# Colorado's Health IT Roadmap

*November 2017*

OeHI
Office of eHealth Innovation

The development of the 2017 *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.

Front cover image used under license from Shutterstock.com

# WELCOME LETTER

## Dear Colorado Health Care Stakeholders,

Colorado's goal is to become the healthiest state in the nation, and we are leading the way toward expanded access to care, improved outcomes, lower costs, and healthier communities. Colorado's progressive health care environment is characterized by innovative providers, progressive insurance payers, engaged and visionary non-profit organizations, and ground-breaking research enterprises. Colorado also has one of the nation's top ten digital health innovation communities.

Yet we know there are still significant opportunities to improve. We need more equitable and affordable access to care. We need better connectivity in our rural and frontier areas. We need to share information and coordinate care more effectively, so we can improve outcomes and reduce costs. We need to prepare our health ecosystem for the future of value-based payment.

With my extensive experience in health care, I've seen first-hand the transformational power of health information technology (health IT). Starting with Governor John Hickenlooper's Executive Order B 2015 – 008, we created the eHealth Commission, and the Office of eHealth Innovation, who, in partnership with Colorado's health care stakeholders over the past year, have created this visionary and aspirational *Roadmap*.

I would like to thank the eHealth Commission, the Office of eHealth Innovation, and the over 1,000 Coloradans who have actively participated in the development of this *Roadmap*. I'm confident this effort builds upon Colorado's long and successful history in health IT, and sets the stage for achieving a brighter future.

Please join me as we embark upon this journey together, to fortify our foundations and chart new HIT frontiers, as we become the healthiest state in the nation.

Sincerely,

Donna Lynne
*Lt. Governor and Chief Operating Officer*
*State of Colorado*

This page intentionally left blank

# TABLE OF CONTENTS

## SECTION

1 Executive Summary ..... 7

2 Background ..... 9
Colorado Health IT Activity ..... 9
Federal Health IT-Related Programs and Policies ..... 17

3 How Colorado's Health IT Roadmap Was Developed ..... 19
The People ..... 19
The Process ..... 21

4 The Path Forward ..... 29
Colorado's Health IT Initiatives – Summary ..... 30
Colorado's Health IT Initiatives Timeline – Summary ..... 32
Colorado's Health IT Initiatives – Detail ..... 33
Domain: Stakeholder Engagement ..... 34
Domain: Governance ..... 41
Domain: Resources/Financial ..... 55
Domain: Privacy & Security ..... 62
Domain: Innovation ..... 69
Domain: Technology ..... 73

5 Transition and Next Steps ..... 91
The Road Ahead ..... 91

6 Appendices ..... 93
Appendix A – Executive Order 2015-008 ..... 94
Appendix B – Participants ..... 99
Appendix C – Glossary ..... 111

This page intentionally left blank

SECTION 1

# EXECUTIVE SUMMARY

Colorado has long been nationally recognized for promoting the health and well-being of its residents. In 2013, Colorado released "The State of Health – Colorado's Commitment to become the Healthiest State." That document described Colorado's version of the Triple Aim[1] which is to transform health care to deliver the *Best Care, Best Health, Best Value.*

In October 2015, recognizing that the use of health information technology (health IT) was revolutionizing health care in Colorado, Governor John Hickenlooper issued an executive order establishing the Office of eHealth Innovation (OeHI) to promote and advance the secure, efficient, and effective use of health information, and to help inform, incentivize, and influence future health IT initiatives.

*Colorado's **GOAL** is to become the healthiest state in the nation.*

The same executive order established the eHealth Commission to provide advice and guidance to OeHI on advancing health IT in Colorado. The 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.

The 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. As a result of this broad collaborative involvement, this *Roadmap* truly represents Colorado.

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 framework and a direction to guide the state's Health IT efforts and ensure Colorado has the health information technology (HIT) infrastructure and environment necessary to support its ambitious health care reform efforts.

[1] The IHI Triple Aim, 2013, Institute for Healthcare Improvement. Accessed October 2017 at http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx

This page intentionally left blank

SECTION 2

# 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.

### 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.*[2] 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.[3] The posting of quarterly metrics keep Colorado's leaders focused on achieving these health goals.

### 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 year[4] 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

---

[2] "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

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

[4] "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

under the leadership of Dr. Art Davidson and funded through a $5M contract with the Agency for Healthcare Research and Quality (AHRQ)[5]. 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.[6] In a 2017 study, The Best States for Data Innovation,[7] 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.[8]

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.

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 nation[9], 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

---

[5] 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

[6] 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

[7] 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=bcfcfbd14f

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

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

care collaborative organizations (RCCOs) into Regional Accountable Entities (RAEs).[10] 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).[11] 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)[12] 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,[13] 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.

## *Colorado State Innovation Model (SIM)*

In December 2014, the Colorado State Innovation Model (SIM)[14] 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.

---

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

[11] 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/

[12] 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

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

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

## 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.

## 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)[15] 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.

[15] 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

## 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 telehealth[16]
- 2017 – HB 17-1094, clarified telehealth locations and tools[17]
- 2017 – SB 17- 065, established price transparency for health facilities and professionals[18]
- 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

[16] Colorado HB17-1094, "Telehealth Coverage Under Health Benefit Plans." Accessed October 2017 at http://leg.colorado.gov/bills/hb17-1094
[17] Colorado SB17-065, "Transparency in Direct Pay Health Care Prices. Accessed October 2017 at https://leg.colorado.gov/bills/sb17-065
[18] Colorado SB17-019, "Medication Mental Illness in Justice Systems." Accessed October 2017 at https://leg.colorado.gov/bills/sb17-019

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, 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)[19] 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

[19] State of Colorado Website, OIT webpage, "Broadband" accessed October 2017 at http://www.oit.state.co.us/broadband

Map. The first Colorado Broadband Map[20] 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 12-1052[21] 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 Program[22] (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.

## *Health Foundations and Health-Related Non-Profits*

Colorado is fortunate to have hundreds of visionary and generous non-profit organizations that help to fund innovation, conduct analytic research, and help to address key community needs. From broad-based statewide efforts, to the hundreds of smaller, specialized non-profit organizations – Coloradans band together to support communities and populations in need. These organizations will be key partners in the efforts to advance the initiatives outlined in this *Roadmap*

