



Colorado's Health IT Roadmap

December 2019

The development of the *Colorado Health IT Roadmap* was a collaborative effort of the Office of eHealth Innovation, eHealth Commission, and Mosaica Partners – with extensive participation and contributions by members of Colorado’s health care community.

Thank you to all who participated.



COLORADO

Governor Jared Polis

December 2019

Dear Colorado Health Care Stakeholders,

Colorado is leading the way in providing care that is more affordable, more valuable, and more accessible to our citizens. This bold work, led by innovative providers, progressive insurance payers, engaged and visionary non-profit organizations, digital health community, and groundbreaking research enterprises ensures Coloradans receive the care they need and do not go bankrupt in the process. Colorado is recognized as one of the nation's top five digital health innovation communities in the Nation and actively participates in transforming health in Colorado. The Polis-Primavera Administration appreciate the collaboration and endorse Colorado's Health IT Roadmap and the initiatives described in this document as the State's Health IT strategy.

Despite the availability of electronic health records, critical health information is siloed and not available when individuals and their clinicians need it most. Colorado's Health Information Exchanges- Colorado Regional Health Information Organization and Quality Health Network help bridge that gap and offer a necessary utility for clinicians and payers to ensure care is coordinated.

To that end, this Administration understands how access to trusted health information as highlighted in [Colorado's Health IT Roadmap](#) directly supports and advances the Governor's priorities. The Office of eHealth Innovation and the eHealth Commission developed this strategic plan with input from stakeholders from individuals in rural, urban, and frontier communities. This work continues to move forward and the administration proudly supports the work of the Office of eHealth Innovation (OeHI) and the eHealth Commission. The efforts to pull in stakeholders from across state agencies, community organizations, digital health, and individuals is exactly the broad conversations that need to occur to create profound and lasting change.

As the State moves forth policy to reduce health care costs and improve health for Coloradans, the Governor and Lt. Governor are relying on OeHI and the eHealth Commission to continue the planning, design, and implementation of this work and for State Agencies to align with this important work. When implemented, the results of these initiatives will provide an expanded, more robust foundation supporting Colorado in achieving its health reform goals. The Colorado Health IT Roadmap provides a framework and direction to guide the state's efforts and ensure Colorado has the health information technology (HIT) ecosystem necessary to support its ambitious health care reform efforts.



The Governor and Lt. Governor would like to thank the eHealth Commission, the Office of eHealth Innovation, and the numerous Coloradans who have actively participated in the development, planning, and implementation of this Roadmap. Thank you for taking the time to read this important document and for considering how you can help us to innovate and reach further heights.

Sincerely,

A handwritten signature in blue ink that reads "Jared Polis".A handwritten signature in blue ink that reads "Dianne Primavera".

Lt. Governor



Colorado has long been nationally recognized for promoting the health and well-being of its residents. The Polis-Primavera Administration recognize the importance of leveraging health information technology (health IT), digital health innovation, and data sharing to *save people money on health care* and to support health in Colorado's communities.¹

The Office of eHealth Innovation (OeHI), established in 2015 through executive order, coordinates investments and policies for health information technology infrastructure and data sharing across not-only state agencies but statewide to support the health of Colorado's communities and revolutionize health care. With the support of Governor Polis and Lt. Governor Dianne Primavera, OeHI's efforts continue boldly forward.

The same executive order established the eHealth Commission to provide advice and guidance to OeHI on advancing health IT in Colorado. The eHealth Commission was charged with supporting the implementation of the state's health IT strategy and interoperability objectives by setting goals for health IT programs and for creating a process for developing common policies and technical solutions.

The development of *Colorado's Health IT Roadmap* is one of the first large initiatives undertaken by OeHI and the eHealth Commission. OeHI partnered with Mosaica Partners, using Mosaica's proven approach, to assist in its development.

