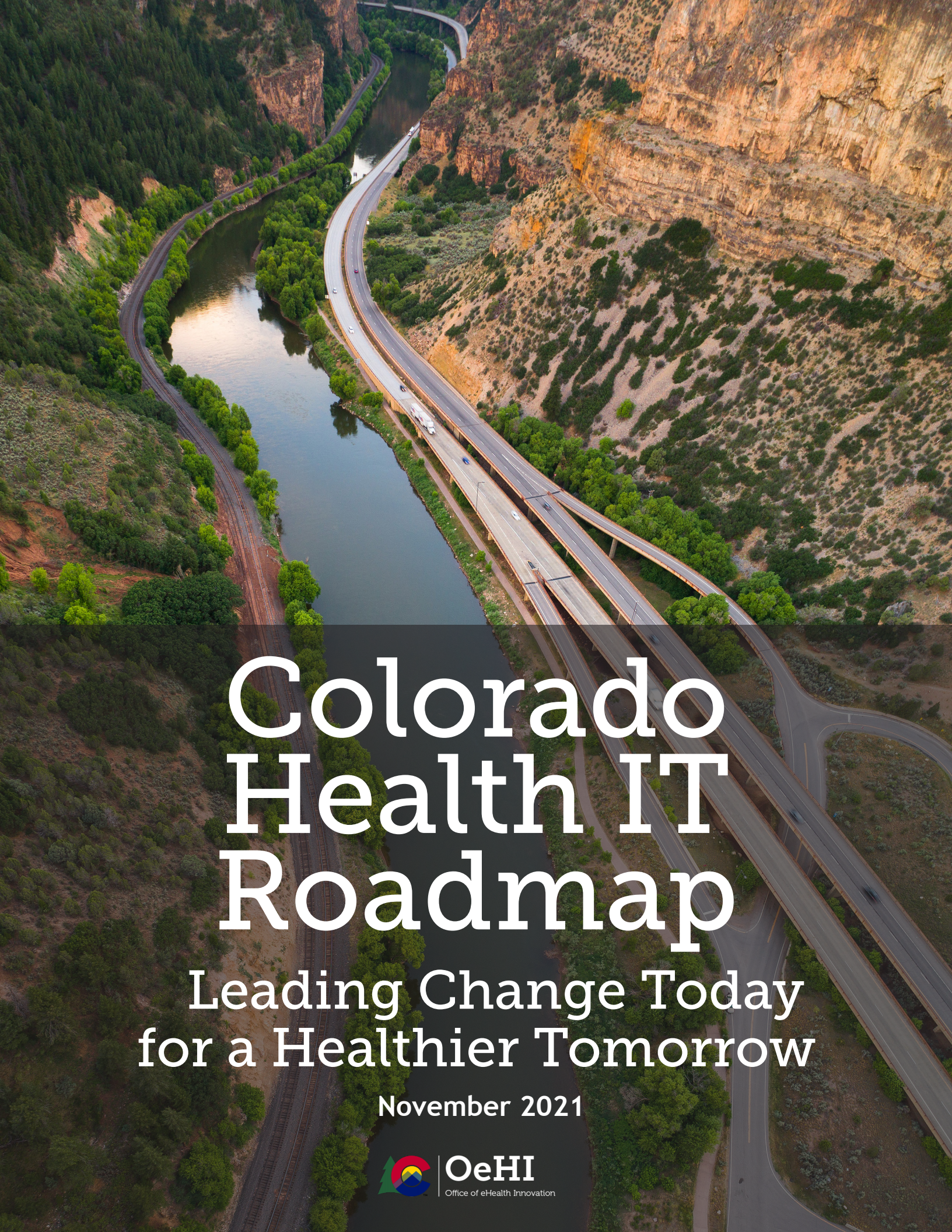

Colorado Health IT Roadmap

Leading Change Today for a Healthier Tomorrow

November 2021

OeHI
Office of eHealth Innovation

Acknowledgements

The 2021 refresh of the Colorado Health IT Roadmap was a collaborative effort led by the Office of eHealth Innovation and the eHealth Commission that involved state agency partners, community organizations, and individual Coloradans. Appendix 1 includes a list of participating organizations and individuals. Special thanks to members of the eHealth Commission Planning Group who provided oversight and guidance throughout the refresh process: Michael Archuleta, Mona Baset, Arthur Davidson, Rachel Dixon, Kevin Stansbury, and KP Yelpaala.

COLORADO
Lt. Gov. Dianne Primavera

November 2021

Fellow Coloradans,

The Polis-Primavera administration is committed to providing equitable, affordable, and accessible high quality care for all Coloradans. As stewards of the state's health information technology (IT) strategy, the Office of eHealth Innovation (OeHI) and the eHealth Commission have been working diligently over the last several months to refresh the Colorado Health IT Roadmap through extensive input from Coloradans and stakeholders from communities across the state.

From the first day in office, our team has engaged state and local leaders, Tribal members, and community members from all across the state to utilize innovation, policy, and technology in pursuit of our bold healthcare reform goals. By partnering with public, private, and non-profit organizations from all corners of the state, we have re-imagined the state's health IT strategy through an equity lens. The goals of this 2021 Health IT Roadmap reflect our commitment to a Colorado for All.

Despite rapid advancements in technology and ambitious policy changes, there are still opportunities to provide more coordinated care. Trusted information, shared infrastructure, policy, and innovation must continue to be harnessed to address these challenges and opportunities. The goals and potential recommendations outlined in the 2021 Colorado Health IT Roadmap accelerate this important work.

The 2021 Health IT Roadmap offers a series of potential recommendations to be considered in pursuit of our commitment to ensuring equitable, affordable, and accessible high-quality health care for all Coloradans. The administration appreciates the work of all those who have invested their time and ideas. Community leadership, collaboration, and innovation play a critical role in the achievement of our health care priorities.
Sincerely,

Dianne Primavera
Lt. Governor of Colorado

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The Opportunity

The 2021 Colorado Health Information Technology Roadmap charts a path for harnessing and expanding the digital tools and services that support the health of all Coloradans.

Known as health information technology (IT), these tools have the potential to significantly expand affordability, access, and equity in health care. Health IT offers an opportunity to advance these goals by creating inclusive and equitable access to information and resources while improving the quality and value of care that individuals receive. Its widespread availability and use can support the coordination of whole-person care, public health response, and population health improvement.

However, development and adoption must occur in a systematic, aligned, and intentional way.

This Roadmap sets a course for aligning efforts across a broad range of stakeholders to achieve three shared goals by 2024.

- Roadmap Goal 1: Coloradans, providers, payers, community partners, state, local, and Tribal agencies share data and have equitable access to needed health and social information.
- Roadmap Goal 2: Coloradans access high-quality in-person, virtual, and remote health services that are coordinated through information and technology systems.
- Roadmap Goal 3: Colorado improves health equity through inclusive and innovative use of trusted health IT and digital health solutions.

Achieving the 2021 Roadmap goals will advance the priorities identified by stakeholders engaged through this process and Governor Jared Polis and Lieutenant Governor Dianne Primavera's vision of affordable, accessible, and high-quality health care and promoting a Colorado for All.

Success ensures that individuals are connected to needed services and supports through coordinated and integrated whole-person care, and that providers and payers can electronically share standard clinical and financial data to support the delivery and payment of value-based, high-quality care. Activities supporting these goals will establish or solidify digital connections among Coloradans, their providers, and state, local, and Tribal agencies so that needed information is available for population health improvement as well as public health emergency response. Colorado will work with Tribes to develop a data sharing strategy that respects data sovereignty and meets the needs of the state, Tribes and, overall, Tribal members. Additionally, equitable, inclusive use of health IT and adequate broadband coverage statewide brings Colorado one step closer to closing the digital divide for all residents.

The 2021 Roadmap identifies common values that guided its development and will be used to prioritize and implement necessary strategies to achieve its three overarching goals. It lays out recommendations for policies, technology services, and funding. Some of these efforts are already underway and require continued support to bring to scale. Others, while new to Colorado, have proven effective in other states and are opportunities for Colorado to explore. These recommendations will be implemented using modern and secure technology that is governed by data sharing agreements, which protect individual privacy and comply with applicable laws and regulations.

The 2021 Roadmap highlights the activities needed to steward these efforts over the next three years and identifies partners responsible for leading and collaborating on these activities, including the Office of eHealth Innovation, the eHealth Commission, state agencies, and community partners.

Lastly, the 2021 Roadmap defines a vision for transforming the state's current infrastructure into a more cohesive and integrated system that enables inclusion and equitable access to data and information that can better serve all Coloradans. Accomplishing the activities set forth within this Roadmap will set Colorado on a path for success in achieving this vision. Figure 1 on page 7 shows an overview of the 2021 Colorado Health IT Roadmap.

Acting on a Shared Vision

The 2021 Roadmap's three goals support a shared vision of affordability, accessibility, and equity for all Coloradans. Creating health equity requires eliminating barriers that limit opportunities to thrive. Creating digital health equity using health IT and digital health solutions requires intentional efforts to build digital inclusion. This means ensuring that all individuals and communities have access to technologies and the support and skills to use them.

Achieving digital inclusion and digital health equity also require intentional strategies and investments that reduce and eliminate historical, institutional, and structural barriers to the access and use of health IT. The 2021 Roadmap calls for these needed strategies and investments.

This document also builds on the successes achieved in Colorado's 2019 Health IT Roadmap[1] as well as the work still in progress, under the direction of the eHealth Commission and the Office of eHealth Innovation, in collaboration with state agencies and

1 Office of eHealth Innovation. Colorado s Health IT Roadmap. 2019. https://oehi.colorado.gov/sites/oehi/files/documents/Colorado%20Health%20IT%2_Roadmap-19_Web%20%281%29.pdf Accessed July 11, 2021.

Figure 1: The 2021 Colorado Health Information Technology Roadmap

ULTIMATE IMPACT FOR ALL COLORADANS

Access • Affordability • Equity

CORE VALUES AND OBJECTIVES FOR THE WORK

Accountability • Alignment • Equity • Innovation • Reusability • Sustainability

STATEWIDE INITIATIVES

Care Coordination • Patient Access to Information • Public Health Response
Virtual and Remote Services • Value-Based Programs • Population Health

GOALS

Access to Information • Digital Health Equity
Coordinated In-Person, Virtual, and Remote Services

STRATEGIES

Policy

- Data sharing and consent agreements
- Standardized processes and data standards
- Access, availability of virtual and remote services
- Clarification of Office of eHealth Innovation and eHealth Commission roles

Services

- Core information services
  - Identity management
  - Provider directory
  - Community resource inventory
  - Consent management
  - Data-sharing management
- Scalable data-sharing platform
- Colorado Innovation Resource Center

Funding

- Provider, community health IT adoption
- Provider participation in health information exchange
- State agency investments
- Non-governmental funding

STEWARDING THE WORK

Community Partners	State and Local Agencies	Office of eHealth Innovation	

Alignment • Community Engagement • Governance • Operationalizing • Monitoring

community partners. These initiatives and those from the 2021 Roadmap, featured in Table 1 (see page 10), advance statewide priorities and leverage existing investments to advance affordability, access, and equity for Coloradans.

The 2021 Roadmap comes at a time of unprecedented opportunity for Colorado to strategically invest in health IT solutions. Colorado can potentially utilize a portion of federal funds for health IT across the state. Potential opportunities include investment in development, expansion, and modernization of Colorado's health IT ecosystem, including public health and behavioral health information systems, and expanded broadband connectivity.

Learning from the Past

The COVID-19 pandemic brought together both the public and private sector to quickly respond to community needs. This unprecedented public health emergency maximized the use of existing health IT infrastructure and policy and inspired collaborations where available and appropriate.

The COVID-19 pandemic highlighted opportunities for enhancements and innovations to better serve residents, providers, state agencies, and community organizations and to strengthen partnership with Tribes. Colorado's broadband infrastructure was stretched to meet the high volume of health care, behavioral health, and social services operating in virtual environments. Some communities, especially in rural and frontier areas, lacked broadband access and affordable health IT infrastructure. Many Coloradans started and continued using virtual options to access health care, services, and supports.

However, not all Coloradans had the technology tools, skills, or awareness needed

to adequately connect with their providers nor fully trusted in the technology available to them. Providers who were already connected to health information exchanges and analytic organizations were able to monitor the health of their patients through notifications of events such as the admission to hospitals to better coordinate care for patients related to COVID-19. Other providers, however, could not easily share information with one another nor access population-level data and information to support public health decision-making.

Despite these challenges, Coloradans came together to address community issues and needs. The eHealth Commission and the Office of eHealth Innovation leveraged emergency funding for onboarding providers to the health information exchanges, expanding access to population analytics and technical assistance targeted to rural safety-net providers, and advanced the use of virtual health.

But much work remains to leverage existing infrastructure for public health emergencies and ongoing care coordination efforts. Public health information such as immunization records and testing results — most urgently needed during pandemic response — is available electronically to Coloradans through the myColorado Digital Application, myColorado.gov, and electronically available to providers but difficult to routinely access. Opportunities exist to refine and scale the availability of immunization information for population health and care delivery needs. Continuing to enhance health IT infrastructure and connectivity will reduce inequities and improve health and financial outcomes.

The 2021 Roadmap reflects the feedback of hundreds of Coloradans across the state who engaged in this process through regional learning collaboratives, interviews, surveys, listening sessions, and workgroups. A diverse group of Coloradans from all levels of health and health care, representing a broad cross-section of the state's geographic and demographic population, provided feedback.

Refreshing the Roadmap

The Office of eHealth Innovation and the eHealth Commission partnered with the Colorado Health Institute in May 2021 to refresh Colorado's Health IT Roadmap. Under the leadership and guidance of the eHealth Commission, the Office of eHealth Innovation and the Colorado Health Institute engaged with public and private partners from June 2021 to September 2021 to assess current and future needs in policy, funding, and technology, and solicit feedback on strategies for sustaining these efforts in the future.

Activities included more than 50 stakeholder meetings; virtual regional learning collaborative telemedicine meetings; community meetings in Haxtun and Trinidad; two virtual listening sessions open to the public; an online survey; the Annual Innovation Summit in September 2021; and posting the last draft of the Roadmap online for public comment. See Appendix 1 for a list of participating organizations and individuals.

The 2021 Roadmap synthesizes and reflects the priorities of the many participants in this process.