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

[21] 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

[22] 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 Health IT Related Events

| Pre-2009 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| 1999<br>Governor's Office of Innovation and Technology is created; in 2006 renamed "Office of Information Technology" (OIT)<br><br>2004<br>Quality Health Network (QHN) established<br><br>2005<br>Colorado Health Information Exchange (COHIE) formed<br><br>2007<br>SB 07-196 established the Health Information Technology Advisory Committee to create a long-term Colorado HIT plan | OIT received grant from National Telecommunications and Information Administration (NTIA) to map broadband availability in the state<br><br>Colorado Regional Health Information Organization (CORHIO) established as successor to COHIE | HB 10-1330 established the Colorado All Payer Claims Database and named the Center for Improving Value in Health Care (CIVHC) its administrator.<br><br>Colorado Statewide HIE Strategic Plan released | SB11-200 established "Connect for Health Colorado," the state-run health insurance marketplace<br>First Colorado Broadband Map launched | HB 12-1052 signed into law requiring accurate provider, medical, and health professional directory information be maintained (Provider Directory)<br><br>Executive Order D 2012-037 established OIT as responsible for statewide broadband activities |
| **2013** | **2014** | **2015** | **2016** | **2017** |
| Governor announced health policy agenda, "The State of Health: Colorado's Commitment to Become the Healthiest State" | Colorado State Innovation Model (SIM) established with $65M award from CMS | Executive Order B 2015-008 established the Office of eHealth Innovation (OeHI) and the eHealth Commission<br>HB 14-1283 established a Prescription Drub Monitoring Program (PDMP)<br>HB 15-1029 expanded coverage for telehealth | Colorado Medicaid changed its name to "Health First Colorado" | Colorado ranked "Best State for Data Innovation" by the Center for Data Innovation<br><br>SB 17-146 enacted to enhance PDMP legislation and allow more authorized digital access to records<br><br>SB 17-019 "Medication Consistency Bill" is enacted requiring Legislative oversight concerning the treatment of persons with mental health disorders in the criminal and juvenile justice systems |

# Federal Health IT-Related Programs and Policies

## ARRA and HITECH

With the passage of the American Recovery and Reinvestment Act (ARRA) in 2009, which included the Health Information Technology for Economic and Clinical Health Act (HITECH), $25.9 billion was allotted for the expansion of health IT nationwide.[23] Of that allocation, according to Centers for Medicare and Medicaid Services (CMS),[24] Colorado eligible hospitals and providers received over $171M in Medicaid incentives and over $345M in Medicare incentives through August 2017.

## Office of the National Coordinator for Health IT (ONC)

Since its formation in 2009 through executive order and then by statute through ARRA in 2010, ONC has been a major influence in health IT in Colorado and around the country. Among ONC's more recent contributions are:

- "Report on Health Information Blocking," Report to Congress, April 2015[25]
- "Federal Health IT Strategic Plan 2015 – 2020"[26]
- "Connecting Health and Care for the Nation – A Shared Nationwide Interoperability Roadmap," October 2015[27]
- "2016 Interoperability Standards Advisory"[28]
- "Standards and Interoperability Framework"[29]

[23] HITECH Act Summary. Found on the USF Website at https://www.usfhealthonline.com/resources/key-concepts/hitech-act-summary/

[24] CMS Website, Data and Program Reports web page accessed October 2017 at https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/DataAndReports.html

[25] The Office of the National Coordinator for Health Information Technology. "Report on Health Information Blocking". Report to Congress, April 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/reports/info_blocking_040915.pdf

[26] The Office of the National Coordinator for Health Information Technology. "Federal Health IT Strategic Plan 2015 – 2020". September 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/federal-healthIT-strategic-plan-2014.pdf

[27] The Office of the National Coordinator for Health Information Technology. "Connecting Health and Care for the Nation – A Shared Nationwide Interoperability Roadmap". October 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf

[28] The Office of the National Coordinator for Health Information Technology. "2016 Interoperability Standards Advisory". Accessed October 2017 at https://www.healthit.gov/sites/default/files/2016interoperabilitystandardsadvisoryfinalv2_02.pdf

[29] The Office of the National Coordinator for Health Information Technology. "Standards and Interoperability Framework". Accessed October 2017 at https://www.healthit.gov/sites/default/files/pdf/fact-sheets/standards-and-interoperability-framework.pdf

These contributions have guided and propelled the use of health IT and the sharing of health information.

## *21st Century Cures Act*

In December of 2016, the 21st Century Cures Act[30] was passed. In addition to supporting medical research and bringing cures faster to the patients who need them, this act also supports continued advancements in health information technology, and addresses challenges such as "information blocking."

Information blocking occurs when persons or entities knowingly and unreasonably interfere with the exchange or use of electronic health information. This issue has become more apparent as electronic health information becomes more prevalent.

In April 2015, ONC released its report to Congress on Health Information Blocking.[31] This report focused on potential information blocking by health care providers and health IT developers, including vendors of EHR technology

Colorado, as other states, has experienced information blocking. The State is considering legislation and other actions to address this issue.

## *Summary*

This background section provides a glimpse into the firm foundation Colorado has established in health, health care reform, and health information technology.

Going forward, Colorado's Health IT Roadmap, with its forward-focused initiatives, will further develop the state's capabilities to more effectively use and share health information.

[30] "The 21st Century Cures Act Summary" found on the U.S. Food and Drug Administration Website at https://www.fda.gov/RegulatoryInformation/LawsEnforcedbyFDA/SignificantAmendmentstotheFDCAct/21stCenturyCuresAct/default.htm

[31] CMS Website, Data and Program Reports web page accessed October 2017 at https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/DataAndReports.html

SECTION 3

# HOW COLORADO'S HEALTH IT ROADMAP WAS DEVELOPED

This *Roadmap* was developed for and by Coloradans. Hundreds of individuals and organizations – from the public, private, and public/private sectors throughout Colorado – participated in the process to create *Colorado's Health IT Roadmap*. This was possible through the collaboration of the Office of eHealth Innovation, the eHealth Commission, and Mosaica Partners. These individuals and organizations freely contributed their time and expertise to this important effort. Without their active involvement and participation, the development of *Colorado's Health IT Roadmap* would not have been possible.

## THE PEOPLE

Development of the *Roadmap* was coordinated by Mary Anne Leach, Director of the Office of eHealth Innovation, and Carrie Paykoc, Colorado's State Health IT Coordinator. Additional project team members are listed below.

### COLORADO HEALTH IT ROADMAP PROJECT TEAM MEMBERS

| | | |
|---|---|---|
| Mary Anne Leach *OeHI* | Marc Lassaux *QHN* | Laura Kolkman |
| Carrie Paykoc *OeHI* | Veronica Menard *HCPF* | Bob Brown |
| Jason Greer *CCMCN* | Chris Underwood *HCPF* | Fran Rubino |
| Evon Holladay *University of Denver* | Alejandro Vera *HCPF* | |
| Kelly Joines *CORHIO* | Saundra Beaird *HCPF* | |
| Micah Jones *HCPF* | Emily Giebel *OeHI* | |
| Chris Lowell *OeHI* | | |

## *Roadmap Steering Committee*

One of the first actions of the core team was to establish a *Roadmap Steering Committee*. The then newly-formed eHealth Commission – comprised of recognized leaders in Colorado's health care community, including specialists in health information exchange and technology – was selected to function as the *Roadmap's* Steering Committee. The Commission agreed to take on the responsibility of providing the core team with oversight and guidance, act as a sounding board, and provide substantive review of the approaches, activities, and outputs. Their insights and guidance helped shape this *Roadmap.* The members of the Steering Committee are shown below.