*Colorado's **GOAL** is to save people money on health care and support health in communities.*

The initial process engaged over 1,000 stakeholders in Colorado's health care community. These stakeholders were involved through interviews, workshops, a statewide survey, organizational briefings, and public forums. Stakeholder validation and input continues today and is embedded throughout Roadmap planning and implementation efforts. As a result of this broad collaborative involvement, this *Roadmap* truly represents Colorado and evolves overtime.

The 16 initiatives recommended in this *Roadmap* provide guidance and direction for Colorado's health IT efforts. When implemented, the results of the initiatives will provide an expanded, more robust foundation supporting Colorado in achieving its health reform goals.

The *Colorado Health IT Roadmap* provides a flexible framework and a direction to guide the state's health IT efforts and ensure Colorado has the health IT infrastructure and environment necessary to support its ambitious health care reform efforts in 2019 and beyond.

¹"Office of Saving People Money on Health Care Roadmap" April 2019. Accessed November 2019 at <https://www.colorado.gov/governor/sites/default/files/inline-files/RoadMapDoc-3.pdf>

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BACKGROUND

Colorado Health IT Activity

Colorado has a long and pioneering history of forging new frontiers. Leading in health and health information technology (health IT) is no exception.

Polis-Primavera Administration- Wildly Important Goals for Health Care

In February 2019, Governor Polis established an executive order for the Office of Saving People Money on Health Care and appointed Lt. Governor, Dianne Primavera as the Director. This was the first step for the Polis-Primavera Administration to reduce health care costs in Colorado.² The Polis-Primavera Administration recognized the importance of coordinated health information technology and data sharing initiated through the Office of eHealth Innovation (OeHI). OeHI continues to plan and implement Colorado's Health IT Roadmap in support of the Administrations' priorities.

The State of Health: Colorado's Commitment to Become the Healthiest State

In May 2013, Governor John Hickenlooper announced the administration's health policy agenda, *The State of Health: Colorado's Commitment to Become the Healthiest State*.³ This report notes Colorado's strengths – and weaknesses – in keeping Coloradans healthy and helping them to become healthier. It outlines eighteen (18) initiatives to help the state achieve its goals. The governor's health dashboard monitoring the state's progress is available online.⁴ The posting of quarterly metrics keep Colorado's leaders focused on achieving these health goals.

² "Office of Saving People Money on Health Care Roadmap" April 2019. Accessed November 2019 at <https://www.colorado.gov/governor/sites/default/files/inline-files/RoadMapDoc-3.pdf>

³ "The State of Health: Colorado's Commitment to Become the Healthiest State," May 2013. Accessed October 2017 at <https://www.cohealthinfo.com/wp-content/uploads/2014/08/The-State-of-Health-Final-April-2013.pdf>

⁴ State of Colorado Website. Governor's Dashboard webpage accessed October 2017 at <https://www.colorado.gov/governor/dashboard#Health>

Leadership in Health and Health IT

Colorado's health IT leadership is reflected in a nationally-ranked collection of hospitals and health systems. Year after year⁵ Colorado hospitals (and medical specialties) consistently rank in the "Top Ten" of *U.S. News and World Report* hospital rankings.

Colorado was early to recognize the contribution that health information technology could make to improving health and health care in the state.

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 \$5M contract with the Agency for Healthcare Research and Quality (AHRQ)⁶. These efforts were the forerunners of many of Colorado's current health information capabilities, including the Colorado Regional Health Information Organization (CORHIO) that serves Denver, the front range, and eastern Colorado.

Colorado's Digital Health Innovation Ecosystem

Colorado is recognized as having one of the nation's top ten communities for digital health innovation.⁷ In a 2017 study, *The Best States for Data Innovation*,⁸ Colorado was ranked 9th nationwide. Colorado ranked 1st in terms of ensuring that data is available for use, and in establishing laws and regulations that support health care price transparency.⁹

Colorado's digital health innovation community continues to thrive under the leadership of several local collaborations, services, and consortiums. With many events throughout the year, innovators and entrepreneurs gather to network, learn, and compete for prize money through "challenges." The "challenges" consist of specialized events and programs, focused on addressing some of Colorado's most difficult health problems. Many successful, new, digital health companies have sprung forth from these collaborations and competitions.