Coloradans identified many lessons learned from the COVID-19 pandemic that inform the 2021 Roadmap, including the need to act with purpose and urgency when addressing important issues facing local communities and the state. Stakeholders at all levels of the Roadmap refresh process expressed a similarly urgent desire for Colorado to accelerate its pace to meet these goals. The 2021 Roadmap calls for the important work needed now for Colorado to lead in the future.

Table 1. Aligning Colorado's Health IT Roadmap Initiatives with 2021 Roadmap Goals and Outcomes

eHealth Commission Initiative or Work Group	New, Updated, or Existing	2021 Roadmap Goal Alignment			Polis-Primavera Outcome Alignment		
		Access to Information	Coordinated In-Person, Virtual and Remote Services	Creating Health Equity	Affordable High-Quality Care	Access to Whole-Person Care	Equity for All
Accessible and Affordable Health Analytics and Population Health	Updated	X		X	X		X
Accessible and Affordable Health IT and Information Sharing	Existing	X	X	X	X		X
Best Practices for Health Information Cybersecurity Threats and Incidents	Existing	X	X	X			X
Broadband and Virtual Care Access	Existing		X	X	X	X	X
Consent Management	Existing	X	X	X		X	
Digital Health Equity	Updated	X	X	X		X	X
Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado	Existing	X	X	X			X
Health IT Portfolio/Program Management	Existing	X		X			X
Innovation Resource Center	New	X	X	X	X	X	X
Integrate Behavioral, Physical, Claims, Social, and Other Health Data	Existing	X	X	X	X	X	X
Patient Access to Health Information	New	X		X		X	X
Promote and Enable Consumer Engagement, Empowerment, and Health Literacy	Existing	X	X	X		X	X
Promote Value-Based Programs	Updated	X		X	X		X
Public Health Response	New	X	X	X		X	X
Scalable Data-Sharing Platform	New	X	X	X	X	X	X
Statewide Health Information Governance	Existing	X	X	X			X
Statewide Health Information Technical Architecture	Existing	X	X	X			X
Support Care Coordination in Communities Statewide	Existing	X	X	X	X	X	X
Unique Provider Identification and Organizational Affiliation	Existing	X		X		X	X
Uniquely Identify a Person Across Systems	Existing	X		X		X	X

Harnessing Health IT to Drive Change: Roadmap Goals

A top priority of Gov. Polis and Lt. Gov. Primavera is to ensure all Coloradans have access to affordable and high quality health care.[2] The Administration has identified affordability, access, and equity as priorities, which inform the 2021 Roadmap.

Health IT creates opportunities to meet people's needs. It offers pathways to solutions that meet shared goals and priorities. It can be a powerful tool that identifies health disparities and informs solutions to resolve them. And it must be used and implemented within the boundaries of legal rules with needed authorization and consent.

The Roadmap's goals are informed by the gaps in today's health IT infrastructure that were identified by stakeholders throughout the refresh process. Addressing these gaps is important to advancing affordability, access, and equity for all Coloradans.

Roadmap Goal 1: Coloradans, providers, payers, community partners, state, local, and Tribal agencies share data and have equitable access to needed health and social information.

Improving equity requires removing barriers that make it difficult for Coloradans to access, receive, and use their own health information. Coloradans also want to be able to securely share their data with and among trusted providers and organizations that support their health. Coloradans should be able to give — and deny — consent to allow providers, community organizations, payers, and agencies to access and share their data.

> **"Our staff spends a lot of time calling patients and providers on the phone to complete registry information. It would be much more efficient to connect to electronic registries to get health status information of our patients."**
>
> **A rural Federally Qualified Health Center administrator**

Providers interviewed for the Roadmap refresh process shared that they want to treat their patients as whole persons but cannot access holistic information to quickly understand each patient's health needs.

Although the majority of hospitals are connected to health information exchange, many providers — in particular rural safety net providers, behavioral health, oral health, long-term services and supports, and social supports like food and housing providers — are not able to share information broadly through the health information exchanges. Affordability, lack of technical workforce, and outdated electronic health records affect providers' ability to connect and share. Colorado's Rural Connectivity Program, led by the Office of eHealth Innovation and the eHealth Commission, is focused on prioritizing rural safety-net and behavioral health providers to connect to the health information exchanges. However, providers are not consistently incentivized or required to participate in the health information exchanges in Colorado.

2 Colorado Governor Jared Polis. Health: Saving Coloradans Money on Healthcare. https://www.colorado.gov/governor/health. Accessed July 9, 2021.

"Today's technology is not developed with the end user in mind."

A behavioral health provider in metro Denver

Three nonprofit organizations, Colorado Regional Health Information Organization (CORHIO), Quality Health Network (QHN), and Colorado Community Managed Care Network (CCMCN), play unique roles stewarding Colorado's health information exchange and analytic infrastructure (see Appendix 2 for more information from the 2019 Colorado Health IT Roadmap about health information exchange). Providers and organizations registered with CORHIO and QHN can electronically share data and information with one another to support patient care. CORHIO is the largest health information exchange in Colorado and provides critical infrastructure to providers, payers, and state and local organizations including identity resolution services and event notifications. QHN covers the Western Slope and focuses on provider-driven solutions and services. This includes tools and processes for whole-person care coordination. CCMCN, the technology organization for the Federally Qualified Health Centers and other community partners, is leading efforts statewide to establish interoperable technical systems focused on health outcomes and critical analytics that inform the coordination of care for whole-person and population health needs.

Providers in Colorado benefit from being electronically connected to one another and to statewide health information repositories and networks such as health information exchanges. Such connections can allow hospitals, providers, and payers to access patients' complete health records as well as aggregate datasets that support their participation in value-based quality reporting, reimbursement, and population health promotion. Small and rural providers, however, typically do not have the financial resources or expertise to establish such connections and use relevant analytics to support quality improvements.

Opening equitable, secure, and affordable IT pathways for patients, their providers, payers, community partners, and state agencies to connect with and share health and social services, information, and data would create an IT ecosystem that provides a more holistic look at health (see Figure 2 on page 13).

Addressing this need puts Colorado stakeholders in prime position for advancing Colorado's goals of affordability, access, and equity and provides opportunities for supporting existing activities and initiatives.

Interoperability is the ability of two or more systems to exchange information and use the information, without any human intervention, once it is received.

Affordability

- For patients and consumers, sharing data and information across providers that is relevant and permissible can reduce duplicative and unnecessary services, lower costs, reduce time spent completing duplicative paperwork, and minimize unnecessary in-person visits.[3]

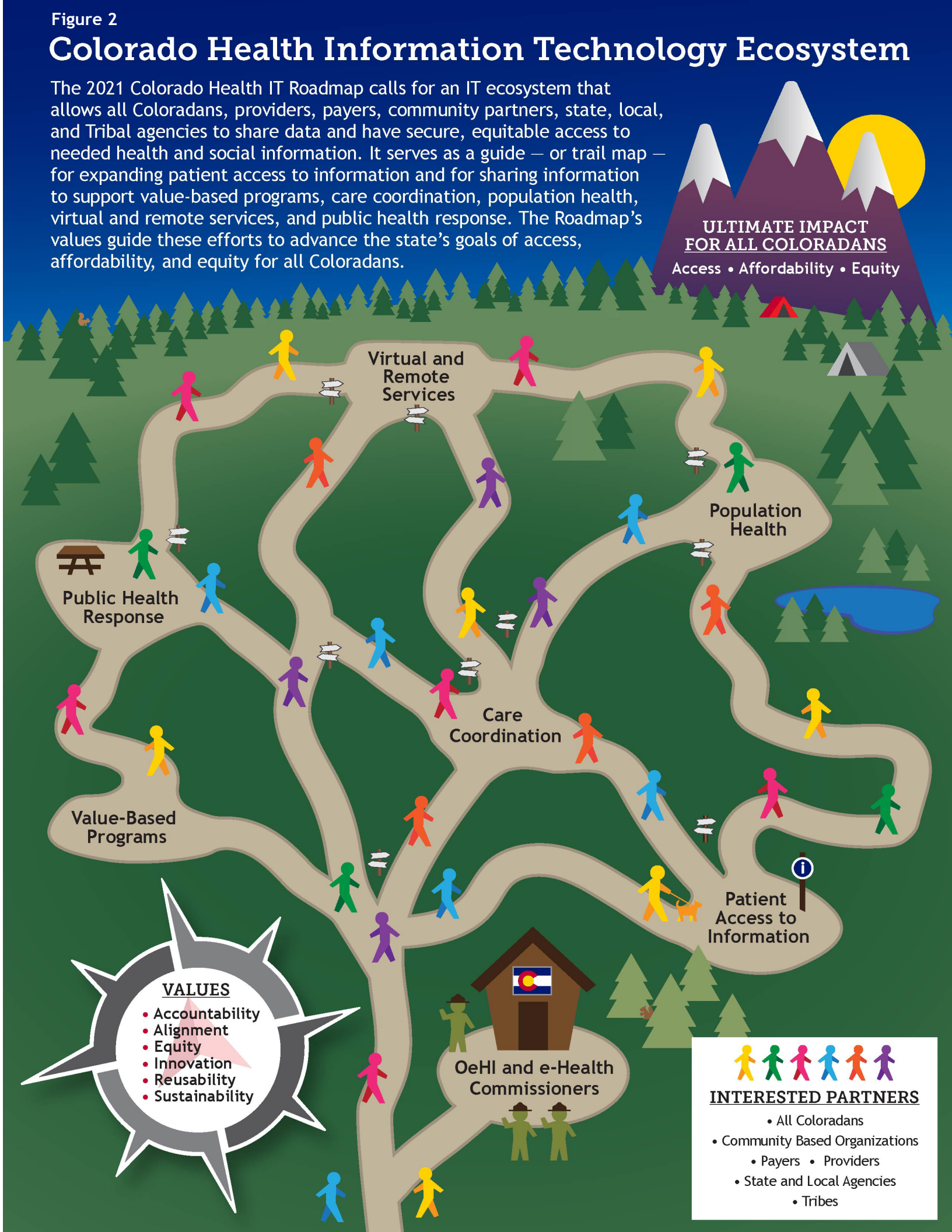
- For providers, organizations, payers, and patients, sharing quality data and information across a shared infrastructure leads to better health outcomes and lower costs. This information can be used to reduce administrative burden

3 Menachemi, N., Rahurkar, S., Harle, C., Vest, J. (2018). The benefits of health information exchange: an updated systematic review. Journal of the American Medical Informatics Association. 25 (9). https://doi.org/10.1093/jamia/ocy035

Figure 2

Colorado Health Information Technology Ecosystem

The 2021 Colorado Health IT Roadmap calls for an IT ecosystem that allows all Coloradans, providers, payers, community partners, state, local, and Tribal agencies to share data and have secure, equitable access to needed health and social information. It serves as a guide — or trail map — for expanding patient access to information and for sharing information to support value-based programs, care coordination, population health, virtual and remote services, and public health response. The Roadmap's values guide these efforts to advance the state's goals of access, affordability, and equity for all Coloradans.



with quality measure reporting, which lowers costs and incentivizes high-quality, coordinated care. Metrics and reporting for current and planned payment reform initiatives in the Office of Saving eople Money on Health Care, the Behavioral Health Administration, Health First Colorado (including Alternative Payment Models for Primary Care and the Hospital Transformation Program), and commercial payers could be facilitated through improved data and information sharing.

Access

- For providers, payers, community organizations, state and local agencies and Tribal health centers, sharing quality data and information will inform a better understanding of patients' and consumers' needs and ultimately whole-person care.[4] Coordinated, whole-person care also ensures that Coloradans receive the care and support they need to remain healthy, from a referral to a counselor or a dentist, to housing support or a prescription for fresh fruits and vegetables.

- Many health systems, communities and state agencies are actively working on sharing information to improve whole-person care. This includes efforts on Colorado's Eastern Plains through the Regional Accountable Entity and Colorado Community Managed Care Network. It also involves the Colorado Department of Human Services and the Colorado Department of Health Care Policy & Financing's Joint Agency Interoperability efforts that will enable cross-agency information sharing through standardization or Quality Health Network's Community Resource Network that enables providers on Colorado's Western Slope to connect their patients with behavioral health, housing, food, and transportation supports securely and efficientl .[5] Additionally, the Office of Behavioral Health is tasked with and has been funded to implement a comprehensive plan to strengthen and expand the behavioral health safety net system that calls for a coordinated technology and information infrastructure to increase access to behavioral health services for all Coloradans.[6] This step is critical for the Behavioral Health Administration, established through House

What's the difference between health IT, digital health solutions, and virtual and remote health services?

Health information technology includes things like computer hardware, electronic health records, computer programs, and information exchanges and systems that record, store, protect, retrieve, and share clinical, administrative, social, or financial information. Digital health solutions include tools and technologies ranging from patient portals and remote monitoring devices to mobile health applications (apps) for a smartphone or tablet that are used to improve health. Virtual and remote health services include a broad range of supports for patients, consumers, and providers to interact from different locations, from video telehealth visits to email chats. Virtual and remote health services can include medical, oral, and behavioral health.

4 Office of eHealth Innovation. Advancing a Coordinated Ecosystem for a Social-Health Information Exchange (S-HIE) in Colorado. 2021. https://oehi.colorado.gov/sites/oehi/files/documents/SHIE%20White%20 aper%20%281%29.pdf

5 Community Resource Network. https://communityresourcenet.org/. Accessed August 12, 2021.

6 Colorado Department of Human Services. Office of Behavioral Health. Senate Bill 19-222: Comprehensive Plan to Strengthen and Expand the Behavioral Health Safety Net. Senate Bill 21-137. Behavioral Health Recovery Act. https://leg.colorado.gov/bills/sb21-137.

Bill 21-1097[7], which will align, coordinate, and integrate state mental health and substance use programs and funding to streamline access and lower barriers to services for patients.

Equity

- For patients and consumers, access to timely and easily understandable, culturally appropriate information that is in their native language, on affordable devices and services, and through reliable infrastructure not only improves health outcomes and reduces costs but begins to address long standing inequities and structural barriers.

- To advance health equity, the Offic of eHealth Innovation and the eHealth Commission have refocused the 2021 Roadmap through an equity lens and is elevating equity goals through diverse representation on the eHealth Commission as well as funding projects across Colorado that advance equity and whole-person health.

Roadmap Goal 2: Coloradans access high-quality in-person, virtual, and remote health services that are coordinated through information and technology systems.