**COLORADO HEALTH IT ROADMAP STEERING COMMITTEE MEMBERS (eHEALTH COMMISSION)**

Michelle Mills, Chair
*Colorado Rural Health Center*

Marc Lassaux, Co-Chair
*QHN*

Jason Greer, Co-Chair
*CCMCN*

Mary Anne Leach
*Office of eHealth Innovation*

Carrie Paykoc
*Office of eHealth Innovation*

Kendall Paul Alexander
*North Range Behavioral Health*

Adam Brown
*Anthem Blue Cross Blue Shield*

Ann Boyer, MD
*Children's Hospital Colorado*

Jon Gottsegen
*Governor's Office of Information Technology*

James Holder
*Cigna*

Morgan Honea
*CORHIO*

Michele Lueck
*Colorado Health Institute*

Dana Moore
*Children's Hospital Colorado*

Greg Reicks, DO
*Foresight Family Physicians*

Alexis Sgouros
*Kaiser Permanente*

Bill Stevens
*Governor's Office of Information Technology*

Chris Underwood
*Health Care Policy and Financing*

Chris Wells
*Department of Public Health and Environment*

Herb Wilson
*Colorado Department of Human Services*

Tania Zeigler
*Kaiser Permanente*

Monthly, in-person meetings of the *Roadmap Steering Committee* and core project team were held at HCPF's offices in Denver. Additional meetings were held by conference call and webinar as needed.

## *Additional Participants*

In addition to the core project team and the steering committee, many people also contributed their time through participation in workshops and interviews – described in the "Process" section below. Appendix B lists the many Colorado stakeholders that contributed to the *Roadmap* in these ways.

## THE PROCESS

The State used a structured, evidence-based methodology, Large Enterprise Applied Planning Protocol™ (LEAPP™) – developed and guided by Mosaica Partners, a nationally recognized health information strategy and exchange consulting firm – to guide the *Roadmap* development process. This process incorporates specialized tools and techniques for producing large scale, enterprise-wide or state-wide, health IT plans. The process, with key dates, is depicted in the graphic below.

**COLORADO'S HEALTH IT ROADMAP**
**DEVELOPMENT PROCESS & TIMELINE**

Copyright © 2010 - 2017 by Mosaica Partners, LLC – Used with Permission

## The Health IT Vision

The vision for the *Roadmap* project was adopted from the Governor's 2013 report, "The State of Health. Colorado's Commitment to Become the Healthiest State."

"Our ***GOAL*** is for Colorado to become the healthiest state in the nation."

"Our ***VISION*** is a future where health and well-being are as much a part of Colorado's way of life as our mountains, clear skies, and pristine environment."

## Principles Guiding the Development of the Roadmap

The Core Team and Steering Committee developed and adopted the following principles to guide and inform the *Roadmap* development process.

- Support Colorado's health care transformation efforts
- Use an open and transparent process
- Ensure broad stakeholder participation, support, and acceptance
- Include broad geographic and demographic considerations
- Leverage existing capabilities, where possible
- *Roadmap* initiatives should be achievable, actionable, and practical
- Focus on the "whole person" not just the "patient"

## Interviews of Key Health IT Stakeholders

Beginning in July 2016 and continuing through September 2016, Mosaica Partners conducted interviews with over 25 of Colorado's key health IT stakeholders. The interviews were conducted to gain insight into Colorado's needs, strengths, and concerns related to health IT. The results of the interviews were aggregated and summarized.

The information gleaned from these interviews – along with a concurrent review of relevant documentation – provided the core project team with insights into the current state of health information practices and the future needs for technology to support health care reform in Colorado.

## *Envisioning Workshops*

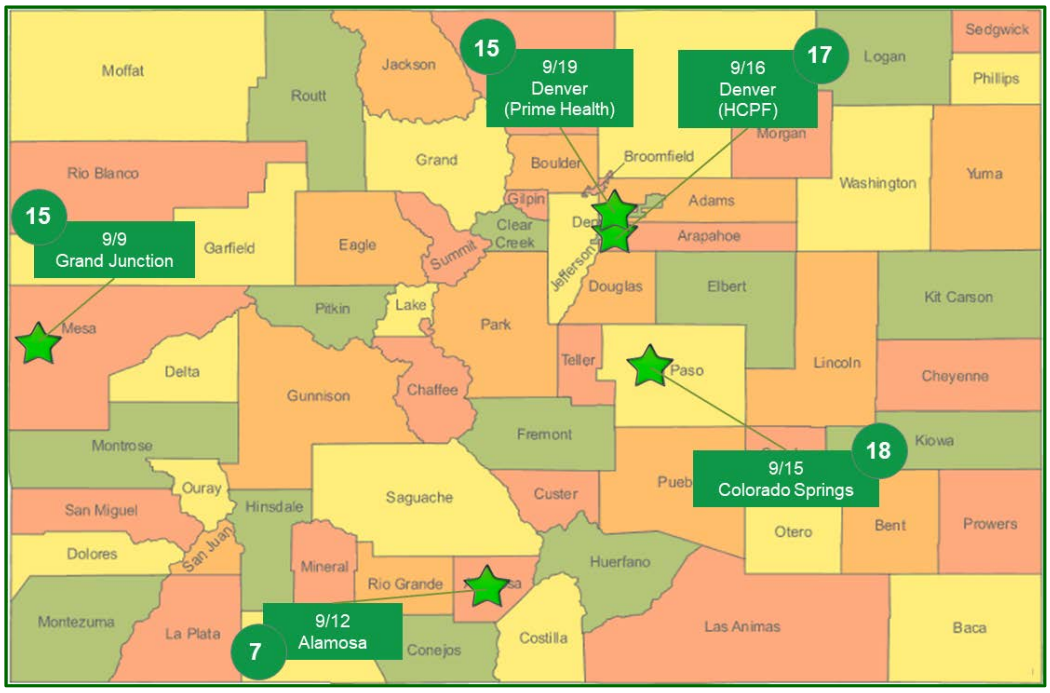
Subsequent to the key stakeholder interviews, Mosaica Partners, working closely with OeHI, facilitated five envisioning workshops. These workshops were held in locations around the state to encourage broad stakeholder input. The purpose of the workshops was to:

- Introduce stakeholders to the core project team and explain the *Roadmap* development process.
- Discover stakeholders' specific wants and needs related to the support of health care reform in Colorado.
- Understand what the participants regarded as barriers to having a fully effective health IT infrastructure that supports health care reform.
- Understand the diverse perspectives on potential issues/challenges that may arise in deploying this infrastructure – especially because it is statewide and will impact so many stakeholders.
- Understand participants' views on the key elements of success for improving the access to and use of health IT in Colorado.

The dates and locations of the envisioning workshops are shown below. The numbers in the circles indicate the number of attendees at each workshop.

**FIVE ENVISIONING WORKSHOPS**

Conducted around the State of Colorado in the Fall of 2016



## *Developing the Objectives*

Based on the results of the workshops, prior interviews, document reviews, and Mosaica Partners' knowledge of best practices in heath information strategy and exchange, the core project team produced an initial set of *Roadmap Objectives*. These objectives were reviewed, adjusted, and approved by the *Roadmap Steering Committee*.