⁵ "U.S. News Announces 2017-2018 Best Hospitals," August 8, 2017. U.S. News & World Reports. Accessed October 2017 at <https://www.usnews.com/info/blogs/press-room/articles/2017-08-08/us-news-announces-2017-18-best-hospitals>

⁶ University of Denver Website. About Our Facility web page, Arthur Davidson. Accessed October 2017 at <http://www.ucdenver.edu/academics/colleges/PublicHealth/Academics/departments/Biostatistics/About/Faculty/Pages/DavidsonA.aspx>

⁷ Built In Colorado Website. "Why Digital Health is Colorado's Tech Next Big Thing," by Jess Ryan, February 29, 2016. Accessed October 2017 at <http://www.builtincolorado.com/2016/02/29/prime-health-colorado-digital-health-startups>

⁸ Center for Data Innovation Website. "The Best States for Data Innovation," by Daniel Castro, Joshua New, and John Wu, July 31, 2017. Accessed October 2017 at https://www.datainnovation.org/2017/07/the-best-states-for-data-innovation/?mc_cid=58eeb5964d&mc_eid=bcfcfd14f

⁹ Colorado SB 17-065, "Transparency in Direct Pay Health Care Prices. Accessed October 2017 at <https://leg.colorado.gov/bills/sb17-065>

This engaged and inspired innovation community is also partnering with state and local leaders to advance health care in Colorado and the nation. Colorado's digital health community is one of the top ten in the nation¹⁰, with over \$223M invested in Q3 2017, alone. Going forward, Colorado has a unique opportunity to focus these gifted resources toward solving its most pressing health challenges.

Health Reform in Colorado

Health reform initiatives continue in Colorado as the Health Care Policy and Financing (HCPF) agency (the State's Medicaid program, known as Health First Colorado), evolves their regional care collaborative organizations (RCCOs) into Regional Accountable Entities (RAEs).¹¹ These RAEs will integrate behavioral health and physical health services within regions.

Approximately one-in-four (over 1.4M) Coloradans are served by the State's Medicaid program. Colorado's annual Medicaid spend is over \$9B (\$3.5B of which come from State funds).¹² The State's other health insurers are a diverse group, with no one dominating the market.

Connect for Health Colorado

Under the Affordable Care Act (ACA), Colorado was one of 11 states (plus the District of Columbia)¹³ that implemented a successful, independent health insurance exchange – *Connect for Health Colorado*. As of September 2017, this health insurance exchange serves nearly 200,000 Coloradans.

According to a recently released survey by the Colorado Health Institute,¹⁴ Colorado is maintaining historic gains in expanding the numbers of those covered by health insurance; the 2017 rate of insured stands at 93.5%. Over five million Coloradans now have health insurance. Of those without health insurance, 78.4% cite cost as the reason. Access to affordable health care continues to be a primary focus for the State of Colorado.

¹⁰ Startup Health Colorado Website accessed October 2017 at <http://us2.campaign-archive.com/?u=7b5e9c627761550fb3157fdb9&id=f629a8379f&e=e02e863700>

¹¹ Colorado Health Institute. "The Route to the RAEs" Accessed October 2017 at <https://www.coloradohealthinstitute.org/research/route-raes>

¹² Ingold, John. "How Does Medicaid Work in Colorado?" Denver Post, March 15, 2017. Accessed October 2017 at <http://www.denverpost.com/2017/03/15/how-does-medicaid-work-colorado/>

¹³ The Commonwealth Fund. "The Affordable Care Act Health Insurance Marketplaces by Type." Accessed October 2017 at <http://www.commonwealthfund.org/interactives-and-data/maps-and-data/state-exchange-map>

¹⁴ Colorado Health Institute. "2017 Colorado Health Access Survey: The New Normal." Accessed October 2017 at <https://www.coloradohealthinstitute.org/research/colorado-health-access-survey>

Colorado State Innovation Model (SIM)

In December 2014, the Colorado State Innovation Model (SIM)¹⁵ was funded via a four-year, \$65M award from the Centers for Medicare and Medicaid Services (CMS). This initiative is focused on helping health care practices integrate behavioral health and primary care, and testing alternative payment models. A health IT plan for SIM – with a focus on automating the extraction and reporting of clinical quality measures (eCQMs), to support value-based care and payment models – was recently completed.