Coloradans want options for how and when they access care and supports. Virtual health services, including telehealth, have proven to be convenient and reliable solutions for whole-person care. Virtual care ranges from video visits with a behavioral health specialist or an oral health hygiene instruction visit with a registered dental hygienist to at-home monitoring and management of diabetes or high blood pressure.

7 Colorado General Assembly. House Bill 2021-1097. https://leg.colorado.gov/sites/default/files/2021a_1097_signed.pd

"I did not go out for a year during the pandemic; telehealth was very important to me. These are things we should have had and now that we have them, we need to keep them because (telehealth) works for people like me. What would have taken me a half-day with coordinating transportation is now a 15-minute visit."

A Health First Colorado member living with a disability in Southern Colorado

Adequate broadband service provides the needed speed for providers to connect with their patients, for patients to send information like blood pressure readings back to their providers, and for patients to securely access their health information online. The current recommended federal standards for broadband upload and download speeds (3 Mbps and 25 Mbps, respectively) are not sufficient to meet the needs of Coloradans.[8] The U.S. Treasury requires any broadband infrastructure projects to be funded by the American Rescue Plan to meet or exceed symmetrical download and upload speeds of 100 Mbps.[9]

Analyses using data from the Colorado Health Observation Regional Data Service (CHORDS) found that the amount of care delivered by telemedicine by a select group of Front Range providers during the COVID-19 pandemic increased dramatically, from an average of 39 encounters per week before the pandemic to

8 U.S. Government Accountability Office. Broadband: FCC Should Analyze Small Business Speed Needs. GAO-21-494. July 8, 2021.

9 U.S. Department of the Treasury. Guidance for the Coronavirus Capital Projects Fund for States, Territories & Freely Associated States. https://home.treasury.gov/system/files/136/Capital- rojects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf.

24,600 weekly encounters during the mid-2020 analysis period. The most significant use was by community mental health centers and patients seeking behavioral health care for conditions such as anxiety and depression.[10] Nearly all (86.5%) of Colorado providers surveyed as part of the 2021 Regional Telehealth Learning Collaborative began offering telehealth for the first time in 2020. And out of safety-net providers surveyed, most (93%) provided some form of virtual health for their patients.[11, 12]

Recommendations from the 2021 Regional Telehealth Learning Collaboratives, hosted by the Office of eHealth Innovation and rime Health, suggest starting with telebehavioral health as the service to expand upon and support continued adoption. This recommendation is in response to the need for this type of service and availability of digital solutions for both patients and providers but also strengthens alignment across state agencies with the development of Colorado's Behavioral Health Administration. Virtual health services are here to stay and are important resources for advancing the state's goals.

Providing whole-person care requires information from virtual and remote visits to be available, accessible, and shared with providers, organizations, consumers, patients, and agencies through health information exchange and available when and where needed. Electronic medical record systems do not always incorporate virtual and remote

"I want to help my parents age in place safely, but they need better internet to be connected with their medical providers."

A Coloradan with parents living in the San Luis Valley

tools or platforms readily or easily, from a virtual provider's notes to readings from telemonitoring of blood pressure or blood glucose. And some virtual or remote-only providers, especially those delivering care to Coloradans but located outside of the state, are not sharing data and information through health information exchanges, limiting the data and information available to Coloradans' other providers and creating the potential for duplicated effort and uncoordinated care during in-person visits.

Whole-person care coordination across in-person, virtual, and remote services for personal health and social needs is only possible with a connected and interoperable ecosystem and infrastructure (see Appendix 3 for more information about social-health information exchange).

Affordability

- Convenient, efficient, and accessibl services support Coloradans in getting the right care at the right time, avoiding costly visits to the emergency department. Consumers can save time and money by not having to leave work for appointments. When asked about their experiences using telemedicine, about 70% of Coloradans interviewed in 2020 reported being satisfied, relieved, or appreciative of th

10 Office of eHealth Innovation and Colorado Health Institute. The Value of Telemedicine During the COVID-19 Pandemic Response: Insights from Patient Care Utilization in Colorado. September 2020. https://oehi.colorado.gov/sites/oehi/files/documents/Insights%20From%20 atient%20Care%20 Utilization%20in%20Colorado_0.pdf. CHORDS covers a portion of the Front Range, so statewide numbers are presumed to be higher.

11 The Regional Telehealth Learning Collaborative are convenings of diverse cross-sector and industry stakeholders from across Colorado to advance statewide adoption and coordination of telehealth strategies.

12 Office of eHealth Innovation and rime Health. Regional Telehealth Learning Collaboratives. 2021. https://docs.google.com/document/d/1SEvX0k-9npj3JxkeaL2iHLNNmQJeD8kQ6I6M_plGLI8/edit

"Our work is to ensure good patient experiences and build the tools to support good health outcomes. If we cannot get patients the things they need and help them be more efficient then we are failing."

A hospital executive in rural Colorado

service.[13] A study of a California university health system's outpatient telemedicine program found positive, measurable impacts on patient travel time, travel costs, and environmental pollutants.[14]

- Telehealth has shown promise in reducing costs. Remote monitoring for patients with chronic conditions, for example, has reduced hospitalizations and emergency room visits and saved patients' travel costs.[15] With the ability to triage patients more accurately with the assistance of video, the Denver Health NurseLine was able to increase cost avoidance by patients and decrease unnecessary emergency department use. With support from the Office of eHealth Innovation s COVID-19 telemedicine project funding, this program found a 76% reduction in level of care a patient would need if seen over a video for triage by a physician rather than an audio call alone or an immediate ER visit.[16]

Access

- Virtual and remote health services reduce barriers that many Coloradans face when trying to access care, such as finding child care, arranging reliabl transportation, and securing time off to attend appointments. Outpatient telehealth consultations improve access by reducing wait and treatment times and by increasing the number of patients receiving tests or treatment.[17]

- The Department of Health Care Policy & Financing is supporting efforts to expand econsults for Health First Colorado members to facilitate access to specialty care. These efforts could be leveraged for other types of consults such as psychiatry and by other providers and payers statewide. And legislation establishing the Behavioral Health Administration cites the "imperative that an improved behavioral health system in Colorado … provides access to quality and affordable services in a variety of methods, including in-person and virtual services."[18] The Department of Human Services implemented telephonic signature processes to allow Coloradans to sign up for public benefits, such a Supplemental Nutrition Assistance Program (SNAP) food benefits, in the comfort o

13 Office of eHealth Innovation and Colorado Health Institute. The Value of Telemedicine During the COVID-19 Pandemic Response: Insights from Patients in Colorado. September 2020. https://oehi.colorado.gov/sites/oehi/files/documents/Insights%20From%20 atients%20in%20 Colorado_0.pdf.

14 Dullet, N., et. al. Impact of a University-based Outpatient Telemedicine Program on Time Savings, Travel Costs, and Environmental Pollutants. 2017. Value in Health. V. 20 (4). https://www.valueinhealthjournal.com/article/S1098-3015(17)30083-9/fulltext.

15 Totten AM, Womack DM, Eden KB, et al. Telehealth: Mapping the Evidence for Patient Outcomes From Systematic Reviews [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2016 Jun. (Technical Briefs, No. 26.) Table 7, Telehealth cost and utilization: Findings from systematic reviews. https://www.ncbi.nlm.nih.gov/books/NBK379312/table/findings.t9

16 Denver Health NurseLine Program Information submitted to the Office of eHealth Innovation. 2021.

17 Totten AM, Hansen RN, Wagner J, Stillman L, Ivlev I, Davis-O'Reilly C, Towle C, Erickson JM, Erten-Lyons D, Fu R, Fann J, Babigumira JB, Palm-Cruz KJ, Avery M, McDonagh MS. Telehealth for Acute and Chronic Care Consultations. Comparative Effectiveness Review No. 216. (Prepared by Pacific Northwest Evidence-based ractice Center under Contract No. 290-2015-00009-I.) AHRQ Publication No. 19-EHC012-EF. Rockville, MD: Agency for Healthcare Research and Quality; April 2019. https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/ce - 216-telehealth-final-report.pd

18 Colorado General Assembly. House Bill 2021-1097.https://leg.colorado.gov/sites/default/files/2021a_1097_signed pdf.

their own homes. This virtual approach, implemented in response to COVID-19, is being reviewed and evaluated in partnership with the counties for longer-term operations.

Equity

- Around one in 10 households in rural Colorado lacks broadband.[19] Federal investments in connecting rural community anchor institutions gave many providers adequate internet speeds, but households have not benefited from similar broadband boost. Approximately 130,000 households in Colorado have no computer or access to a digital device like a smartphone or tablet, according to 2019 data from the U.S. Census Bureau. Limited connectivity in rural communities reduces options for accessing health care as well as other social supports. It increases health disparities and widens equity gaps for residents in these communities.

- Access to care can be made more equitable by prioritizing infrastructure investments and policies that close disparity gaps such as improving access to affordable broadband, user-friendly tech tools, and live translation services; continuing to pay providers at the same rate for audio and video visits; and supporting patients and providers when needed. The Colorado Broadband Offic is focused on expanding connections for Coloradans who need access to virtual care.

- Colorado House Bill 21-1289 establishes the Colorado Broadband Office in statute an creates the digital inclusion grant program to award money to broadband projects that include $15 million toward broadband enhancements and devices for safety-net rural providers to enable and sustain

> **"I want to increase access to care for my patients and I want everyone on the care team to know what care has been provided."**
>
> **A hospital provider in metro Denver**

> **"It's the patient's information. They should be able to access it."**
>
> **Leader of a Critical Access Hospital**

virtual health in their communities and $20 million for Colorado's federally recognized Tribes to support broadband and virtual health efforts. From a rural perspective, health disparities and inequities exist due to limited workforce, geographic distances, and increased costs. Colorado legislators appropriated $6.4 million to the Office of eHealth Innovation in 2021 to begin to address this inequity as part of a larger investment to fund connections to health information exchanges and provide analytics and technical assistance in rural safety net facilities such Critical Access Hospitals and certified ural Health Clinics.[20] Still, larger ongoing investments and policies are needed to ensure both rural and urban providers have access to modern, trusted, and secure systems that can easily connect and share information statewide.

19 Colorado Broadband Office. (2021). Telehealth Funding Opportunities & Resources. https://docs.google.com/presentation/d/1WYJw_OVoubf8-X7rx6tW7yxRsjU6-icc/edit#slide=id.p1

20 Colorado General Assembly. House Bill 21-1289. https://leg.colorado.gov/sites/default/files/2021a_1289_signed.pdf.

Roadmap Goal 3: Colorado improves health equity through the inclusive and innovative use of trusted health IT and digital health solutions.

Not all Coloradans have equitable access to health IT and digital health solutions. Analyses using data from CHORDS found that telemedicine use during the COVID-19 pandemic decreased as patient age increased, with the lowest rate among those ages 65 and older, and that individuals identifying as Black and Asian had lower rates of adoption than those identifying as white.[21] Several studies have found that non or limited English speakers have lower rates of telemedicine use, strengthening the need to consider how systems can better integrate live interpretation and digital translation services into their infrastructure to promote greater communication and digital equity.

According to the Colorado Rural Health Center's 2021 Snapshot of Rural Health, it costs one rural health care facility $162,000 to implement an electronic medical record system, with $85,000 going to first-year maintenance costs alone.[22] An initial survey recently conducted by the Colorado Rural Health Center and supported by the Office of eHealth Innovation found that connecting to the state's health information exchanges is a challenge to rural providers due to the cost of service and labor costs to maintain connectivity and staff training. Due to fiscal challenges, health information exchange connectivity is limited in rural Colorado.

Colorado needs more from these tools and solutions to close equity gaps. Accurate data on self-reported race, ethnicity, preferred language, geography, and gender can illustrate disparities and other structural causes of health inequities and inform approaches to address them. Tools and solutions must be developed and evaluated with input from individuals and communities who will use them to promote participation, collaboration, and value.

> **"It is important to have demographic data to understand Colorado's disease burden ... but clinics that serve those who lack documents ... we sometimes feel we are asking them to undermine their trust in the community by asking for that information."**
>
> **A state agency representative and provider in Colorado**

Coloradans want to easily access their information, find resources, connect with their providers, and control decision-making about their care and their loved ones' health and well-being. Colorado will not achieve its shared goals unless all Coloradans can live, work, learn, play, and thrive in healthy, inclusive, and equitable environments. Health IT and digital health can help if equity is prioritized in its development and use.

Access

- Digital accessibility is not the same for all Coloradans. It could include screen readers for individuals with vision limitations, readability for individuals of different literacy levels, language options with one click, and images that require limited bandwidth. Technology can reinforce or further entrench inequities if not developed intentionally so that all individuals can participate.

21 Office of eHealth Innovation and Colorado Health Institute. The Value of Telemedicine During the COVID-19 Pandemic Response: Insights from Patient Care Utilization in Colorado. September 2020. https://oehi.colorado.gov/sites/oehi/files/documents/Insights%20From%20 atient%20Care%20 Utilization%20in%20Colorado_0.pdf.

22 Colorado Rural Health Center. Snapshot of Rural Health in Colorado, 2021. Accessed August 12, 2021.

- Governor Polis issued Executive Order D 2020 175 in August 2020 calling on state agencies to advance diversity, equity, and inclusion efforts across Colorado.[23] This includes creating "statewide standards of accessibility to guide agencies in ensuring State buildings, systems, vital documents, community meetings, and other communications and resources, including websites, are accessible to all Coloradans, regardless of ability or language. Where applicable, these standards shall be at or above the standards required in the Americans with Disabilities Act and the Colorado Anti-Discrimination Act."

- Colorado's Broadband Advisory Board created the Subcommittee on Digital Literacy and Inclusion to "discuss, research, analyze, and draw conclusions concerning digital literacy and inclusion" and has developed three working groups to support policy, data, and promising practices.[24]

Affordability

- Disparities account for approximately $93 billion in excess medical care costs nationally and $42 billion in lost productivity each year, not accounting for premature death.[25] Digital health offers individuals more control over their bodies and minds. It can support Coloradans in making better-informed decisions through greater access to data and information. It can also provide new options for facilitating preventive services, early diagnosis of life-threatening diseases, and management of chronic conditions outside traditional health care settings.[26]

"Every portal is different, which is annoying and frustrating. I need to constantly remind myself which provider I am trying to connect with. It is time consuming. I really wish there was one front door that looked good and was easy to use."