The 13 objectives answer the question,

**"If we successfully execute this *Roadmap*, what will we have accomplished?"**

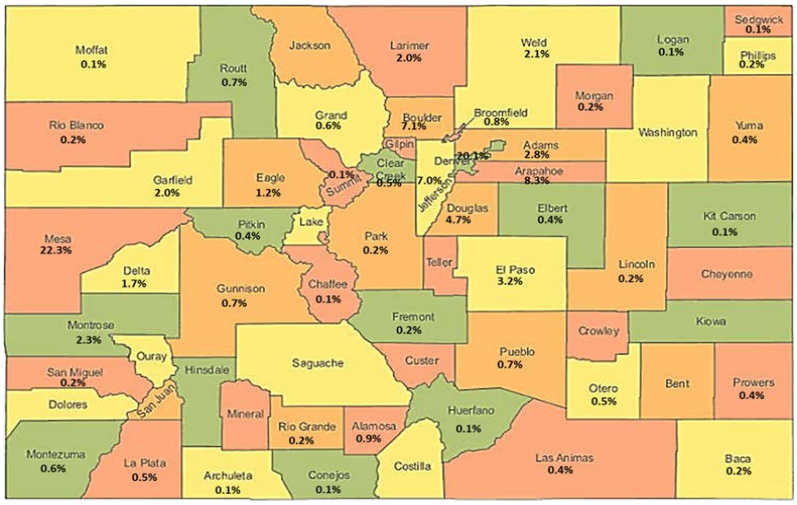
### COLORADO'S HEALTH IT ROADMAP OBJECTIVES

1. **Care Coordination:** Health care and health-related information needed for effective coordination of care across community services is easily accessible and usable throughout Colorado.
2. **Access to Information**: Coloradans (and their authorized individuals and providers) can easily, appropriately, and securely access health care information.
3. **Governance & Policy**: Health care information privacy policies and regulations are consistently understood and consistently applied across Colorado's health care ecosystem.
4. **Care Delivery**: Care is delivered through the most appropriate means and at the most appropriate location.
5. **Quality Reporting**: State required quality measures are relevant to achieving Colorado's State of Health Triple Aim - Best Health, Best Care, and Best Value - and they are aligned across programs and settings, standardized, and easy to report.
6. **Governance & Policy**: Colorado's policies, regulations, and investments are aligned to promote the secure sharing of health information required to achieve Colorado's State of Health Triple Aim – Best Health, Best Care, and Best Value.
7. **Governance & Policy**: There is an agreed upon approach for uniquely identifying participants (e.g. providers, patients, payers, persons) in Colorado's health care ecosystem.
8. **Data Governance**: There is consistent, broad, open, and transparent governance of health care and health-related data, and the sharing of that data.
9. **Cost of Health IT**: All providers have access to cost effective, health IT support and services that are aligned and realistic with their budgets and the value proposition of those services is clear and transparent.
10. **Consent Management**: Coloradans have easy to use, clear and concise pathways to manage (to the extent allowed by law) their individual consent to the sharing of their health care information.
11. **Innovation**: Colorado remains a recognized leader in supporting and adopting innovative technical approaches and solutions in support of Colorado's Triple Aim.
12. **Data Integration and Availability**: Physical health, behavioral health, social services, payment, and cost information is integrated and readily available and usable.
13. **Analytics**: There is widespread access to, and use of, health data analytics.

## *Statewide Health IT Survey*

After the Health IT Objectives were developed and approved by the *Roadmap Steering Committee*, a statewide survey was conducted to obtain additional stakeholder input on the relative importance of the proposed objectives.

OeHI and HCPF directly invited health care stakeholders throughout Colorado to participate in the survey. In addition, individual *Roadmap Steering Committee* members – and over 35 professional and community-based organizations – assisted in the distribution effort by directly inviting their members/associates to participate in the survey.




Percent of Survey Respondents by County

*Over 850 stakeholders from 47 counties completed the Health IT Objectives Survey*

| Occupation Category | % |
|---|---|
| Office/Administration | 17.4% |
| Healthcare Provider/Physician | 14.7% |
| Healthcare Executive | 12.2% |
| Nurse | 10.5% |
| Healthcare Support Personnel | 7.7% |
| IT/Informatics Professional | 7.6% |
| Government Employee | 7.2% |
| Consultant/Business Analyst | 4.8% |
| Consumers | 4.2% |
| Academic | 3.5% |
| Public Health | 2.9% |
| Payer | 2.6% |
| IT Vendor | 2.0% |
| CIO | 1.4% |
| Pharmacist/Pharmacy | 1.4% |

Percent of Survey Respondents by Occupation

Because of this great collaboration over 850 individuals – representing an impressive diversity of professions from 47 of Colorado's 64 counties – completed the survey. The objectives shown on the previous page are listed in the order of relative importance as indicated by the survey results.

## Capabilities Workshop

The next step in the process was to understand the capabilities that need to be in place to achieve the objectives. Capabilities describe attributes of the desired health IT infrastructure necessary to support health care reform in Colorado.

## Enablers Workshop

After the required Capabilities had been defined, another workshop was held to identify and understand what elements of enabling infrastructure needed to be in place to support those capabilities.

Enablers are those things that need to be in place from technical, operational, and policy perspectives for the capabilities to exist. These are necessary to achieve the objectives, and ultimately, Colorado's health care reform goals.

## Initiatives

Equipped with a list of Enablers that need to be in place to support the required capabilities, the core project team then conducted a gap analysis that compared the current state with the desired future state of health IT in Colorado. From this analysis, gaps were identified and a series of initiatives, designed to close those gaps, were developed.

The resulting initiatives describe the programs and projects that need to be undertaken to enable Colorado to continue to develop and maintain a health IT environment that supports the State's health care reform goals.

## Organizational Briefings

In addition to the activities described above, the core project team was invited to provide a number of informal briefing sessions on the project. These sessions were used to educate attendees and obtain their input.

The core project team met with the leadership of the following organizations:

- Center for Improving Value in Health Care (CIVHC)
- College of Health Information Management Executives (CHIME)
- Colorado CIO Forum
- Colorado Commission of Indian Affairs (CCIA)
- Colorado Community Managed Care Network (CCMCN)
- Colorado Department of Public Health and Environment (CDPHE)

- Colorado Health Care Cabinet
- Colorado HIMSS Chapter
- Colorado Regional Health Information Organization (CORHIO)
- Colorado State Health IT Workgroup
- Colorado Telehealth Work Group (CTWG)
- Health Care Policy and Financing (HCPF)
- North Range Behavior Health Center
- Prime Health
- Quality Health Network (QHN)