Under SIM and Colorado's Comprehensive Primary Care (CPC) Initiative, the state's health insurers have come together to form a multi-payer collaborative. The purpose of this collaborative is to fund and launch an analytics platform to help manage and promote the health of the patients served through this program.

Colorado's Health IT Achievements

Colorado is home to many health IT achievements. Among those are:

- A broad deployment of electronic health records (EHRs) systems
- Two (2) successful, sustainable health information exchanges (HIEs):
the Colorado Regional Health Information Exchange (CORHIO), and the Quality Health Network (QHN)
- Colorado Community Managed Care Network (CCMCN)
- A successful, state-based health insurance exchange (Connect for Health Colorado)
- Colorado Immunization Information System (CIIS), an immunization registry, that is interfaced with EHRs and health information exchanges
- An All Payer Claims Database (APCD)
- A prescription drug monitoring program (PDMP)
- An integrated citizen portal for state agency health and related services, the Program Eligibility and Application Kit (PEAK)
- A recently upgraded Medicaid Management Information System (MMIS)
- Colorado Benefits Management System (CBMS) which includes real-time eligibility determination
- The Colorado Telehealth Network (CTN), a statewide, private, medical-grade network
- Colorado Health Observation Regional Data Service (CHORDS)
- Shared eligibility system between Medicaid and the health insurance exchange.

¹⁵ State of Colorado Website. "What is SIM?" Accessed October 2017 at <https://www.colorado.gov/healthinnovation/what-is-sim>

Colorado Collaboration

One of Colorado's most outstanding assets is its exceptionally collaborative community of health care leaders and stakeholders – from throughout the health care ecosystem. Colorado also has many health care alliances, volunteer organizations, networks, affiliations, and non-profit organizations – resulting in many collaborations that actively envision and work to realize a new future for Colorado.

These assets and achievements, together and separately, demonstrate Colorado's unique ability to develop and leverage health IT capabilities in support of the state's broader health agenda. According to U.S. News Top Ten Healthiest States (June 2017)¹⁶ Colorado ranks No. 9 as a healthy state, with the lowest percentage of obese people and one of the lowest mortality rates in the nation. While there is clearly more work to do, Colorado is well on its way toward achieving its "healthiest state" goal.

Colorado's Policy Advances in Health and Health IT

Colorado has been active in promoting health and health IT over the years. While many health and health IT policies have preceded and influenced the design of *Colorado's Health IT Roadmap* and Colorado's health ecosystem, there are several significant milestones worth noting. Some recent examples of forward-thinking policies and actions that have influenced today's environment include:

- 2007 – Health Information Technology Advisory Committee created
- 2009 – Statewide HIE Strategic Plan released
- 2012 – HB 12-1052, required accurate medical and provider directory be maintained by the State
- 2013 – The State of Health: Colorado's Commitment to Become the Healthiest State
- 2014 – Colorado State Innovation Model (SIM) program established
- 2015 – Executive Order B2015-008, established the Office of eHealth Innovation (OeHI) and the eHealth Commission
- 2015 – HB 14-1283, established a Prescription Drug Monitoring Program (PDMP)
- 2015 – HB 15-1029, expanded the use of telehealth¹⁷
- 2017 – HB 17-1094, clarified telehealth locations and tools¹⁸

¹⁶ Leins, Casey. "The 10 Healthiest States," June 14, 2017. U.S. News & World Reports. Accessed October 2017 at <https://www.usnews.com/news/best-states/slideshows/these-10-states-have-the-healthiest-populations-in-the-us?slide=3>