A person living in southern Colorado

- Text messaging during the COVID-19 pandemic assisted many Coloradans in accessing preventive care and support. The Colorado Department of Public Health and Environment used text messaging in English and Spanish to notify Coloradans who were overdue for their second COVID-19 vaccine. Youth leaders with Colorado's Below the Surface developed new messages for young people accessing Colorado's Crisis Services text line during the pandemic to reduce isolation and encourage people to ask for help.[27]

Equity

- Digital health equity requires all individuals to have access to at least one device such as a laptop or cell phone; adequate and affordable cellular service and internet to connect; and relevant digital health tools, resources, and supports. This can include, for example, translating digital resources into additional languages and engaging patients and

23 Governor Jared Polis. Executive Order D 2020 175 Equity, Diversity, and Inclusion for the State of Colorado. https://www.colorado.gov/governor/sites/default/files/inlin - files/D%202020%20175%20Equity%2C%20Diversity%2C%2and%20Inclusion%20for%20the%20State%20of%20Colorado.pdf. Accessed August 29, 2021.

24 Colorado Department of Labor and Employment. Digital Literacy and Inclusion Initiative. https://cdle.colorado.gov/digitalinclusion. Accessed August 8, 2021.

25 Turner, A. The Business Case for Racial Equity. https://altarum.org/RacialEquity2018. Accessed August 11, 2021.

26 U.S. Food & Drug Administration. What is Digital Health? https://www.fda.gov/medical-devices/digital-health-center-excellence/what-digital-health. Accessed August 13, 2021.

27 Colorado Department of Human Services. Youth leaders to develop messaging for Colorado Crisis Services during COVID-19 emergency. https://cdhs.colorado.gov/press-release/youth-leaders-to-develop-messaging-for-colorado-crisis-services-during-covid-19. Accessed August 13, 2021.

"The multiple Medicaid and provider websites are challenging to navigate, especially for a person who is deaf or hearing-impaired."

A Coloradan who identifies as deaf and is enrolled in Health First Colorado

consumers directly in the development of these tools. It can also include synchronous interpretation services needed for live telehealth visits. Human-centered design is an effective approach to meaningfully co-create with users, remove accessibility barriers, and prioritize people's needs and concrete experiences.[28]

- Colorado's "Health at Home" website (healthathome.colorado.gov) developed by the Office of eHealth Innovation provide one-stop access to information to assist Coloradans seeking virtual care regardless of their insurance status. The Department of Health Care Policy & Financing has begun a significant effort to improve th usability of Colorado's Program Eligibility and Application Kit (PEAK), the state's online service for Coloradans to apply for health, food, cash, early childhood assistance programs, and more. This effort is in response to Health First Colorado client feedback around challenges and needs.[29] These modifications, which include updated client-friendly language and redesigned, mobile-friendly pages, remove barriers to access the services and supports Coloradans need when they need them.

28 Isaac Holeman & Dianna Kane (2020) Human-centered design for global health equity, Information Technology for Development, 26:3, 477-505. https://www.tandfonline.com/doi/full/10.1080/02681102.2019.1667289. Accessed August 11, 2021.

29 Colorado Department of Health Care Policy & Financing. 2021 COVID-19, RRR Revamp, and PEAK Modernization RMC/RRR Projects. https://hcpf.colorado.gov/sites/hcpf/files/Accountable%20Care%20Collaborative%20 rogram%20Improvement%20Advisory%20Committee%20Public%20Health%20Emergency%20Update%20June%202021.pdf

Building from a Strong Foundation: Colorado's 2019 Health IT Roadmap

Colorado's Health IT Roadmap guided the transformation of the state's health IT landscape over the past five years. It was originally published in 2017 with input from over 1,000-plus stakeholders and updated in 2019. It included 16 high-level actionable initiatives to support Colorado's Triple Aim of better care, lower costs, and improved health for all Coloradans. Some key accomplishments of the 2019 Roadmap include:

- Establishing a strategy and governance that secured and prioritized more than $50 million in federal, state, and private sector funds to advance health IT.
- Refocusing technical, governance, and innovation efforts through a health equity lens.
- Creating a business case for developing a social-health information exchange to support coordinated whole-person care across the physical, social, and behavioral health domains.
- Developing a nimble, flexible proces to support a rapid pivot in priorities and activities to support the COVID-19 pandemic response.
- Implementing essential virtual health and remote service programs and policies to ensure Coloradans had access to needed care during the pandemic and beyond and to inform state recommendations on future telehealth and broadband infrastructure and policy decisions.
- Advancing state health priorities using reusable health information exchange and analytics in Colorado through efforts to increase access and connectivity among rural and safety net providers in a way that is sustainable.
- Coordinating the development of a framework and technical sandbox (Colorado.Developer.Gov) for health information governance in Colorado.
- Developing sustainability and agile business plans with extensive community input in preparation for the end of the federal Health Information Technology for Economic and Clinical Health Act.

These successes — as well as other important insights within the 2019 Roadmap — provide a strong foundation upon which this 2021 Roadmap is built.

"Colorado needs a streamlined approach for getting communications going between patients and providers. There are so many different ways to connect right now, it is frustrating."

An advocate for people with disabilities who is vision-impaired

Core Values and Objectives for the Work

Colorado's health IT policies, investments, and activities over the next three years will be guided by values that support state and Roadmap goals. The Office of eHealth Innovation and the eHealth Commission, which steer the Roadmap in collaboration with stakeholders and communities across the state that participated in the Roadmap refresh process, identified the values that will drive this work. Below is a list of these core values and objectives.

Accountability: Invest in initiatives and quality, affordable solutions that address the needs of patients, providers, communities, payers, state, local, and Tribal agencies.

Alignment: Engage and coordinate across state and local agencies, providers, payers, and community partners to strategically leverage efforts, establish shared solutions that meet the business needs of multiple stakeholders, and maximize impact to all Coloradans.

Equity: Facilitate individual-, community-, and systems-level solutions that measure, address, and reduce disparities and advance equity.

Innovation: Accelerate creative ideas and easy-to-use solutions that generate value and have potential for scale.

Reusability: Leverage existing, affordable solutions that support end users' needs when feasible and appropriate.

Sustainability: Promote solutions that provide value and encourage and justify long-term financial support.

These values and objectives will be codified in governance structures as well as guide transparent decision-making. The Office of eHealth Innovation and the eHealth

Commission are developing a tool and decision-making process for assessing projects and solutions for new or continued funding. The tool includes a series of questions that the project sponsor, vendor, or manager must respond to, including how the approach addresses equity, reduces costs, promotes coordination, and increases access, especially for underserved communities. If these priority issues are addressed, Commissioners assess and prioritize based on how the project solves an unmet need, reduces provider and patient administrative burden, especially among rural and safety net providers, and drives future innovation.

Achieving the Goals

POLICY

Ensuring that the Roadmap goals are met requires an intentional and strategic focus on policy. Policies underpin meaningful reforms and drive equitable changes. Colorado's policy levers can include state legislation, agency regulation and guidance, financial incentives, and contract and licensure requirements that drive compliance with state goals and support implementation or operations. These levers help clarify authority, support accountability, and make explicit shared goals for this work by requiring specific actions. State policies align Colorado with federal requirements and support the state's efforts to successfully meet them. Lack of clear policies creates the potential for systems gaps and failures as well as misalignment of stakeholders, the results of which typically fall hardest on those who are disproportionately affected by existing inequities.

Stakeholders who participated in the Roadmap refresh process singled out policy solutions as one of their highest priorities for achieving the goals of the refreshed Roadmap, yet one of the most difficult items to accomplish.

Except for exchange between providers and entities covered under the Health Insurance Portability and Accountability Act, Colorado lacks a universally accepted policy framework with established rules and requirements for advancing the secure sharing of health and social data and information across multiple systems and partners — known as interoperability — as called for in Roadmap Goal 1.

The Colorado Health Information Governance Guidebook, which is in development by the Office of eHealth Innovation and the eHealth Commission's State Health Information Governance Committee in partnership with state agencies, local governments,

patients, payers, providers, and community organizations, is the start of a universally accepted approach and framework.[30] Once approved by the eHealth Commission as a key recommendation, policy and stakeholder work remains to solidify and encourage the adoption of these recommended approaches.

The state cannot achieve its health IT goals nor advance affordability, access, and equity for all Coloradans without closing these policy gaps. The Colorado Health Information Governance Guidebook aims to provide clarity on responsible information sharing for key patient, provider, and payer cases. Colorado's Chief Data Officer is leading a renewed approach to the Government Data Advisory Board; however, much work remains to leverage reusable health IT infrastructure and recommended policies to achieve state priorities.

This section describes the needed policy solutions and current efforts and opportunities upon which Colorado can build (see Appendix 4 for national best practices or examples of these solutions in other states).

30 Office of eHealth Innovation. Statewide Health Information Governance. https://oehi.colorado.gov/oehi-projects/statewide-health-information-governance. Accessed September 21, 2021.

Federal Requirements and National Trends in Exchanging Information

The Office of the National Coordinato , within the Office of the Secretary for the U.S. Department of Health and Human Services, is charged with leading the nation's efforts to advance health IT and connectivity.[31] Federal agencies, including the Office of the National Coordinator and the Centers for Medicare & Medicaid Services, have taken strong leadership positions through recent policies and funding initiatives to promote the following goals:

- **Enhancing Patient Access to Electronic Health Information:** Ensure patients' access to information is easier and quicker while also easing the burden on providers and payers to make patient data available.
- **Expanding Health Information Technology to a Nationwide Network:** Provide a legal and technical framework for local health information networks to collaborate and form Qualified Health Information Network (regional and eventually national networks) to ease data sharing.
- **Advancing Interoperability Requirements:** Detail technical requirements for information exchange between payers, providers, and patients, with particular attention to adherence to standard data terminology and standard transport protocols (such as data formats to be used with an application programming interface).

Health information exchanges across the United States are partnering across states to form regional networks that are positioned to serve as regional health data utilities as part of this new direction. Health information exchange mergers and the desire of these private sector entities to serve as a public health utility are positioning them to serve state and community health information needs, but further consideration and stakeholder input is needed on defining the role and governance of health data utility.

In Colorado, CORHIO has affiliated with Health Current, a health information exchange in Arizona, to form a regional organization known as Contexture.[32] This collaboration has the potential to leverage services and innovation between two established health information exchanges for the 7,500 providers and 76 hospitals in Colorado already exchanging clinical data in real-time through CORHIO.[33] Quality Health Network helps hospitals, medical and behavioral health providers, post-acute care facilities, home care agencies, and other providers in western Colorado securely share patient data. More than 90% of area providers and all area hospitals participate in Quality Health Network. Colorado Community Managed Care Network provides technology services for Colorado's Federally Qualified Health Centers and other community partners and is leading efforts to create interoperable technology systems that support whole-person care coordination and population health improvement.

The Office of the National Coordinato 's recent publication of Trusted Exchange Framework and Common Agreement Draft 2 emphasizes interconnected systems and the promotion of interoperability through standards and a common set of principles, terms, and conditions. It requires policies for establishing a single on-ramp to connectivity through deliberate promotion of standards across the country.[34] This 2021 Roadmap identifies policies and services that will meet Coloradans' needs today while also moving the state closer to developing a single connection point for stakeholders in the future.

31 Office of the National Coordinator for Health Information Technology. About ONC. https://www.healthit.gov/topic/about-onc. Accessed July 11, 2021.

32 CORHIO and Health Current Introduce New Regional Organization — Contexture. https://www.corhio.org/news/2021/8/3/1302-corhio-and-health-current-introduce-new-regional-organization--contexture. August 3, 2021.

33 CORHIO Dashboard July 2021, personal communication, September 2021.

34 Office of the National Coordinator for Health Information Technology. Trusted Exchange Framework and Common Agreement. https://www.healthit.gov/topic/interoperability/trusted-exchange-framework-and-common-agreement. Accessed July 11, 2021.

Application programming interfaces: Messengers or translators that work behind the scenes by promoting standards that help software programs communicate with one another.

Recommendation: Adopt specific data sharing agreements, consent and consent revocation forms and processes for all providers, payers, community-based organizations, and state and local agencies that enable Coloradans to authorize the exchange of personal health and social data among these partners.

Colorado Opportunity: Stakeholders requested greater communication and direction on aligned policy and guidance from state and federal leaders to support the coordination of whole-person care. Developing a legal and information-sharing framework is critical for meeting the goals of the Behavioral Health Administration as well as affecting the social determinants of health for Colorado residents. These policies will also assure that information to support care coordination and population health of Coloradans is kept secure and not publicly available. Lastly, these policies will empower individuals to maintain control over when, how, and with whom their data are shared.

Recommendation: Implement and incentivize standardized processes and specific data standards for providers and state agencies to collect and exchange demographic, personal health, and social data elements through health information exchanges.

Colorado Opportunity: Creating policy and regulatory incentives for all practices, hospitals, and state agencies to collect and share quality health and social information is a critical step for identifying and addressing disparities and inequities among key equity dimensions including race, ethnicity, and gender. Financial rewards through public or private payers as well as policy and regulatory requirements must be in place to ensure compliance and to drive needed changes based on the findings. Using similar data standards that align with federal requirements means that everyone is sharing comparable data regardless of what electronic medical record they use or the way they store information. Development, adoption, and use of standard terminology, such as Admit, Discharge, and Transfer messaging for hospitals or Logical Observation Identifiers Names and Codes coding for patient screening results, is important for the accurate communication of health and non-health information between end users. If data are entered as free text, for example, it is difficult to share with other organizations or providers in a consistent way. While some systems automatically store and share data and information using commonly accepted terms, many systems still rely exclusively on proprietary and custom terminology. Some types of care, such as emergency services or social supports, lack any data terminology standards, or they are just beginning to emerge.

Recommendation: Continue or expand policies that promote equitable access and availability of virtual and remote health services.