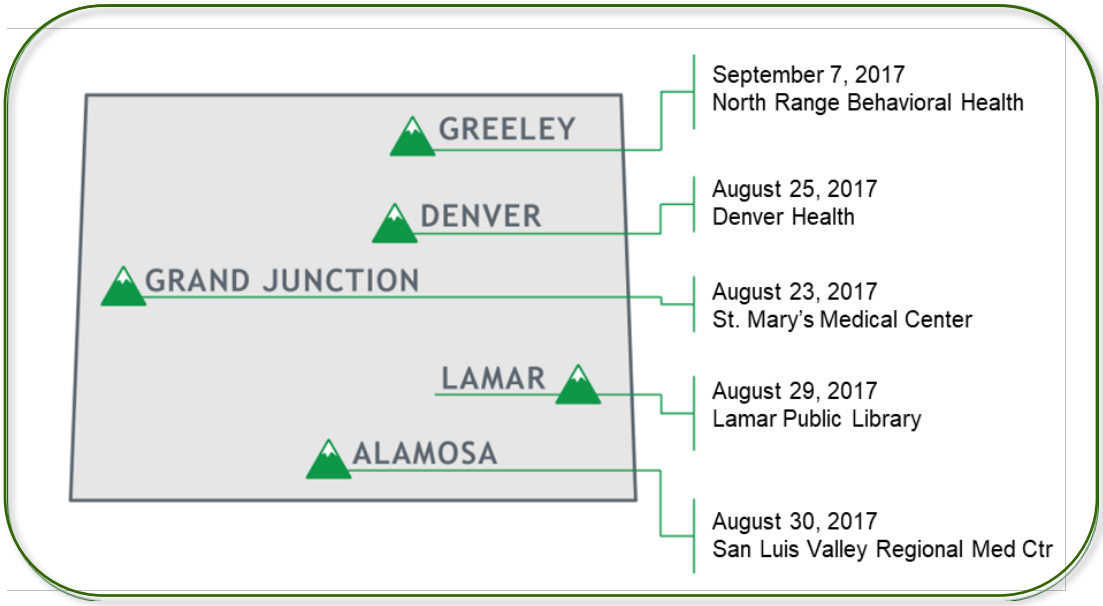
In each of these briefings, the status of the *Roadmap* project was described, and feedback was solicited.

## *Public Forums*

Ongoing public input was an important element in the development and finalization of this *Roadmap*. An early summary of the *Roadmap* initiatives was released in August 2017 for public comment. Five public meetings were held throughout Colorado in August and September 2017 to review the planning effort and present high-level descriptions of the initiatives. At each of the meetings public comment was solicited and received.

The graphic below shows the locations of the five public forums.

**FIVE PUBLIC FORUMS**
Held around the State of Colorado in the Fall of 2017
130 Attendees



## *Review and Approval of Roadmap by Colorado's eHealth Commission*

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 *Roadmap* be implemented.

## *Summary of Broad Stakeholder Participation in Developing Colorado's Health IT Roadmap*

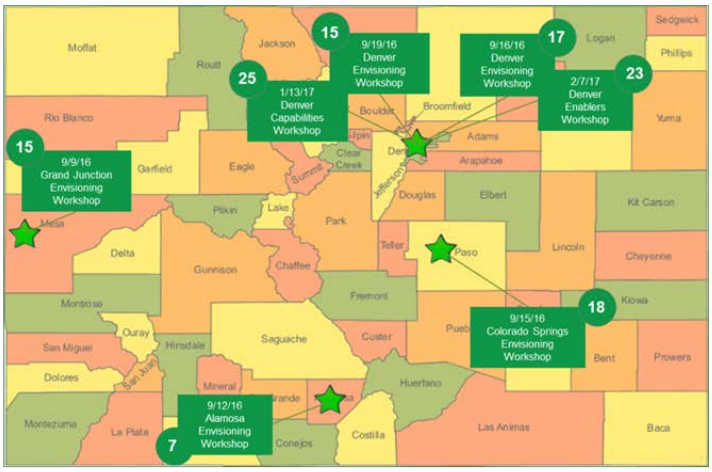
We would like to thank the more than 1,000 individuals who contributed to the development of the *Roadmap* by participating in:

- One-on-one interviews (over 25)
- Day long workshops held across the state (120 participants)
  - Envisioning Workshops
  - Capabilities Workshop
  - Enablers Workshop
- Taking the Colorado Health IT Objectives Survey (850 responded)
- Organizational briefings
- Two-hour Public Forums held around the state (130 attendees)

*Over 850 stakeholders from 47 of Colorado's 64 counties completed the Health IT Objectives Survey*

120 people participated in day long workshops

An additional 130 people attended two-hour information sessions



SECTION 4

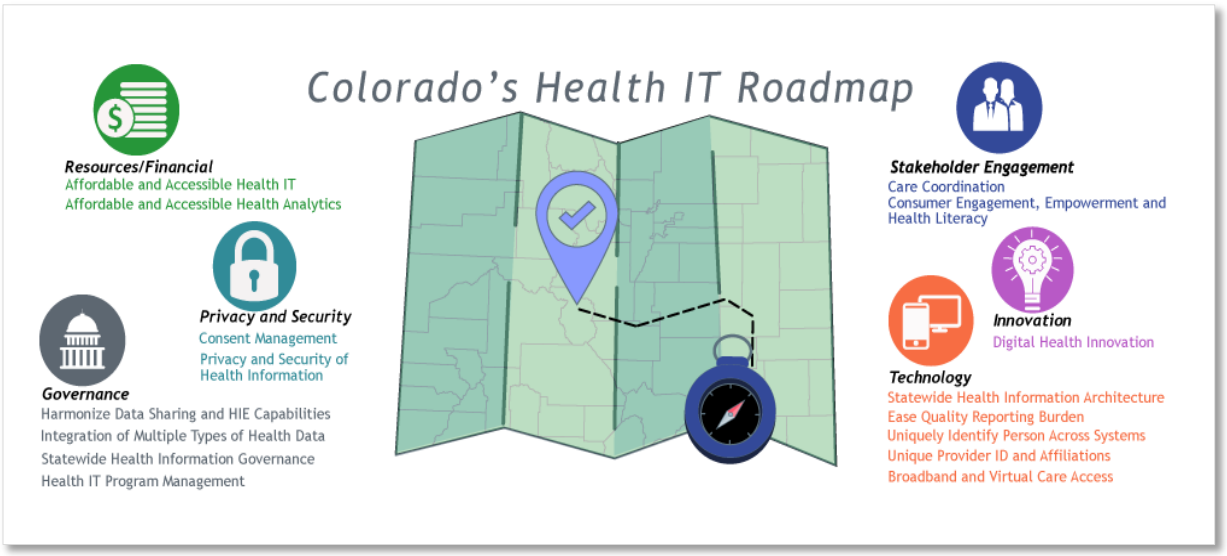
# THE PATH FORWARD

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

The *Roadmap's* 16 initiatives are grouped into the following six domains:

- Stakeholder Engagement
- Governance
- Resources/Financial
- Privacy & Security
- Innovation
- Technology

