, MD Raymond Parris
Prospect Health Services Rhode Island	Amanda Cox Garry Bliss Rebecca Broccoli
Yale New Haven	Lisa Edwards
South County Health	Gary Croteau
Lifespan	Cedric J. Priebe III, MD
Brown University School of Medicine	Jack Elias, MD
Hospital Association of Rhode Island	Gina Rocha Lisa Tomasso
Rhode Island Medical Society	Peter Hollmann, MD
LeadingAge RI	Jim Nyberg
Emergency Medicine	Megan Ranney, MD
Delta Dental	Tom Chase
RI Parent Information Network (RIPIN)	Sam Salganik
The Substance Use and Mental Health Leadership Council of RI	Susan Storti
Center for Treatment and Recovery	Wendy Looker
RI Free Clinic	Marie Ghazal
Business Group on Health	Al Charbonneau
Rhode Island Commerce Corporation (RICC)	Melissa Simon

Appendix 3: Acronym List

Table 3 provides a list of acronyms used in this document.

Table 3: Acronym List

Acronym	Definition
ACO	Accountable Care Organization
ADT	Admit, Discharge, Transfer
AE	Accountable Entity
AHRQ	Agency for Healthcare Research and Quality
APCD	all-payer claims database
APD	Advanced Planning Document
BHDDH	Behavioral Healthcare, Development Disabilities, and Hospitals
BHOLD	Behavioral Health On-Line Database
CaST	Cancer Screening and Tracking
CDC	Centers for Disease Control and Prevention
CEHRT	Certified Electronic Health Record Technology
CEMS	Center for Emergency Medical Services
CEPR	Center for Emergency Preparedness and Response
CFR	Code of Federal Regulations
CHADIS	Child Health and Development Interactive System
CHDA	Center for Health Data and Analysis
CHFR	Center for Health Facilities Regulation
CIO	Chief Information Officer
CMAD	Care Management Alerts & Dashboards
CME	Continuing Medical Education
CMS	Centers for Medicare & Medicaid Services
CoC	Continuity of Care
CSR	Controlled Substance Registration
DCYF	Division of Children, Youth & Families
DDI	design, development, and implementation
DoIT	Division of Information Technology
ED	emergency department
eHARS	Enhanced HIV/AIDS Reporting System
EHR	electronic health record
EKG	electrocardiogram
EMS	Emergency Medical Service
ENCORE	Education, Needle Exchange, Counseling, Outreach, and Referral
EOHHS	Executive Office of Health and Human Services
ERISA	Employee Retirement Income Security Act of 1974
ETO	Efforts to Outcomes™
EVVE	Electronic Verification of Vital Events
FERPA	Family Educational Rights and Privacy Act
FFS	fee-for-service
FFY	Federal Fiscal Year
FQHC	Federally Qualified Health Center
GIS	Geographical Information System
HCRI	Healthcare Coalition of Rhode Island
HCUP	Hospital Cost and Utilization Project
HIE	health information exchange
HIPAA	Health Insurance Portability and Accountability Act
HIT	health information technology

Acronym	Definition
HITECH	Health Information Technology for Economic and Clinical Health Act
HSDW	Human Services Data Warehouse
ISW	Interagency Staff Workgroup
IT	information technology
LTC-MAP	Long Term Care Mutual Aid Plan
MAPIR	Medical Assistance Provider Incentive Repository
MBC	measurement-based care
MCO	managed care organizations
MMIS	Medicaid Management Information System
MOLST	Medical Orders for Life-Sustaining Treatment
MOU	memorandum of understanding
NEDSS	National Electronic Disease Surveillance System
OHIC	Office of the Health Insurance Commissioner
OPCRH	Office of Primary Care and Rural Health
OSME	Office of State Medical Examiners
PCMH	patient-centered medical home
PDMP	Prescription Drug Monitoring Program
PHEMS	Public Health Emergency Management Suite
PHINMS	Public Health Information Network Messaging System
PIPBHC	Promoting the Integration of Primary and Behavioral Healthcare
QRS	Quality Reporting System
RFP	request for proposals
RIDE	Rhode Island Department of Education
RIDOA	Rhode Island Department of Administration
RIDOH	Rhode Island Department of Health
RIDOT	Rhode Island Department of Transportation
RIEMA	Rhode Island Emergency Management Agency
RIPIN	Rhode Island Parent Information Network
RIQI	Rhode Island Quality Institute
RISNER	Rhode Island Special Needs Emergency Registry
RIVDRS	Rhode Island Violent Death Reporting System
RIVERS	Rhode Island Vital Events Registration System
RODS	Realtime Outbreak Detection Surveillance System
SAMHSA	Substance Abuse and Mental Health Services Administration
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SDE	State Designated Entity
SDOH	Social Determinants of Health
SIM	State Innovation Model
SSA	Social Security Administration
STD	sexually transmitted disease
STEVE	State and Territorial Exchange of Vital Events
SUPPORT	Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment
TB	tuberculosis
WCSP	Women's Cancer Screening Program
WIC	Women, Infants, and Children