Colorado Opportunity: Since 2020, Colorado policymakers have expanded coverage for telehealth services among both public and private payers and allocated funds toward expanding equitable broadband infrastructure and subsidy programs. As of July 2021, Colorado is among many states that have allocated federal American Rescue Plan Act funds for broadband access, directing support to the Digital Inclusion Grant Program to assist income-eligible households.[35] Continuing these important policy changes, including the requirement that all payers reimburse

35 National Council of State Legislators. State Broadband Spending in 2021. https://www.ncsl.org/research/fisca - policy/state-broadband-spending-in-2021.aspx. Accessed August 11, 2021.

at parity for audio and video telemedicine visits and cover medical, behavioral, and oral health virtual services, will promote access and availability. Reimbursement that supports virtual and remote services within a patient-centered medical home advances whole-person care. National policy advocacy promoting broadband regulation can create greater accountability for speed and bandwidth as well as improve availability in underserved communities. Investing in solutions that ensure equitable access to devices is another strategy for reducing disparities and enhancing availability of health care services. During the COVID-19 pandemic, the Mental Health Center of Denver collaborated with the nonprofit PCs for People and solicited donations to provide computers, smartphones, tablets, and financial assistance for basic internet access to ensure telehealth options were available for anyone who needed them.[36]

Recommendation: Ensure the Office of eHealth Innovation and the eHealth Commission continue to steward Colorado's health IT ecosystem and clarify their relationships with state agencies, health information exchanges, and other stakeholders in Colorado.

Colorado Opportunity: The Office of eHealth Innovation is responsible for defining, maintaining, and evolving Colorado's health IT strategy around shared state priorities. The Office and the eHealth Commission continue to facilitate the alignment of needed policies, funding, and technology services across Colorado to advance shared

36 Mental Health Center of Denver. Summer 2020 Report to the Community. https://mhcd.org/2020-report-community/. Accessed August 11, 2021.

goals (see Stewarding the Work on page 37). Consideration should be given to establishing legacy policy as the Office and the eHealth Commission are established through Executive Order B 2015-008. Additional definition is needed on the relationship, responsibility, and accountability of health information and social-health information exchange entities to serve the state priorities and key uses cases. All these entities need sufficient and sustainable resources, personnel, and capacity to carry out these efforts.

SERVICES

Colorado has made progress over the past 10 years in building important technical infrastructure for storage and exchange of health information across the state. These efforts have been undertaken by state and local agencies, nonprofit technical partners, and community providers and caregivers.

About 72% of Colorado's health care providers and hospitals are connected to one of Colorado's two health information exchanges. The Office of eHealth Innovation is closing the gap in rural communities by supporting safety-net providers in getting connected.[37] Coloradans can add a photo of their COVID-19 vaccine card through the myColorado app to easily access digital proof of vaccination. And prescribers can use a cohesive Prescriber Tool to access both Health First Colorado and commercial health plan members' prescription drug benefits using their electronic health records to make it easier to write prescriptions, help members get needed medications, and save money on prescription drugs.[38]

However, some of this work and innovation has resulted in a patchwork of services that

are often parallel, at times redundant, and up to now largely disconnected. Many of these services exist today in Colorado but are currently not centralized, are only partially centralized, or are unaligned with each other, resulting in lack of access to technology or maintenance of multiple parallel versions.

Stakeholders identified the need for a set of shared services to achieve the Roadmap's goals and to advance affordability, access, and equity among patients, providers, and communities. These unified, statewide services should be developed for and accessible by all stakeholders, including state agencies and private-sector providers and partners, to bring coherence and alignment across a decentralized and patchwork system.

Development of shared, high-value, reusable core services that provide broad benefits to most end users are logical investments for Colorado because the cost of building and

37 Office of eHealth Innovation. Advancing HIE & Rural Connectivity. https://oehi.colorado.gov/oehi-projects/advancing-hie-rural-hie-connectivity. Accessed August 13, 2021.

38 Department of Health Care Policy & Financing. Prescriber Tool Project. https://hcpf.colorado.gov/prescriber-tool-project. Accessed August 13, 2021.

maintaining those services can be shared by multiple stakeholders, including state agencies and private sector partners. Advancing an extendable and scalable data sharing platform not only leverages existing technology in the state but lays a common foundation on which to build innovative applications that benefit individuals, providers, and community partners. Colorado should also establish a resource center that supports all Coloradans and community partners in accessing the tools, expertise, and assistance they need to successfully use virtual and remote health services and other digital health solutions.

Successfully establishing these shared services for providers and communities will serve as a strong foundation upon which Colorado can develop additional services as well as further integrate and streamline health and social information exchange in the future.

This section describes needed services and opportunities upon which Colorado can build (see Appendix 5 for national best practices and examples of these solutions in other states).

Recommendation: Establish core information services available to and used by all Colorado providers, community organizations, private payers, and state agencies to advance shared goals and facilitate equitable access to health and social information.

- **Individual Identity Management** — This service identifies unique individuals across different systems and allows for 1:1 matching of records to enable linking of records for shared patients or clients across systems. This service allows for the secure, authorized, and trusted linkage of unique individuals across disparate systems using a dynamic, state-of-the art matching approach.

Colorado Opportunity: The Office of Information Technology is leading state efforts to advance an ensemble of identity management and onboarding services on behalf of the state. This work was started through Colorado's Health IT Roadmap efforts with investments led by the Office of eHealth Innovation and continues in partnership with the Office of Information Technology, state agencies, and CORHIO. The Department of Health Care Policy & Financing and the Colorado Department of Public Health and Environment are using this service for immunization outreach. This operational system could be leveraged by numerous stakeholders and eventually be adopted statewide. The Joint Agency Interoperability Project led by the Departments of Human Services and Health Care Policy & Financing is leveraging these investments and leading foundational technical, data quality, and master data management efforts that are precursors to leveraging these services.

The State's Digital Application and Drivers' License known as myColorado is part of the immediate and longer-term vision for uniquely and securely creating a one-stop shop for state services and establishing secure digital identity. Residents can, for example, access their Colorado Digital ID, an electronic representation of a Colorado driver license or state ID, stored within myColorado. This system is being leveraged to support secure identity onboarding management activities as well as identity verification. This application also offers secure and convenient access to several state services such as trusted vaccination information and non-health services such as fishing licenses and searching employment opportunities.

- **Provider Index and Directory** — This service maintains a single, centralized, and frequently updated list of all providers that are licensed to practice in the state. The master provider directory could be used for attributing patients to providers, enabling accurate Consent Management (see below), and providing consumers with a curated list of high-quality providers that are accepting new patients.

Colorado Opportunity: CORHIO will be accessing a Colorado Health Systems Directory at the Colorado Department of Public Health and Environment by the end of 2021. The directory is an aggregation of various provider directories maintained throughout the state. This directory (and the application programming interface developed to access it) could also help the Department of Health Care Policy & Financing and Division of Insurance in organizing value-based payment programs and assessing insurance network adequacy. It will also provide insights for the Behavioral Health Administration's efforts to develop a trusted directory of behavioral health providers and an assessment of behavioral health workforce needs at the community level.

- **Community Resource Inventory** — This service maintains a central access point of all community-based organizations providing social services and supports in Colorado. This allows efficient and effective exchange of screening results, referrals, and when permissible, eligibility status of patients/clients for providers, state agencies, and community-based organizations. It is also essential for establishing a closed-loop, bidirectional electronic referral process so that all partners are fully informed and can be successful in delivering whole-person care.

Colorado Opportunity: Colorado has many partners offering resource inventories, but they may not be up-to-date, widely available to all users, or connected with health information exchange. 2-1-1 Colorado, a statewide, central system to connect to resources, has long-standing experience and investments that can be leveraged for developing an accurate, up-to-date statewide inventory.[39] The Office of eHealth Innovation has funded Mile High United Way and CORHIO to expand the reach and functions of 2-1-1 Colorado to meet this need. Through this partnership, local and regional resource inventories already in use throughout the state will be connected through 2-1-1 Colorado. This approach allows communities to directly update and access local resources as well as share this information across regions within the 2-1-1 system, which can serve as Colorado's single source of aggregated data and information.

- **Consent Management** — This service would centrally maintain patient and client consent information, allowing the sharing of information including behavioral health and social data between providers. Specificall , this service would maintain needed consent for sharing of substance use disorder data as required by federal regulation under 42 CFR Part 2, as well as social data to and from community-based organizations. Ideally, individuals would be able to manage their own consent through online access to an application for granting or revoking consent of their information to specifi providers. This service would be developed in collaboration with the Behavioral Health Administration and be aligned with the policy recommendation for a statewide consent form and/or process.

Colorado Opportunity: Colorado has tools upon which to build and develop this service. myColorado allows residents to grant or revoke consent digitally. The Mental Health Center of Denver piloted the use of myColorado in its telehealth platform and mobile application to support identity verification and consent management. The Joint Agency Interoperability Project is developing requirements for a consent framework and technical approach through the PEAK Health website and application to support coordinated services and care as well as piloting digital consent through myColorado, enabling electronic approval for child care assistance in a multiple signer environment. Lastly, the Office of Behavioral Health is leading policy efforts to define how behavioral health information is shared and what consent is needed for reporting and coordination of individuals who receive care from their providers.

39 2-1-1 Colorado. 211Colorado.org. Accessed July 23, 2021.

- **Data-Sharing Management** — This service centrally maintains all data-sharing agreements within state agencies and among state agencies, research organizations, providers, and local Colorado governments (cities and counties) and agencies. The service identifies whic data elements can be electronically shared between specific entities and individual within those entities (and also maintains all legal documents associated with those agreements). It also manages technical aspects of data sharing including formats, storage, presentation, and linkages among different datasets.

Colorado Opportunity: The Colorado Office of Information Technology is currently designing this system based on passage of House Bill 21-1236, which provides it the authority to do so.[40] The Office has formed subcommittees t address data sharing, data inventory, and data governance issues as part of its charge and legislative requirements to coordinate existing efforts with established state agency practices as well as minimize duplication. This work builds upon collaborative state and community efforts in progress.

Recommendation: Advance a scalable data-sharing platform for Colorado providers, community organizations, commercial payers, and state agencies that incorporates core information services and leverages and reuses existing state IT investments when appropriate.

Colorado Opportunities: A data-sharing platform should allow all stakeholders to easily connect to and use the platform for accessing core information services. However, it should also be flexible enough to accommodate new and innovative applications for Coloradans, payers, and community partners. The platform should use common, nonproprietary technical standards for requesting and sending information over the network to ensure equitable access. The platform would be a conduit between stakeholders and does not need to store any sensitive data about individuals in a central database or location. Stakeholders could keep sensitive data behind their firewalls and only share it with authorized requestors. A technical architecture review committee (see Stewarding the Work on page 37) should be convened and involved with the design and development of this platform.

The Colorado Office of Information Technology already has developed an Enterprise Service Bus application that is currently being used to share data among agencies like the Office of Behavioral Health, Health Care Policy & Financing, and Department of Regulatory Agencies and with counties. This application may be an example of an existing tool that could be leveraged for other uses with additional development.

CORHIO and Quality Health Network have together developed a statewide network to connect health care providers to each other. This investment in infrastructure could be leveraged as part of Colorado's data sharing platform. The Colorado Community Managed Care Network (CCMCN) is developing a platform for Colorado's Federally Qualified Health Centers and rural safety net providers as part of the Rural Connectivity Program that enables providers in Health First Colorado's Region 2 to access many of these services and data sources. CCMCN integrates clinical and claims data to create analytics and provider tools and resources that support clinical quality improvement activities, targeted health interventions, and care coordination. Through the Community Care Network in northeast Colorado, CCMCN has assembled an integrated technology stack that supports an interoperable "plug and play" care coordination and closed loop referral system. The system combines an interoperable technology solution, social-health data analytics, and insights to identify community needs with proactive testing and active implementation of targeted care coordination improvement interventions.

40 Colorado General Assembly. House Bill 21-1236. https://leg.colorado.gov/sites/default/files/2021a_1236_signed.pd .

Beyond 2024: Getting to a Single On-Ramp in Colorado

Currently, many patients and providers across the state have either no connection to electronic data or they must rely on multiple electronic connections through various entities to get all their information. For example, a patient must access separate provider and state agency portals and remember multiple passwords to get their complete health and social record. A provider's electronic medical record must maintain separate connections to a health information exchange, a laboratory, and multiple registries that require different passwords. Consumers must navigate multiple applications and websites to access health education and public health information and to communicate with state agencies. This results in a time-consuming, expensive, and disconnected care experience. Patients and providers should be able to maintain a single connection point — one "on-ramp" — to send and receive all health and social information they need to share, including relevant state agency data.

A single connection to accessing data does not mean a single system or centralized warehouse of data. Technical partners and providers can advise as to how to build an effective and efficient structure. Systems can be developed and maintained separately to meet individual users' needs. These systems can also be integrated through cloud-based technology, using core information services such as identity and consent management, as part of the scalable data sharing platform described above. Different data requests by the same user would be submitted to the same connection point; then, the system would route the request to the intended recipient and manage data delivery back to the user. Privacy and security for agencies, organizations, private payers, and individuals must be spelled out through shared and enforced governance.

Harmonizing access to multiple, centralized services and data improves the user's experience — whether it be a patient, caregiver, private payer, or state agency employee. Harmonized access positions Colorado for meeting the goals outlined in the federal Trusted Exchange Framework and Common Agreement regarding our nation's movement toward single access points for health information.

myColorado is an example of such a single connection point for Coloradans. It represents a single on-ramp for storing, sharing, and managing an individual's information with health care and other state agencies and community providers.

Recommendation: Create a Colorado Innovation Resource Center for residents, providers, and community partners to access trusted information, resources, and support for health IT, virtual and remote health services, and other digital health solutions.

Colorado Opportunity: The 2021 Regional Telehealth Learning Collaboratives led by Prime Health in partnership with the Office of eHealth Innovation identified a need for a go-to resource or "Innovation Center" in Colorado for telehealth information, training, workforce support, and resources. Many organizations already offer these services, as well as information and support, at the local, state, and regional levels. For example, Colorado providers participating in Health

First Colorado can access technical assistance with quality improvement activities through a Regional Accountable Entity (organizations responsible for coordinating members' care and ensuring they are connected with primary and behavioral health care). A Colorado Innovation Resource Center would not replace these efforts but instead streamline and coordinate access to existing resources.

A center would provide an opportunity to highlight, promote, and expand the use of best practices for human-centered design, automation, and other technology and digital health solutions, especially those that advance equity and reduce disparities. It should be a connection point between residents and organizations serving communities directly and seeking to understand their needs and preferences. For example, the center could facilitate discussions between community members and providers about new digital health tools or assist providers in evaluating for inequalities and disparities in use and outcomes. The center could also be a trusted resource for centralized and up-to-date information on policy and regulations, including guidance on cybersecurity. It could incubate the development and implementation of innovative digital health solutions. It could also support providers in selecting and managing technology vendors as well as provide assistance in using analytic tools for calculating and reporting quality metrics. As a non-governmental entity, a center could partner with stewards charged with implementing health IT efforts (such as the Office of eHealth Innovation) through formal business agreements and potentially secure additional resources to support this work.