*Colorado's Health IT Roadmap Initiative Domains*



# 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**

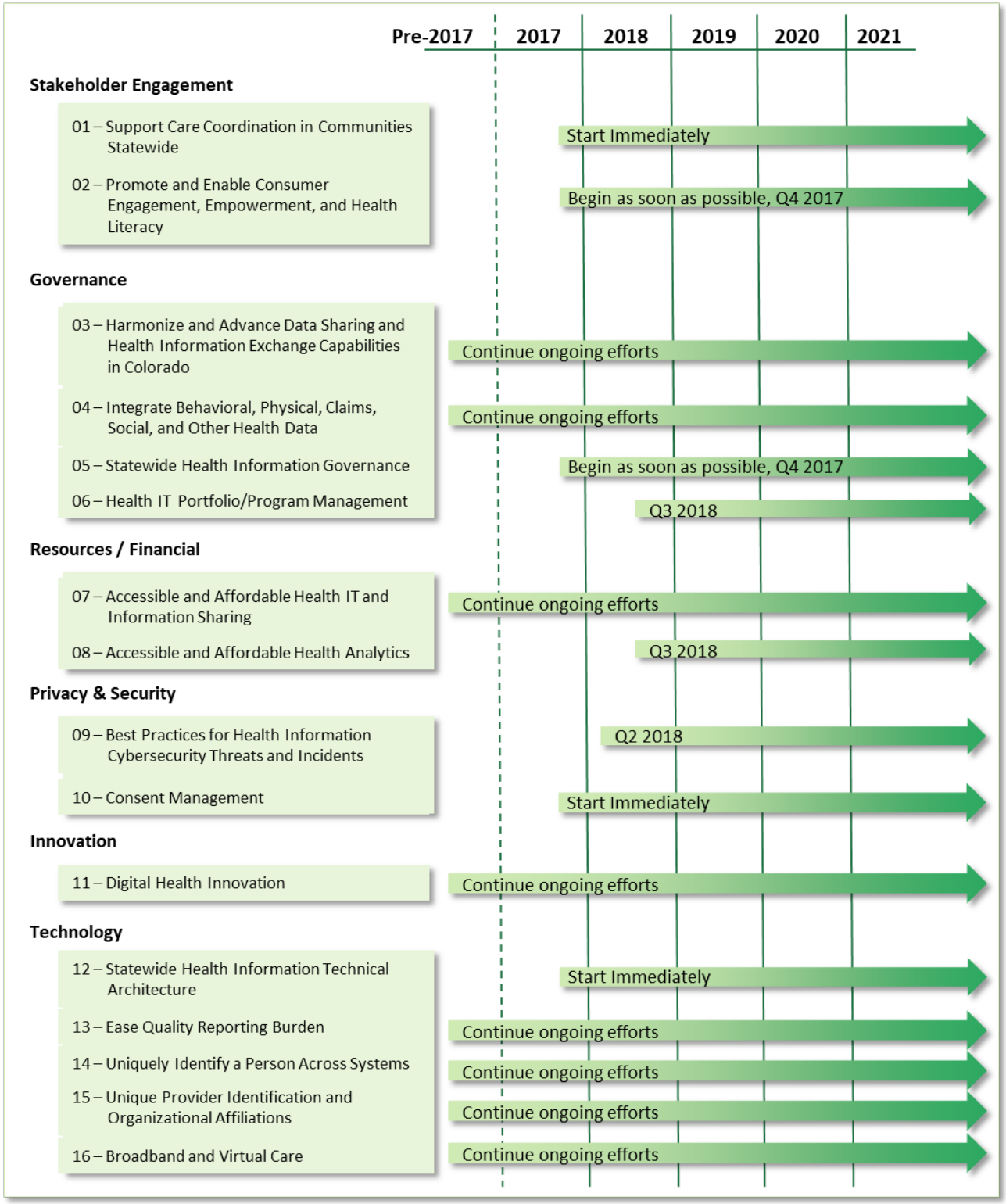
Develop and implement an electronic approach that will be used across Colorado for uniquely identifying a health care provider and their organizational affiliations – and ultimately their patient relationships.

**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 INITIATIVES – DETAIL

The following pages provide detailed descriptions of the 16 initiatives recommended in this *Roadmap*.

Each *Initiative* contains the detailed components described in the table below.

| INITIATIVE NAME | |
|---|---|
| **DOMAIN** | Domain name |
| **DESCRIPTION** | Description of initiative. |
| **BACKGROUND & FINDINGS** | Context for why the initiative is included. |
| **PURPOSE** | The overall reason for the initiative and what it should put in place. |
| **OUTCOME(S)** | Specific outcomes(s) the initiative is intended to achieve. |
| **SUGGESTED APPROACH** | Approaches to consider for undertaking the initiative. |
| **SUGGESTED INITIATOR** | Suggestions of organization(s) that could be responsible for convening people to initiate the next steps related to the initiative. |
| **TIMING** | When this initiative should be started. Estimate by quarters. |
| **INTERDEPENDENCIES** | Lists the other initiatives or programs upon which this initiative is dependent. Lists other initiatives or programs that depend upon or interact with this initiative. |
| **POTENTIAL FUNDING SOURCES** | List of sources that may be able to provide funding. |

# STAKEHOLDER ENGAGEMENT & PARTICIPATION

| 1. | SUPPORT CARE COORDINATION IN COMMUNITIES STATEWIDE |
|---|---|
| **DOMAIN** | Stakeholder Engagement & Participation |
| **DESCRIPTION** | This initiative will 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. |
| **BACKGROUND & FINDINGS** | Colorado's health care reform goals require care coordination across the continuum of care. As Colorado implements emerging models of value-based care and payment methods, the need for tools to support care coordination across communities, consumers, providers, and services, will continue to grow.<br><br>Fortunately, in Colorado, there are already multiple communities and organizations providing care coordination. These efforts must continue to be supported and enhanced. |
| **PURPOSE** | The purpose of this initiative is to support communities in implementing their own care coordination processes and to provide the tools and support for individuals whose care coordination needs may extend beyond their local community. |
| **OUTCOME(S)** | Strengthened statewide approach to care coordination.<br><br>Timely, appropriate, and easily accessible information is available at the point of care/care coordination – within and across communities – that supports optimal clinical, service, and cost outcomes.<br><br>Criteria to measure care coordination capability and effectiveness by community is available and used. |

| | |
|---|---|
| **SUGGESTED APPROACH(ES)** | **Discover**<br>1. Identify and leverage existing care coordination activities and alliances in Colorado such as:<br>· Health Care Systems<br>· Clinically Integrated Networks (CINs)<br>· Healthy Transitions Colorado[32]<br>· Accountable Care Organizations (ACOs)<br>· Regional Accountable Entities (RAEs)<br>· Health Information Exchanges (HIEs)<br>· Patient Centered Medical Homes (PCMHs)<br>2. Identify best practices and tools for care coordination.<br><br>**Plan**<br>3. Keep the care coordination person (patient) centric.<br>4. Identify unique community needs and gaps in care coordination.<br>5. Develop a prioritization method to determine high priority persons/population segments to address.<br>6. Coordinate the project(s) with existing care teams (and care team projects) to prevent duplication.<br>7. Ensure integration with statewide health information technical architecture.<br>8. Provide incentives to promote the adoption and use of care coordination tools among all participants in Colorado's health care ecosystem.<br>9. Consider additional incentives to promote the sharing of health and health-related information.<br>10. Include access to, and integration of, disease and other types of registries.<br>11. Provide tools and incentives to engage patients, their families, and their proxies in helping to coordinate their own care.<br>12. Leverage the training criteria for care coordinators/patient navigators with organizations such as the Patient Navigator, Colorado Community Health Worker & Promotor de Salud Alliance curricula.<br><br>**Implement**<br>13. Implement a standard approach to develop and use statewide care coordination tools.<br>14. Provide education and communication programs that meet the needs of stakeholders involved in health IT aspects of health care transformation. |