¹⁷ Colorado HB17-1094, "Telehealth Coverage Under Health Benefit Plans." Accessed October 2017 at <http://leg.colorado.gov/bills/hb17-1094>

¹⁸ Colorado SB17-065, "Transparency in Direct Pay Health Care Prices. Accessed October 2017 at <https://leg.colorado.gov/bills/sb17-065>

- 2017 – SB 17- 065, established price transparency for health facilities and professionals¹⁹
- 2017 – SB 17- 019, established Medication Consistency and information exchange throughout the criminal justice system with primary care providers

Continuing changes are expected in the health policy landscape. Some of those anticipated changes include: payment reform, addressing the opioid crisis, supporting improved behavioral health services and integration, and changes to the health insurance market. Policy drivers will continue to shape *Colorado's Health IT Roadmap* for many years to come.

Health Information Technology Advisory Committee

In 2007, a statewide Health Information Technology Advisory Committee was charged with creating a comprehensive long-term plan for health IT in the State of Colorado. This Committee formed the foundation for what now is the eHealth Commission and the Office of eHealth Innovation.

Office of eHealth Innovation (OeHI), and the eHealth Commission

In October of 2015, through executive order B 2015-008, Governor Hickenlooper established the Office of eHealth Innovation (OeHI), and created the eHealth Commission. These were established to accelerate innovation and adoption of health information technology.

In addition to creating OeHI and the eHealth Commission, the order stated, “To promote the expanded use of health IT in Colorado, the state will:

1. Establish an open and transparent statewide collaborative effort to develop common policies, procedures, and technical approaches that will enhance the state’s health IT network;
2. Promote and advance data sharing by reducing or removing barriers to effective information sharing;
3. Support health innovation and transformation by enhancing Colorado’s health information infrastructure; and
4. Improve health in Colorado by promoting the meaningful use of health IT.”

A copy of this executive order is found in Appendix A.

OeHI, with the advice of the eHealth Commission and in close collaboration with key stakeholders statewide, created *Colorado's Health IT Roadmap*. In addition to the *Roadmap* development work, OeHI leads the coordination of health IT projects across state agencies,

¹⁹ Colorado SB17-019, “Medication Mental Illness in Justice Systems.” Accessed October 2017 at <https://leg.colorado.gov/bills/sb17-019>

aligns health IT efforts across the state, and partners with the state's innovation community to align and advance development of digital health innovations.

Advancing Broadband Coverage

Access to broadband remains a challenge for many rural areas. The Governor's Office of Information Technology (OIT)²⁰ is leading the effort to increase coverage and capacity of broadband throughout Colorado.

In 2009 OIT received a grant from the National Telecommunications and Information Administration (NTIA) as part of the State Broadband Initiative (SBI) effort. The primary goal of the grant was to map broadband availability in each state and develop a National Broadband Map. The first Colorado Broadband Map²¹ was launched in 2011 and has continued to be refined since. In 2012, Governor Hickenlooper signed executive order D2012-037, Establishing Broadband Responsibilities in the Governor's Office of Information Technology (OIT).

Provider Directory

In the 2012 legislative session in Colorado, HB 12-1052²² was signed into law, requiring that accurate provider, medical, and health professional directory information be maintained. This was to be used initially to identify underserved areas of the state, and to guide medical education and training programs. The Colorado Department of Public Health and Environment (CDPHE), and the Division of Regulatory Agencies (DORA) are continuing their collaboration and are close to launching a provider directory. Currently, this system is being assessed to determine if it meets updated functional and technical requirements, and can also serve as Colorado's statewide provider directory.

Prescription Drug Monitoring Program

In May of 2015, to help address the escalating opioid crisis, HB 14-1283, Implementation of the Prescription Drug Monitoring Program²³ (PDMP) was signed into law. Since that time, the state has implemented, and upgraded, the PDMP system. The system is integrated with at least one electronic health record system and work is ongoing with the state's two health information exchanges to integrate with them as well.