FUNDING

Successfully improving the quality of care, saving people money on health care, and increasing equity through the use of health IT requires a long-term, consistent, and multi-sourced funding approach to adequately develop technology services that meet stakeholders' needs and sustain the system indefinitel .

The state tapped more than $200 million since 2008, including $51 million since 2017, through federal Health Information Technology for Economic and Clinical Health Act funding to create the foundation for Colorado's health IT infrastructure and accelerate Roadmap activities. While essential, these resources have largely consisted of project-based funding and have at times resulted in parallel, short-lived, and somewhat redundant investments by different state agencies and allied organizations.

Federal funding through the Health Information Technology for Economic and Clinical Health Act ceased on September 30, 2021. This brings new opportunities to think creatively about how to continue to fund and sustain shared health IT infrastructure to meet state health and equity goals. Without continued financial investments, Colorado will lose ground on important health and social initiatives such as improved care coordination, connectivity for rural providers, and expanded virtual and remote health services.

Health IT infrastructure that supports a holistic view of health needs to be funded by state agencies and partners engaged in meeting Coloradans' health and social needs. Resources from the American Rescue Plan Act could be combined across state agencies to fund infrastructure that can be leveraged by multiple state agencies and by providers, patients, and community-based organizations.

Sustainability over the next three years and beyond also depends on consistent funding from multiple sources, including fees charged to organizations and companies using the infrastructure. Dedicated state and local funding can be used to secure federal matching funds to further support and build necessary infrastructure. Incentives and value-based payments can be structured to reward providers and community partners that use technology to meet, support, or

complete preferred behaviors. Direct financial support will also be critical for engaging some providers and payers in creating a more holistic infrastructure, especially for providers in rural and underserved areas, community organizations that address social needs, and providers of home health and long-term services and supports.

This section describes funding needs and opportunities to advance the Roadmap goals (see Appendix 6 for best practices in other states and potential resources).

Recommendation: Develop equitable funding opportunities and incentives to increase capacity for residents, providers, and community partners to implement and adopt health IT, virtual and remote services, and other digital health solutions.

Colorado Opportunity: Some providers face additional hurdles to fully implement health IT solutions. For example, Federally Qualified Health Centers and Rural Health Clinics faced restrictive regulations prior to COVID-19 that limited the widespread use of telehealth, especially for primary care services, resulting in limited infrastructure upon which to build. Other providers, including dental practices and emergency medical services, were not eligible for federal incentives to adopt, implement, upgrade, and demonstrate meaningful use of certified electronic health record technology.[41] Many small providers, those in rural communities, and safety net providers are unable to participate in value-based payments — specifically reporting electronic clinical quality measures — or access relevant analytics, population health data, and clinical support to improve care due to the limitations of their electronic health records' capabilities.

The Office of eHealth Innovation and the Department of Health Care Policy & Financing are leveraging federal matching funds for a Rural Connectivity Program that covers the initial implementation and ongoing adoption costs of using health information exchange networks as well as custom analytics to support value-based payment for Critical Access Hospitals and Certified ural Health Clinics. This time-limited program could provide a template for longer-term sustained funding support for these providers.

Recommendation: Ensure equitable financial support and incentives are available so that all providers delivering health-related services to Coloradans in-person or virtually can establish and maintain bi-directional connections to one of Colorado's two health information exchanges.

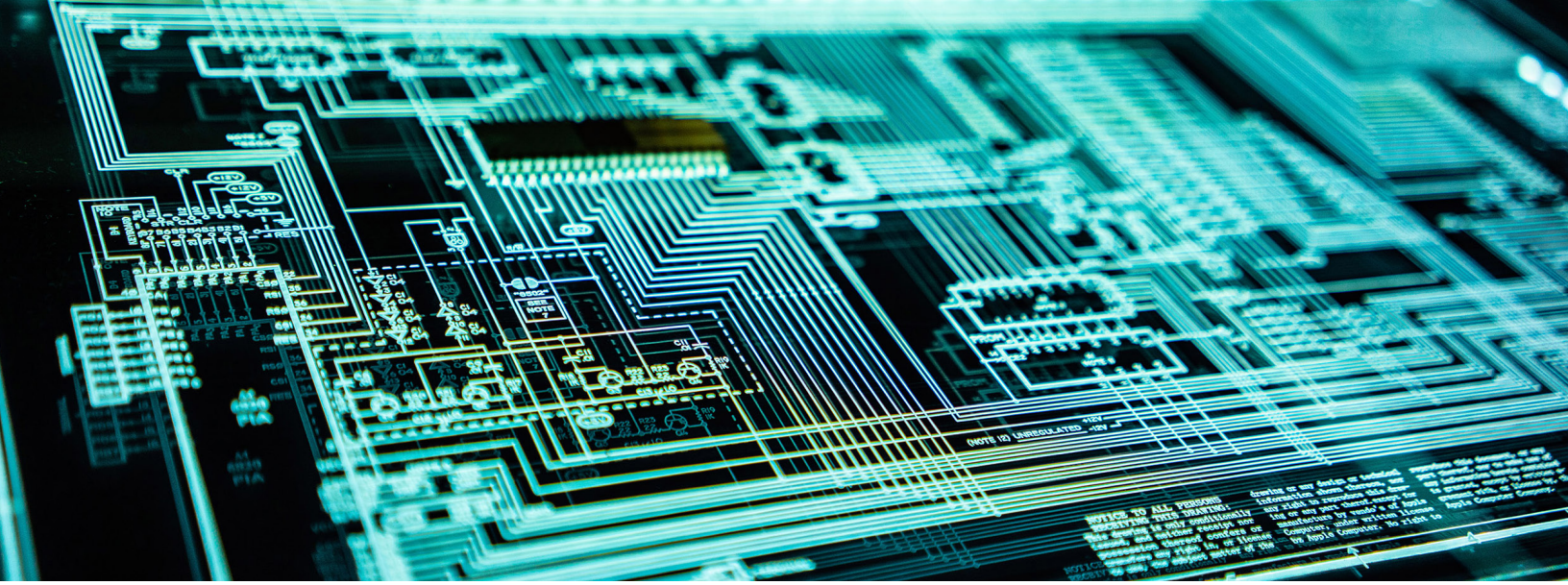
Colorado Opportunity: Supporting every provider (including those delivering virtual and remote care) to connect to a health information exchange ensures needed data and information are available to advance high-quality, whole-person care. However, rural and small providers need affordable options to connect with a health information exchange, financia support and incentives to maintain these connections, and training for staff to integrate this information into daily operations. Health First Colorado is implementing approaches that pay providers for delivering high-quality care at lower costs. These include the value-based Hospital Transformation Program, which aligns payment to hospitals with improved health outcomes, member experience, and a reduction in avoidable hospitalizations, and the Alternative Payment Model for Primary Care which rewards primary care medical providers for improved health outcomes.[42] Facilitating reporting for these programs through a health information exchange is efficient for providers and ensures needed data are available to support quality care.

41 Centers for Medicare & Medicaid Services. Promoting Interoperability Programs. https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms?redirect=/ehrincentiveprograms/30_meaningful_use.asp. Accessed August 13, 2021.

42 Colorado Department of Health Care Policy & Financing. Affordability Toolkit. https://hcpf.colorado.gov/sites/hcpf/files/Alternative%2 Payment%20Model%20Fact%20Sheet.pdf. Accessed July 16, 2021.

Recommendation: Partner across state agencies to braid and secure combined resources to develop, implement, and maintain core information services and other Roadmap initiatives that meet their business needs and priorities.

Colorado Opportunity: State agencies seeking to address the same goals and meeting similar needs should partner in shared solutions. The core information services in the 2021 Roadmap were identified by stakeholders as among their highest priorities to meet their business needs and address patients' concerns. Contributing state and federal funding from across state agencies will increase the resources available to develop, implement, and ultimately scale effective multi-agency solutions. It will also secure commitment to adopting these services. Establishing an annual state health IT appropriation that can be supplemented or matched by federal and local resources or non-governmental funding provides a base commitment to ensure Colorado's business needs are met. Resources from the Department of Health Care Policy & Financing and the Department of Human Services, for example, could support the continued development



and use of identity and consent management services, which would meet shared goals for ensuring coordinated care. The Department of Regulatory Agencies, including the Division of Insurance, Behavioral Health Administration, and the Department of Public Health and Environment can all use a master provider directory, for example, to meet their unique business needs. Lastly, Colorado can also harness unprecedented amounts of federal funding becoming available to invest in critical public health data infrastructure, with a focus on aligning with existing health IT infrastructure and shared information services, to support sharing of information with Coloradoans, providers, and local public health agencies.

Recommendation: Identify non-governmental funding sources to maintain and expand shared information services and other Roadmap initiatives that meet state and community business needs and priorities.

Colorado Opportunity: Continuing to maintain and expand the shared information services available in Colorado will require multiple and diverse funding streams from government and non-governmental users. This could include financial support from providers, private payers, employers, and community and philanthropic organizations. Key to establishing these funding sources is ensuring that shared services are cost effective and provide value to these potential users to meet their business needs and merit financial support. For example, payers may be willing to finance shared information services that support and enable provider quality reporting or participation in value-based payments. Employers may pay for shared information services that enable their employees to better access cost and quality information when seeking care. Utilization fees could be a per-transaction fee or a per-member, per-month fee. An equitable fee structure that places financial responsibilities on entities that benefit financially from the service (which may differ from those who use the services) is essential when taking these next steps. Identifying philanthropic or other non-governmental funding is another strategy to ensure equitable access for community-based organizations.

As the Office of eHealth Innovation and the eHealth Commission prioritize and oversee the process of design and implementation of many recommendations, they must consider public-private partnerships as well as how the Office of eHealth Innovation can continue to steward and accelerate the work. Creating a cohesive framework that identifies current public and private sector resources can avoid duplication as well as identify potential limitations or gaps in funding. Another consideration is identifying the necessary legislation and business agreements to secure additional and new funding to support ongoing innovation.

Stewarding the Work

This work is complex.

Accomplishing the Roadmap goals requires collaboration to align strategies, policies, funding, and technology in the service of shared goals such as affordability, reducing health disparities, and increasing access for under-resourced populations. Communities must be engaged and involved in developing these efforts to ensure their relevance and utility. Establishing governance will promote trust and a shared understanding across all partners as to how technical services will be used. The work must be monitored throughout implementation to ensure transparency and accountability.

Meeting these goals cannot be achieved by one organization or entity but must rely on public and private sector stewards who bring unique capabilities and expertise.

Stewards include the *Office of eHealth Innovation and the eHealth Commission*. Both bring deep knowledge and diverse insights and perspectives on leveraging IT to promote health and reduce health disparities.

Stewards also include s*tate agencies* that play critical roles, especially those promoting health and well-being, such as the Department of Health Care Policy & Financing, Department of Human Services, Department of Public Health and Environment, and the Department of Regulatory Agencies, as well as the newly forming Department of Early Childhood and Behavioral Health Administration. Along with the Governor's Office of Information Technology, these agencies already or can steward many of the efforts outlined in the Roadmap and foster alignment and efficienc .

Community partners are other important stewards in these efforts. Community partners, including local agencies as well as community members, providers, organizations, payers, and technical vendors, can offer pragmatic feedback on the benefits and limitations of services and solutions.

All these stewards are called upon to collaborate to drive the work forward in the service of shared goals. Some will need to assume leadership roles and have responsibility for seeing these activities to completion. Others will need to provide essential oversight, advice, and council. Stewards need adequate capacity and support to be successful in fulfilling these roles, which may change over time and as the work evolves. It is critical that each entity involved is clear about its role in the process.

Aligning Policy, Funding, and Services Decisions

State policies must reinforce or, in some cases, make explicit funding opportunities called for in the 2021 Roadmap. Policies and funding need to align and cooperate with technology services so that infrastructure is sustainable, and tools and data are available for all users. Intentional alignment of policies and funding ensures that technical solutions are built or modified to benefit users. Left unchecke and uncoordinated, technology solutions will develop to meet the siloed needs and requirements of their funding sources. This coordination is essential for developing quality products, ensuring that all stakeholders are cooperating with each other, and leveraging shared work.

Stewards' roles in aligning policy, funding, and services decisions

- *The Office of eHealth Innovation* has demonstrated leadership advancing Colorado's strategic health IT priorities and supporting systems integration across state agencies and community partners. It can align, integrate, and coordinate the policy,

funding, and technology investments for the state's health agencies through its close working relationships. As part of the Office s efforts, it can establish and jointly lead (with the eHealth Commission and Office of Information Technology) a technical architecture review committee for all state-funded health IT projects, ensuring alignment across state investments.

- The *eHealth Commission* brings broader perspectives to this work, including those of providers and community partners. The Commission plays a critical role ensuring strong alignment and synergy between these partners' efforts and those underway at the state level. Commissioners will prioritize activities with the Office of eHealth Innovation, using a tool that reflects the shared values and goals within the Roadmap (see Core Values and Objectives for the Work on page 23) and considers which potential activities promote and facilitate greater state and community alignment. Membership on the Commission should reflect the diverse perspectives and expertise needed to inform these efforts.

- *State agencies* must meet their business needs through these activities. They are critical advisors for detailing these needs and identifying strategies and solutions within their respective agencies that can be aligned with other agencies. eHealth Commissioners representing state agencies provide important context on agency efforts that can inform Commission discussion. State agencies' telehealth project dashboards are an example of how funding efforts can be aligned to achieve shared goals.

- *Community partners* are uniquely positioned to recognize misalignment between local and state efforts, such as when state policy and/or technology barriers threaten implementation of or participation in local programs.

Community Engagement

Health IT must serve the needs, goals, and preferences of Coloradans. It must be a pathway for greater access, not deepen existing disparities. Consumer voices must shape the work. This requires continual feedback between those who develop, use, and pay for the infrastructure to ensure that it remains relevant and valuable and is making a difference in people's lives. Community can be define broadly, including individuals as well as the organizations and providers who serve them.

Stewards' roles in community engagement

- The *Office of eHealth Innovation* supports these efforts through its continued facilitation of the Commission as well as direct collaboration and coordination across state agencies and with community partners.