[32] Healthy Transitions Colorado Website accessed October 2017 at http://healthy-transitions-colorado.org

| | |
|---|---|
| **SUGGESTED INITIATOR** | OeHI and HCPF to form eHealth Commission Working Group |
| **TIMING** | Begin as soon as possible. Q4 2017 |
| **INTERDEPENDENCIES** | Initiative #2 Promote and Enable Consumer Engagement, Empowerment, and Health Literacy<br>Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #6 Health IT Portfolio/Program Management<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #10 Consent Management<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA HITECH 90/10 funding (10% State Match)<br>• Foundations<br>• Public/private partnerships<br>• Innovators and private equity<br>• Commercial payers |

| 2. | PROMOTE AND ENABLE CONSUMER ENGAGEMENT, EMPOWERMENT, AND HEALTH LITERACY |
|---|---|
| **DOMAIN** | Stakeholder Engagement & Participation |
| **DESCRIPTION** | This initiative develops and implements tools to educate, engage, and empower consumers in their health and well-being. |
| **BACKGROUND & FINDINGS** | Colorado has a long and successful history of engagement and collaboration with its residents. Colorado's goal to become the healthiest state will require leveraging and continuing to build stakeholder empowerment as consumers become more engaged in actively pursuing better health and well-being. |
| **PURPOSE** | The purpose of this initiative is to provide tools which support consumers becoming more knowledgeable and proactive regarding their health and well-being.<br><br>These tools will support achieving one's optimum level of wellness by leveraging the power of consumerism while effectively managing costs. |
| **OUTCOME(S)** | Consumers have available and accessible resources – and use them effectively – to support their knowledge of and proactive engagement in their health and well-being. |
| **SUGGESTED APPROACH(ES)** | **Discover**<br>1. Understand what tools, information, and services consumers want and need to become more informed about, empowered and engaged in their health and well-being.<br>2. Develop an inventory of capabilities and resources currently available, both locally and nationally.<br>3. Identify gaps.<br><br>**Plan**<br>4. Develop and implement education and communication programs that meet the needs of consumers/stakeholders involved in health IT aspects of health care transformation. |

5. Consider approaches for safety net and other populations such as:
    - Translation services for patients for whom English is not their native language.
    - Study and share community-driven solutions to providing increased access to care in underserved communities
6. Convene a consumer advisory board to provide ongoing input.
    - Consider coordinating with existing health care consumer advisory boards and forums and identify gaps in representation.

**Implement**

7. Provide tools, such as consumer apps, that aggregate data and present it in secure, relevant, and user-friendly ways to:
    - Support longitudinal (cross-provider and cross-payer) health and health-related information
    - Support personal digital device-generated information
    - Provide easy to use tools to locate and access the resources such as a consumer self-service portal
    - Include access to a person's complete longitudinal information across payers and providers.
    - Enable consumers to shop on cost, service, and quality.
8. Provide tools for providers to help engage patients in their health
9. Resources to consider include the following:
    - PEAK[33] - Colorado's Medicaid eligibility platform
    - Center for Improving Value in Health Care (CIVHC)[34]
    - Connect for Health Colorado[35] - Colorado's Health Insurance Exchange
    - HEDIS[36] - Payer measures which make it possible to compare health plans on an equal footing
    - Healthgrades[37]
    - Consumer education sites
    - HIE longitudinal patient record
    - Patient advocacy activities to promote literacy and empowerment
10. Engage the innovation community to develop tools to improve consumer engagement, empowerment, and health literacy.

[33] PEAK website, Apply for Benefits page accessed October 2017 at http://coloradopeak.force.com/ABWEL
[34] CIVHC website, Home Page accessed October 2017 at http://www.civhc.org/
[35] Connect for Health Colorado, Home Page accessed October 2017 at http://connectforhealthco.com/
[36] National Committee for Quality Assurance (NCQA) website. "What is HEDIS." Accessed October 2017 at http://www.ncqa.org/hedis-quality-measurement/what-is-hedis
[37] Healthgrades website, Home Page accessed October 2017 at www.healthgrades.com

| | |
|---|---|
| **SUGGESTED INITIATOR** | OeHI and other state agencies such as HCPF and CDPHE, as well as consumer advocacy groups |
| **TIMING** | Begin Q4 2017 |
| **INTERDEPENDENCIES** | Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • State budget<br>• Public/private partnerships<br>• Foundation funding<br>• ARRA/HITECH 90/10 funding |

# GOVERNANCE

| 3. | HARMONIZE AND ADVANCE DATA SHARING AND HEALTH INFORMATION EXCHANGE CAPABILITIES ACROSS COLORADO |
|---|---|
| **DOMAIN** | Governance |
| **DESCRIPTION** | This initiative develops and implements approaches to harmonize data sharing capabilities, increase the rate of health information sharing, and advance health information exchange across Colorado. |
| **BACKGROUND & FINDINGS** | Success in achieving Colorado's Triple Aim for health care reform requires that all appropriate providers have access to relevant, current, accurate information about those for whom they provide care and that consumers have access to their own information.<br><br>Colorado has two (2) major health information exchange organizations – Colorado Regional Health Information Organization (CORHIO) and Quality Health Network (QHN) – as well as other regional and health systems-specific data exchange activities. However, not all providers and residents have access to the same capabilities, services, or service levels. |
| **PURPOSE** | The purpose of this initiative is to harmonize and expand health information sharing capabilities to serve Coloradans.<br><br>This will support improved care coordination, enhanced clinical outcomes, and better management of costs. |
| **OUTCOME(S)** | Providers and residents have access to similar data sharing services and capabilities across Colorado.<br><br>Ultimately, the result of full access to relevant health information is better outcomes for patients through better access to, and availability of, their health information; improved care team communication and coordination; and reduced health costs. |
| **SUGGESTED APPROACH(ES)** | **Discover/Plan**<br>1. Convene a multi-stakeholder group to identify the 6-10 highest priority services and capabilities that need to be available across Colorado and designate those as high priority capabilities to harmonize. |

2. Develop and implement plans that focus on harmonizing the prioritized services and capabilities.
3. Leverage the State's policy and technology infrastructure such as:
    - Data Sharing policies from the Governor's Data Advisory Board (GDAB)[38]
4. Leverage work from other states and federal resources such as:
    - California State Health Information Guidance[39] (SHIG)
    - Expanded Meaningful Use (MU) funding for "non-eligible" providers who connect to eligible providers.
    - The ONC report Connecting Public Health Information, Lessons Learned[40] to advance the connection of Colorado's Public Health to HIE.
    - IHE profiles[41]
    - Carequality Interoperability Framework[42]

**Implement**

5. Promote the Patient Centered Data Home[43] (PCDH) approach throughout the state and beyond.
6. Implement common policies, procedures, and technical approaches that promote the expanded use of health IT in Colorado.
7. Consider policy levers that require provider and payer participation in HIEs, and/or that support funding for HIEs through a possible use fee or tax.
8. Consider policy or other levers that require HIE participation for all reference laboratories in the state.