²⁰ State of Colorado Website, OIT webpage, "Broadband" accessed October 2017 at <http://www.oit.state.co.us/broadband>

²¹ State of Colorado Broadband Portal accessed October 2017 at http://maps.co.gov/HTML5Viewer_2_5/?viewer=Map

²² Colorado HB10-052, "Concerning the Collection of Health Care Workforce Data From Health Care Professionals." Accessed October 2017 at [http://www.leg.state.co.us/CLICS/CLICS2012A/csl.nsf/fsbillcont3/D64782352F2BC6B387257981007DDE2A/\\$FILE/1052_01.pdf](http://www.leg.state.co.us/CLICS/CLICS2012A/csl.nsf/fsbillcont3/D64782352F2BC6B387257981007DDE2A/$FILE/1052_01.pdf)

²³ State of Colorado Website, Prescription Drug Monitoring Program web page accessed October 2017 at <https://www.colorado.gov/pacific/dora-pdmp/prescription-drug-abuse-misuse>

COLORADO'S HEALTH IT INITIATIVES – SUMMARY

The following is a high-level summary of the 16 initiatives.

STAKEHOLDER ENGAGEMENT

01 - Support Care Coordination in Communities Statewide

Develop, support, and enhance technical approaches that can be used to easily share care coordination information – within and across – communities. The initiative recognizes that approaches to care coordination may be unique to individual communities.

02 - Promote and Enable Consumer Engagement, Empowerment, and Health Literacy

Develop and implement tools to educate, engage, and empower consumers in their health and well-being.

GOVERNANCE

03 - Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado

Develop and implement approaches to harmonize data sharing capabilities, increase the rate of health information sharing, and advance health information exchange across Colorado.

04 - Integrate Behavioral, Physical, Claims, Social, and Other Health Data

Develop and implement holistic approaches to harmonize, prioritize, and enable the integration and aggregation of relevant health information on an individual in a meaningful way.

05 - Statewide Health Information Governance

Put in place a governance structure to support statewide health information sharing and use. This governance structure includes statewide health data governance.

06 - Health IT Portfolio/Program Management

Put in place a State-level Health IT Portfolio/Program Management function.

RESOURCES / FINANCIAL

07 - Accessible and Affordable Health IT and Information Sharing

Develop and implement approaches that address the resources, policies, processes, programs, and technology involved in making health IT and information sharing capabilities accessible and affordable.

08 - Accessible and Affordable Health Analytics

Develop and implement approaches for making health analytics accessible and affordable.

PRIVACY & SECURITY

- 09 - Best Practices for Health Information Cybersecurity Threats and Incidents**
Promote the identification, and statewide sharing, of cybersecurity best practices.
- 10 - Consent Management**
Develop and implement a statewide approach to consent management that aligns and harmonizes the consents required for health information sharing in Colorado.