- The *eHealth Commission* is a critical and effective body that offers structured opportunities for diverse private sector and *community partners* to engage with state and local agencies. All Commission meetings are open, recorded, and include time for public comment. One stakeholder interviewed for the Roadmap refresh called the Commission "a forum for organizations to have a voice, to listen to others, and to collaborate." The Commission is effective at incorporating voices from multiple stakeholders through its meetings and workgroups. These venues can ensure that values guiding these efforts are upheld, various views are considered, and Commissioners are made aware when additional or more directed engagement is needed. For example, during meetings Commissioners can solicit feedback from local partners on proposed Commission projects or learn about community activities. Recent efforts to invite community members and providers directly involved with Commission projects for dialogue is one opportunity to

continue to foster feedback and explore different perspectives. The Commission should prioritize efforts to engage with smaller community organizations or those with close connections to communities historically excluded from these discussions.

- *State and local agencies* often facilitate community engagement efforts, including agency-led advisory groups and stakeholder meetings. State agencies can work with the Commission and the Office of eHealth Innovation to leverage these existing opportunities for continued engagement and feedback on health IT and digital health efforts. County agencies work daily with community partners and individuals and can support feedback loops to bring in these valuable and needed perspectives.

Governance

Governance should document essential policies and protocols, roles, and responsibilities

on data ownership and data sharing, as well as privacy, security, standards, access, consent, and use. A systematic framework and approach to identifying and addressing data and information governance is essential for public and private health entities that may be encountering unnecessary barriers to accessing information. This framework must, at minimum, include policies governing the use of core information services. Lastly, governance builds and maintains trust among all partners by clarifying why data are being shared and how agreed-upon policies and procedures will be enforced and upheld.

Stewards' roles in governance

- The *Office of eHealth Innovation* and the *eHealth Commission* are already developing shared governance through its Statewide Health Information Governance Committee that can be built upon and expanded to address Roadmap goals and establish governance to meet state agency and community needs.

- Robust participation from *state agencies and local governments* through these processes ensures that governance meets their business needs and fiscal responsibilities. In addition to the Statewide Health Information Governance Committee, Colorado can leverage the work of the Government Data Advisory Board as well as the Joint Agency Interoperability project (co-led by the Department of Health Care Policy & Financing and Colorado Department of Human Services), which has already established processes for making "the right data available to the right person at the right time for the right reason."[43]

- *Community partners* need to easily access and understand governance policies and procedures and their roles in enforcing and implementing them. As the frequent holders or collectors of these data, community partners' needs and concerns must inform and be addressed through governance. Policies and procedures must accommodate varying levels of technical expertise as well, which community partners can inform.

Operationalizing Policy, Funding, and Services Decisions

Putting the 2021 Roadmap recommendations into practice requires bills to be introduced, regulations to be written, contracts to be executed, and services to be developed. Operationalizing these decisions will differ based on the type of work.

Stewards' roles in operationalizing policy, funding, and services decisions

- The *Office of eHealth Innovation* can offer venues for investing in innovative solutions that hold promise and promote policy solutions at the state level. With strategic support from the *eHealth Commission*, it can advise state agencies on their implementation efforts. It may also embed staff within departments as needed to provide additional capacity and support.

- The *eHealth Commission*, through its monthly meetings and cross-sector work groups, can define new strategies fo advancing these activities using a tool and decision-making process that upholds core values (see Core Values and Objectives for the Work on page 23). Work groups will also use a similar process for refining existing Roadmap initiatives that are already being implemented to ensure close alignment with 2021 Roadmap goals and priorities.

- *State agencies* are responsible for implementing efforts on behalf of their agency and in the service of meeting Colorado's shared goals of affordability, access, and equity. Agencies can advance processes, policies, and regulations, as

43 Colorado 2020-2022 Interoperability Strategic Plan. December 2020.

well as direct funding to solutions and paying for outcomes that support state priorities. For example, the Department of Health Care Policy & Financing is uniquely positioned to leverage federal funding to develop reusable technical solutions that can meet multiple state agency needs.

- *Community partners*, especially innovators, technical partners, and providers, develop and implement services in response to state and local needs. Partners can also be very influential in developing and informing core information services such as consent management. Colorado's innovator and entrepreneur community partners can serve as key collaborators in defining and leading Colorado's Innovation Resource Center. For example, Prime Health, through its focus on health equity and the safety net innovation, or the Colorado Rural Health Center are uniquely positioned to leverage funding not readily accessible by providers and community organizations or allowable by state agencies.

Monitoring for Accountability

Careful and transparent monitoring of all funded activities associated with the 2021 Roadmap will ensure that core values are upheld and goals are met. A core measure of accountability is the extent to which activities are advancing equity, reducing health disparities, improving health outcomes, and promoting affordability and access with outcomes-based results. Accountability also includes fiscal responsibilit , so that technical projects are completed on time, on budget, and meet specified requirements. Contractors and technical partners also need adequate resources and flexibility to achieve the intended outcomes, such as multi-year funding commitments when meeting agreed-upon milestones and outcomes.

Stewards' roles in monitoring for accountability

- The *Office of eHealth Innovation* leads these efforts through effective collaboration and project and contract management that keeps the big picture goals in mind while meeting deadlines. This requires coordinating between partners, providing financial support for the work, and ensuring end users are getting what they need.

- The *eHealth Commission* provides counsel to the Office of eHealth Innovation and state agencies to ensure accountability to communities. The multi-stakeholder Commission can recommend funding priorities using established criteria based on shared goals, values, and business and programmatic needs.

- *State agencies* oversee the implementation and operation of state and federal policies and needed technical development, collaborating with contracted vendors and community partners as well as with the Office of eHealth Innovation. *Community partners* play multiple roles. Some technical partners and vendors will be developing tools and solutions and are responsible for being good stewards of the resources entrusted to them for these efforts. Other partners implementing and using the tools and solutions can provide the greatest insights on projects' successes and shortcomings. State agency and community partner input is critical for overall accountability. Developing a shared understanding of accountability and soliciting how each agency and community partner wants to steward this important work can be a next step.

Evolving the Work to Meet Future Needs

Stakeholders engaged in refreshing the Roadmap repeatedly called for focusing on the basics of implementing policies, securing equitable funding, and promoting usable shared solutions if Colorado wants to truly meet its goals of affordability, access, and equity. This Roadmap lays out the policy, service, and funding recommendations to make progress on these goals in the next three years.

At the same time, Colorado must evolve these efforts if the state is to harness health IT for the good of all Coloradans. This includes continuing to advance and expand core information services and remove barriers to using them by establishing a single secure connection point through which an authorized state agency, provider, payer, community partner, or patient can access information.

Establishing a single protected gateway offers quick and easy access to health and health-related data so that access to data becomes a means to an end — meeting the needs of communities and patients — and not the end in itself.

Technical solutions can be found when there is agreement on the vision, strategy, and desired outcomes for achieving shared health priorities and goals. The Office of eHealth Innovation must lead efforts to build consensus for the vision and continue to steward and facilitate discussions and projects that advance health priorities through shared technical infrastructure, policy, and innovation. Achieving the activities in the 2021 Roadmap will provide a strong foundation upon which to set this future course.

APPENDIX 1:

Participating Organizations and Individuals

The following individuals, agencies, and organizations participated in the 2021 Roadmap refresh process through interviews, presentations, listening sessions, and public comments. eHealth Commissioners are noted with a (*) and eHealth Advisors with (**).

AFL Enterprises
AllHealth Network
America's Health Insurance Plans
Annie Harrington, Colorado Regional Health Information Organization/Contexture**
Antonio Martinez, Colorado Broadband Office*
Arizona Medicaid
Art Davidson, Denver Health and Hospital Authority*
Aspen Valley Hospital
Axis Health System
Boulder Community Health
Care On Location
Center for Improving Value in Health Care
Centura Health System
Chris Underwood, Colorado Department of Health Care Policy & Financing*
Chris Wells, Colorado Department of Public Health and Environment*
Colorado Access
Colorado Center on Law and Policy
Colorado Commission of Indian Affairs
Colorado Community Health Network
Colorado Department of Health Care Policy & Financing
Colorado Department of Human Services
Colorado Department of Insurance
Colorado Department of Public Health and Environment
Colorado Department of Regulatory Agencies
Colorado Hospital Association
Colorado Joint Agency Interoperability
Colorado Multi-Payer Collaborative
Colorado Office of Information Technology
Colorado Regional Health Information Organization/ Contexture
Colorado State Medical Assistance and Services Advisory Council
David Mok-Lamme, Rocky Mountain Health Plans*
Denver Health and Hospital Authority
Eastern Plains Healthcare Consortium
Gunnison Valley Health
HCA Healthcare
Health Current
Health Solutions
High Plains Community Health Center
Jason Greer, Colorado Community Managed Care Network**
Jason McRoy, Quality Health Network**
Jeffrey Nathanson
Kaakpema (KP) Yelpaala, InOn Health*
Kaiser Permanente Colorado
Kate Kiefert-Ricker
Kevin Stansbury, Lincoln Community Hospital*
Mental Health Partners
Michael Archuleta, Mt. San Rafael Hospital*
Michelle Mills, Colorado Rural Health Center*
Mile High Health Alliance
Mona Baset, SCL Health*
North Range Behavioral Health
Perry May, Colorado Department of Human Services*
Phil Rico, Mayor of Trinidad, Colorado
Physician Health Partners
Pioneer Hospital
Primary Care Partners
Pueblo Community College
Quality Health Network
Rachel Dixon, Prime Health*
Representatives of the Colorado Medicaid Member Experience Advisory Council
Rocky Mountain Health Plans
Sophia Gin, Cigna*
Start Talking
Summer Gathercole
Tri-County Health Department
University of Colorado Anschutz Medical Campus
University of Denver
Valley View Hospital
Wes Williams, Mental Health Center of Denver*
Western Healthcare Alliance

APPENDIX 2:

Health Information Exchange in Colorado

In 2004 and 2005, Colorado was an early pioneer in the field of health information exchange (HIE). Quality Health Network started in 2004 as a regional exchange on the Western Slope. In 2005, the Colorado Health Information Exchange (COHIE) began. COHIE was developed under the leadership of Dr. Art Davidson and funded through a $5 million contract with the Agency for Healthcare Research and Quality. These efforts were the forerunners of many of Colorado's current health information capabilities.

Colorado's current HIE landscape consists of state, regional, and local stakeholders exchanging health information through two geographically dispersed providers: CORHIO and the Quality Health Network. CORHIO (which originated from COHIE) covers most of the state, while Quality Health Network provides service to Colorado's Western Slope.

On November 8, 2017, the eHealth Commission voted to accept delivery of the Health IT Roadmap and recommend to the Governor's Office that the oadmap be implemented. This Roadmap included 16 initiatives across six domains. One initiative (Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado) sought to develop and implement approaches to harmonize data sharing capabilities, increase the rate of health information sharing, and advance health information exchange across Colorado.

In 2018, Commissioners were asked to prioritize Roadmap Initiatives for funding and staff support. The highest priorities were Harmonizing Data Sharing and HIE Exchange (Advancing HIE) and Support Care Coordination.

Under the direction of a Commission-led, multistakeholder work group, the Advancing HIE initiative received $4.5 million in funding for a five-year work plan. ast and current funded projects include Improved Data Access for Priority Providers, Terminology Services, Medication History Planning, Electronic Lab Reconciliation, Integration of the Prescription Drug Monitoring Program, Single Sign-On Across Systems, and Trigger-based Notification Projects. These projects improve the quality, consistency, and type of data included in Colorado's HIEs.[44]

44 Content in Appendix 1 is from Colorado's 2019 Health IT Roadmap, Colorado's 2016 Implementation Advanced Planning Document Update, and eHealth Commission materials.

APPENDIX 3:

Developing Social-Health Information Exchange

The Social-Health Information Exchange (S-HIE) infrastructure is envisioned as a person-centered network that includes a robust statewide resource directory, interoperable platforms for referral and care coordination, and functionality to track connections and outcomes. The Office of eHealth Innovation and the eHealth Commission are committed to the development of a flexible and interoperable S-HIE infrastructure that supports coordinated whole-person care across the physical, social, and behavioral health domains.

In 2018, a group of governmental, health care, public health, philanthropic, and community-based partners published the first white paper on Social-Health Information Exchange, emphasizing the importance of planning for a statewide infrastructure and recommending ways for these sectors to work together. Advancing a Coordinated Ecosystem for a Social-Health Information Exchange (S-HIE) in Colorado, was published in 2021, reiterating the need for core components for S-HIE infrastructure and highlighting key considerations for moving statewide S-HIE collaborative efforts forward.

Today, the Office of eHealth Innovation and the eHealth Commission is supporting projects to develop technical solutions that share core components, data standards, and common practices for the meaningful exchange of social and health information. The Office is working with three technical partners — Colorado Community Managed Care Network (CCMCN), Colorado Regional Health Information Exchange Organization (CORHIO), and Quality Health Network (QHN) — to implement projects statewide. Key activities already referenced in the 2021 Roadmap include a flexible and interoperable care coordination ecosystem, community resource inventory, population-level analysis, and referral tools to improve decision making for care coordination. CCMCN is leading efforts to create an interoperable ecosystem that supports whole-person care coordination through Social-Health Information Exchange. In addition, the Care Coordination Information Governance Task Force is focused on adoption of open standards and developing Colorado-specific policies for information governance to direct the exchange of data for screening, referral, and care coordination.

Future work needed to advance these efforts include discussion and definitions of criteria for a Social-Health Information Exchange. The Office of eHealth Innovation led similar work in 2018, defining criteria for Health Information Exchanges that was voted on and approved by the eHealth Commission.[45]

45 Content in Appendix 3 is from the Office of eHealth Innovation's website and related S-HIE publications. https://oehi.colorado.gov/oehi-projects/care-coordination.