INNOVATION

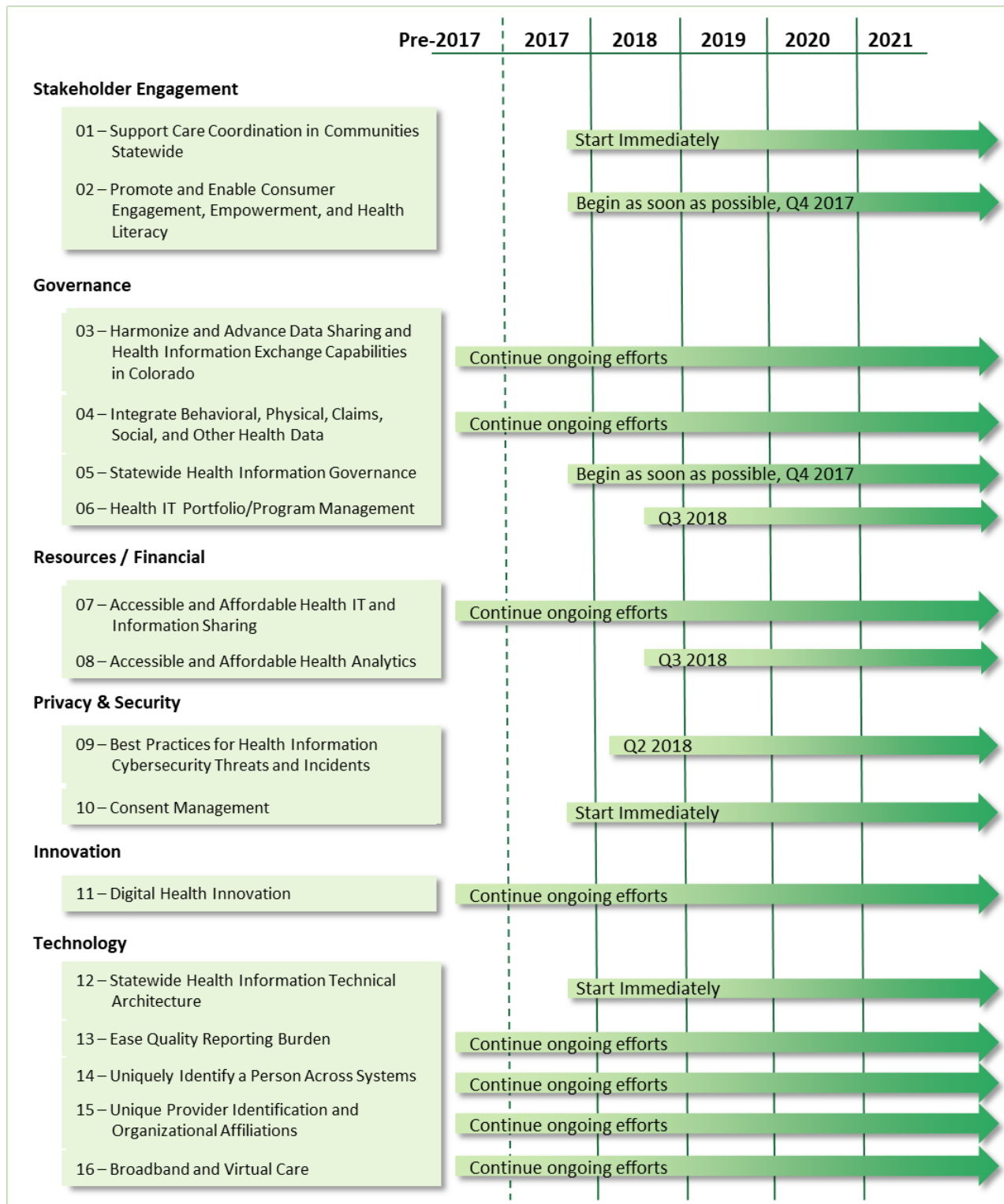
- 11 - Digital Health Innovation**
Facilitate programs, processes, and partnerships that foster health-related innovation in Colorado.

TECHNOLOGY

- 12 - Statewide Health Information Technical Architecture**
Investigate, develop, and implement approaches to optimize Colorado's health information technical architecture.
- 13 - Ease Quality Reporting Burden**
Provide technology support to ease the capture, aggregation, and reporting of agreed upon, quality reporting measures.
- 14 - Uniquely Identify a Person Across Systems**
Develop and implement a comprehensive approach – that includes both health and social services information – that will be used across Colorado to uniquely identify a person across multiple systems and points of care.
- 15 - Unique Provider Identification and Organizational Affiliations**
Develop and implement an electronic approach that will be used across Colorado for uniquely identifying a health care provider and their organizational affiliations – and ultimately their patient relationships.
- 16 - Broadband and Virtual Care Access**
Develop and support approaches that lead to ubiquitous, redundant, reliable, and affordable broadband access for health organizations and consumers.

COLORADO'S HEALTH IT INITIATIVES TIMELINE – SUMMARY

The chart below is a recommended timeline for the implementation of the initiatives. The arrows represent continued refinement and improvement.





Colorado's Health IT Roadmap
December 2019