APPENDIX 4:

National Best Practices and Examples: Policy Solutions

- Kentucky's Office of Health Data and Analytics is an agency within the Cabinet for Health and Family Services. It was created in 2018 and includes four divisions — Health Benefit Exchange, Health Information (which oversees the Kentucky Health Information Exchange), Analytics, and Telehealth Services. The Office also manages a program that develops policy, resources, and education for privacy best practices for the entire Cabinet.[46]
- California's Office of Health Information Integrity is responsible for statewide leadership, coordination, policy formulation, direction, and oversight for all departments' compliance with the Health Insurance Portability and Accountability Act. It also collaborates with other organizations to develop California's State Health Information Guidance to clarify federal and state laws that affect disclosure and sharing of health information.[47]
- Michigan's Department of Health and Human Services created a standard consent form to authorize the sharing of health information specific to behavioral health and substance use treatment. All providers are required to accept and honor the form.[48]
- The National Association of State Chief Information Officers estimates that about a quarter of states have a stand-alone chief privacy office [49] These offices (or individuals) typically develop statewide privacy policies, ensure adequate training, and evaluate technology for compliance. They also ensure accessibility of publicly available information.[50]
- The Michigan Health Information Network (MiHIN) requires and incentivizes all participating HIE Qualified Data Sharing Organizations to adopt and use query and data standards as part of their participation agreement. Furthermore, MiHIN requires organizations participating in specific use cases requiring data sharing to follow additional standards.[51]
- Arizona's Medicaid agency, known as the Arizona Health Care Cost Containment System, offers a Differential Adjusted Payment to registered providers who participate in Arizona's health information exchange (HealthCurrent) and meet quality and reporting milestones. The program also includes an expanded payment for providers participating in

46 Kentucky Cabinet for Health and Family Services. Office of Health Data and Analytics. https://chfs.ky.gov/agencies/ohda/Pages/default.aspx. Accessed August 11, 2021.

47 California Health & Human Services Agency. California Office of Health Information Integrity. https://www.chhs.ca.gov/ohii/. Accessed August 11, 2021.

48 Michigan Department of Health & Human Services. Michigan Behavioral Health Standard Consent Form. https://www.michigan.gov/mdhhs/0,5885,7-339-71550_2941_58005-343686--,00.html. Accessed August 13, 2021.

49 NASCIO. The Agile State CIO: Leading in a time of uncertainty. 2020 State CIO Survey. https://www.nascio.org/wp-content/uploads/2020/10/2020-State-CIO-Survey.pdf.

50 Bergal, J. More States Appoint 'Chief Privacy Officers to Protect People's Data. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2018/08/21/more-states-appoint-chief-privacy-officers-to-protect-people-data. August 21, 2018.

51 MIchigan Health Information Network Shared Services. HIE Qualified Organization Application Guide. Version 1.0. https://mihin.org/wp-content/uploads/2018/04/MiHIN-HIE-QO-Application-PDF-version-1.pdf.

social determinants of health referrals.[52]

- The Indiana Health Information Exchange (IHIE) is integrating social determinants of health data into its network from existing data sources such the Centers for Disease Control and Prevention, state agencies, U.S. Census Bureau, and other sources. IHIE recognized that providers and systems are continuing to adopt standards for collecting and reporting these data yet need them today. Through the Indiana Network for Population Health, IHIE has brought these data into its health information exchange services from these other sources.[53]

- The Office of the National Coordinator has developed a standardized set of health data classes and data elements for nationwide use to promote health information exchange. These elements are known as the United States Core Data for Interoperability.[54] This includes code sets for a wide range of care and services, from advance directives and treatment planning to medications and immunizations. Efforts are underway to develop standards for collecting and sharing social data, including through the Gravity Project, a national public collaborative.[55] The Open Referral Initiative is another network of individuals and organizations working to promote accessibility of community resource data by offering data specifications and tools without cost for anyone to use.[56] These available and widely agreed upon standards can facilitate sharing of social needs data.

- The federal 2021 infrastructure bill could transform access to broadband across the country. The U.S. Senate approved a measure that allocates $65 billion to expand access to high-speed internet and requires private companies to publish details about their services. It also provides guardrails to states as to how the funds can be used for building out grants and digital inclusion programs. The bill still needs to clear the U.S. House of Representatives and may undergo changes during that negotiation process.[57] The Emergency Broadband Benefit rogram offers a one-time discount of up to $100 for a laptop, tablet, or desktop computer for income-qualified households.[58] The pending infrastructure bill would transform this program into the Affordable Connectivity Benefit, providing income qualified and Tribal households with one-time discounts for devices as well as monthly discounts on services.

52 Differential Adjustment Payment Program and Health Information Exchange. https://healthcurrent.org/programs/ahcccs-programs/differential-adjusted-payment-dap-program/. Accessed September 12,2021.

53 Regenstrief Institute. Indiana Network for Population Health focuses on social determinants of health. April 20, 2020. https://www.regenstrief.org/article/indiana-network-for-population-health-social-determinants-of-health/.

54 Office of the National Coordinato . United States Core Data for Interoperability. https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi. Accessed July 16, 2021.

55 The Gravity Project. https://thegravityproject.net/. Accessed July 22, 2021.

56 Open Referral. https://openreferral.org/. Accessed August 10, 2021.

57 Schlesinger, J. and Tracy, R. U.S. Government Wants a Greater Role in How Americans Access Internet. Wall Street Journal, Published on August 11, 2021. https://www.wsj.com/articles/u-s-government-set-for-greater-role-in-how-americans-access-internet-11628674423

58 Federal Communications Commission. Emergency Broadband Benefit https://www.fcc.gov/broadbandbenefi . Accessed August 12, 2021.

APPENDIX 5:

National Best Practices and Examples: Services

- New York's Statewide Health Information Network (SHIN-NY) connects regional networks to allow participating providers (with patient consent) to share data. This network offers core services across the state, including a master patient index that facilitates statewide patient record lookup.[59]

- Massachusetts' health information exchange (Mass HIway) offers a directory for organizations to find information on providers and organizations with whom they need to exchange data. This service includes information on provider type, specialty, credentials, and service locations.[60]

- OneHealthPort (the health information exchange serving Washington state) operates a statewide Provider Data Service. It gathers all information that health plans and hospitals request from providers for credentialing and is integrated into health information exchange. Offered to all providers free of charge, this service originated from a 2009 state law establishing a statewide data collection process for credentialing and privileging data to reduce provider burden and ease access to data for health plans and hospitals.[61]

- North Carolina's NCCARE360 is a system that unites health care and human services organizations with a shared technology that enables a coordinated, community-oriented, person-centered approach for delivering care. NCCARE360 has leveraged the 2-1-1 system to construct a single community resource inventory for North Carolina.[62]

- The San Diego Community Information Exchange uses a central, standardized listing of services offered by health, human, and social services providers plus eligibility and intake information so that individuals can be efficiently matched with appropriate services.[63] Partners within the Community Information Exchange use a shared language and an integrated technology platform along with the resource database to deliver enhanced community care planning.

- The Southwest Telehealth Resource Center assists Health Resources and Services Administration grantees, including Rural Health Clinics and Federally Qualified Health Centers located in Colorado, in establishing or expanding telehealth programs. It provides a comprehensive resource inventory of trusted information and issues ranging from policy and sustainability to form templates and the Telehealth Talk monthly podcast.[64]

59 New York eHealth Collaborative. SHIN-NY Services. https://www.nyehealth.org/shin-ny/shin-ny-services/. Accessed July 23, 2021.

60 The Massachusetts Health Information Highway. Provider Directory 2.0. https://www.masshiway.net/Resources/Provider_Directory_2_0. Accessed July 23, 2021.

61 OneHealthPort. Credentialing. https://www.onehealthport.com/credentialing-overview. Accessed August 15, 2021.

62 NCCARE360. https://nccare360.org/ Accessed July 23, 2021.

63 Community Information Exchange. https://ciesandiego.org/. Accessed July 22, 2021.

64 Southwest Telehealth Resource Center. https://southwesttrc.org/about-us. Accessed August 13, 2021.

APPENDIX 6:

National Best Practices and Potential Resources: Funding

- Maryland requires state-regulated insurance companies to provide incentives for adopting electronic health records. A qualified provider must meet certain requirements, including current federal meaningful use standards or participation in a patient-centered medical home program. Eligible providers receive payment based on the number of patients enrolled in a fully insured health benefit plan assigned to the provide , up to $15,000 per practice per insurer.[65]

- Connect Washington Coalition is a collaborative working to increase digital access for Black, Indigenous, Communities of Color, low-income communities, students, and elders. It is proposing a $6 million+ initiative for affordable broadband and devices as well as skills training, technical support, and community-driven data collection.[66]

- Maryland requires hospitals to connect to the Chesapeake Regional Information System (CRISP), the state's health information exchange, to measure performance on readmissions. Hospitals, public health departments, and ambulatory providers have access to CRISP Reporting Services, a set of monthly reports that analyze hospital trends and utilization. These quality reports are used to determine payments from the shared savings program.[67]

- Michigan Health Information Network (MiHIN), the state's information exchange that connects regional networks, is funded through a blend of state contracts and subscription fees and contributions from private payers.[68] It offers a Use Case Factory that includes 38 use cases in three categories (care coordination, consumer engagement, and infrastructure). A fully defined use case outlines the specific purpose, type of data exchanged, rules for interactions between people and systems, the specific business, technical, and legal framework required to share the type of information addressed by the use case, and the cost recovery fees.[69] Health information exchanges in other states, including Maryland and Arizona, assess dues and fees on hospitals and/or health plans to support their services.

A range of federal funding resources may be available to states for investing and maintaining health IT and infrastructure (see Table 2).[70,71,72]

65 Maryland Health Care Commission. EHR State Incentive Program. https://mhcc.maryland.gov/mhcc/pages/hit/hit_ehr/hit_ehr_state_incentive.aspx. Accessed August 13, 2021.

66 Connect Washington. https://connect-wa.org/. Accessed August 29, 2021.

67 Health Tech Solutions. (2021). Designing a Statewide Health Data Network: What California Can Learn from Other States, p. 15.

68 California Health Care Foundation. Expanding Payer and Provider Participation in Data Exchange: Options for California. November 2019. https://www.chcf.org/wp-content/uploads/2019/11/ExpandingPayerProviderParticipationDataExchange.pdf.

69 Michigan Health Information Network. Use Case Factory. https://mihin.org/use-case-factory/. Accessed August 14, 2021.

70 California Health Care Foundation. Designing a Statewide Health Data Network: What California Can Learn from Other States. https://www.chcf.org/publication/designing-statewide-health-data-network-california-learn-other-states/. February, 12, 2021.

71 Colorado Health Institute. American Rescue Plan Act Financial Map.https://www.coloradohealthinstitute.org/research/american-rescue-plan-act-financial-ma . July 11, 2021.

72 HealthTech Solutions (HTS) LLC, October 2021. HTS provided the information in Table 2.

Table 2. Potential Federal Funding Opportunities That Could Be Leveraged for Health IT and Infrastructure, 2021

Source	Federal Match	Federal Funding Available or Allocated	State-Based Entity Eligible to Receive Funds or Initiative
Centers for Medicare & Medicaid Services (for Medicaid-related services)			
Medicaid Enterprise Systems Projects	90%[73]	No Set Amount	Department of Health Care Policy & Financing
Medicaid Enterprise Systems Maintenance and Operations	75%	No Set Amount	Department of Health Care Policy & Financing
Medicaid Program Administration	50%	No Set Amount	Department of Health Care Policy & Financing
American Rescue Plan Act			
Coronavirus State and Local Fiscal Recovery Funds (Section 9901)	100%	$5.8 Billion for Colorado[74]	State, counties, cities, and coronavirus capital projects
Administration for Community Living (2921)	75% or More	$21 Million for Colorado[75]	Colorado Department of Human Services
Elementary & Secondary School Emergency Relief Fund (2001)	100%	$1.2 Billion for Colorado[76]	K1-12 Schools
Public Health (2301, 2401, and 2501)	100%	$311 Million for Colorado[77]	Colorado Department of Public Health & Environment
Home and Community Based Services (9817)	66%[78]	No Set Amount	Department of Health Care Policy & Financing[79]
Substance Abuse and Mental Health Services Administration (2701 and 2702)	100%	$51 Million for Colorado[80]	Colorado Department of Human Services
Health Resources & Services Administration (2601)	100%	$133 Million for Colorado[81]	Federally Qualified Health Center
Administration for Children & Families (2201 and 2202)	100%	$465 Million for Colorado[82]	Colorado Department of Human Services
U.S. Department of Housing and Urban Development (3201)	100%	$109 Million for Colorado[83]	Cities and towns
U.S. Department of Agriculture (1002, 1101, 1102, and 1106)	75% or More	$2 Billion Nationally[84]	Rural healthcare, supplemental nutrition assistance, SNAP and WIC technology improvements
Substance Abuse and Mental Health Services Administration (2706 and 2707)	100%	$80 Million Nationally	Local substance use and behavioral health needs
U.S. Office of Community Services (2911)	100%	$2.3 Billion Nationally	Energy assistance for low-income households
Federal Communications Commission Emergency Connectivity Fund (7402)	100%	$7.1 Billion Nationally	Emergency educational connections and devices
U.S. Departments of Health and Human Services and Veterans Affairs (8004, 9101, and 9301)	65% or More	$1.2 Billion Nationally	Construction of state homes, home visiting programs, and disability/adult social services
Indian Health Service (11001)	100%	$6 Billion Nationally	$140 million earmarked for information technology, telehealth infrastructure, and electronic health records
Other			
2021 infrastructure bill (pending passage)	100%	$65 Billion (Broadband), $2 Billion (Cybersecurity) Nationally	$42.5 billion as formula grants to states to include internet service providers and residents

Sources for Table 2

73 42 C.F.R. 433.15

74 Retrieved 10/19/21 at https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments

75 Retrieved 10/19/21 from https://acl.gov/sites/default/files/about-acl/2021-05/FY%202021%20ARP%206%20 rograms%204-30-21%20Values%20Only%20version%202.pdf

76 Retrieved 10/19/21 from https://oese.ed.gov/offices/american-rescue-plan/american-rescue-plan-elementary-and-secondar - school-emergency-relief/

77 Retrieved 10/19/21 from https://www.cdc.gov/budget/fact-sheets/covid-19/funding/index.html

78 Retrieved 10/19/21 from https://www.medicaid.gov/federal-policy-guidance/downloads/smd21003.pdf

79 Details on the spending plan approved by the Joint Budget Committee are available at https://hcpf.colorado.gov/arpa.

80 Retrieved 10/19/21 from https://www.samhsa.gov/sites/default/files/fy21-american-rescue-plan.pd

81 Retrieved 10/19/21 from https://bphc.hrsa.gov/program-opportunities/american-rescue-plan/awards

82 etrieved 10/19/21 from https://www.acf.hhs.gov/occ/data/arpa-supplemental-stabilization-and-ccdf-discretionary-funding-allocation-tables-states

83 Retrieved 10/19/21 from https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-

84 Retrieved 10/19/21 from https://www.usda.gov/arp