Consider implementing a program that qualifies entities to function as HIEs in Colorado. Leverage the work of other states such as Michigan,[44] New York,[45] and Minnesota.[46]

[38] Colorado's Governor's Office of Information Technology website, Government Data Advisory Board page accessed October 2017 at http://www.oit.state.co.us/cto/cim/government-data-advisory-board
[39] State of California Office of Health Information Integrity website, State Health Information Guidance (SHIG) on Sharing Sensitive Health Information page accessed October 2017 at http://www.chhs.ca.gov/OHII/Pages/shig.aspx
[40] Office of the National Coordinator of Health Information Technology. "Connecting Public Health Information Systems and Health Information Exchange Organizations , Lessons from the Field." September 2017. Accessed October 2017 at https://www.healthit.gov/sites/default/files/FINAL_ONC_PH_HIE_090122017.pdf
[41] IHE Profiles, https://www.ihe.net/Profiles/
[42] Sequoia Project website, Carequality Resources page accessed October 2017 at http://sequoiaproject.org/carequality/resources/
[43] Strategic Health Information Exchange Collaborative (SHIEC) website, Patient Centered Data Home page accessed October 2017 at http://strategichie.com/patient-centered-data-home-pcdh
[44] Michigan Shared Services (MiHIN) Website accessed October 2017 at www.mihin.org/faqs/
[45] New York eHealth Collaborative (SHIN-NY) Website accessed October 2017 at www.nyehealth.org/shin-ny/qualified-entities/
[46] Minnesota e-Health Webpage accessed October 2017 at http://www.health.state.mn.us/e-health/hie/certified/index.html

| | |
|---|---|
| **SUGGESTED INITIATOR** | OeHI, CORHIO, and QHN |
| **TIMING** | Continue and accelerate ongoing efforts |
| **INTERDEPENDENCIES** | Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #10 Consent Management<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA HITECH 90/10<br>• Subscription/User fees;<br>• Participant use fee/tax |

| 4. | INTEGRATE BEHAVIORAL, PHYSICAL, CLAIMS, SOCIAL, AND OTHER HEALTH DATA |
|---|---|
| **DOMAIN** | Governance |
| **DESCRIPTION** | This initiative will 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. |
| **BACKGROUND & FINDINGS** | Health care reform requires the integration of physical health, behavioral health, social services, and payer information to support the coordinated care of an individual.<br><br>Nationally, the integration and sharing of multiple types of health-related data is still in its early stages. Colorado has made strides in the integration of behavioral and physical health information through its SIM initiative, but multiple siloes of health, services, and payer information remain.<br><br>Examples of organizations/systems housing health or services information in Colorado include:<br>• Colorado's Medicaid Management Information System (MMIS)<br>• Colorado Department of Public Health and Environment (CDPHE)<br>• Colorado Department of Human Services (DHS)<br>• Colorado Office of Behavioral Health (OBH)<br>• Center for Improving Value in Health Care (CIVHC)<br>• Colorado Regional Health Information Organization (CORHIO)<br>• Dental/oral care providers<br>• Quality Health Network (QHN)<br>• Colorado Community Managed Care Network (CCMC)<br>• Regional Accountable Entities (RAEs) (formerly Regional Collaborative Care Organizations (RCCOs))<br>• Rural Health Clinics<br>• Hospitals and health systems<br>• Behavioral Health Centers<br>• Managed Services Organizations<br>• Clinically Integrated Networks<br>• Commercial payers<br>• Prescription Drug Monitoring Program (PDMP) |

| | |
|---|---|
| | There are multiple Federal[47,48,49,50,51,52] national, and multi-State efforts underway to address the integration and interoperability of health data. However, so far there is no agreed upon solution to the problem. |
| **PURPOSE** | The purpose of this initiative is to ensure that the various types of health information can be integrated and leveraged in a meaningful way. |
| **OUTCOME(S)** | Readily available access (as appropriate) to holistic information on an individual – when and where needed – resulting in both improved individual care and improved population health. |
| **SUGGESTED APPROACH(ES)** | 1. Leverage the use cases that have already been developed by various organizations and initiatives such as:<br>· Health Information Exchanges (HIEs)<br>· Community Mental Health Centers<br>· Federally Qualified Health<br>· Hospitals and health systems<br>· Payers<br>· Center for Improving Value in Health Care (CIVHC)<br>· Rural Health Clinics<br>· Colorado Rural Health Center<br>· HCPF Business Intelligence and Data Management (BIDM)<br>· Criminal justice<br>· State Innovation Model Initiative<br>· Colorado Office of Behavioral Health |

[47] The Office of the National Coordinator for Health Information Technology. "Connecting Health and Care for the Nation – A Shared Nationwide Interoperability Roadmap". October 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf

[48] The Office of the National Coordinator for Health Information Technology. "Report on Health Information Blocking". Report to Congress, April 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/reports/info_blocking_040915.pdf

[49] The Office of the National Coordinator for Health Information Technology. "2016 Interoperability Standards Advisory". Accessed October 2017 at https://www.healthit.gov/sites/default/files/2016interoperabilitystandardsadvisoryfinalv2_02.pdf

[50] The Office of the National Coordinator for Health Information Technology. "Standards and Interoperability Framework". Accessed October 2017 at https://www.healthit.gov/sites/default/files/pdf/fact-sheets/standards-and-interoperability-framework.pdf

[51] The Office of the National Coordinator for Health Information Technology. "Federal Health IT Strategic Plan 2015 – 2020". September 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/federal-healthIT-strategic-plan-2014.pdf

[52] Health IT.gov website, Health IT Standards Committee web page accessed October 2017 at https://www.healthit.gov/facas/health-it-standards-committee

| | |
|---|---|
| | • Regional Accountable Entities<br>• Local Public Health Agencies<br>2. Determine priority areas.<br>3. Focus implementation on the high priority areas.<br>4. The plan should consider that there are multiple platforms that store data. It should describe the process to make (and keep) the data elements compatible even while stored in different systems. Consider using a systems architect/integrator to help with assessment and planning.<br>5. Consider impact of various State and Federal Statutes such as HIPAA, FERPA, 42CFR Part 2, and others.<br>6. Leverage the<br>• State's Interoperability Roadmap[53]<br>• Interagency data sharing agreement<br>• State' s common infrastructure<br>• Actionable Intelligence for Social Policy initiative (AISP)[54]<br>7. Identify (not create) the standards that will be used for health information sharing in Colorado.<br>8. Review and assess the policies and statutes related to the integration and sharing of diverse types of information and make recommendations to align those policies where needed.<br>9. Consider creating a central place to obtain legal opinions on how data can or cannot be shared.<br>• Resource for legal interpretation of HIPAA<br>• Provide advice to use cases as they arise |
| **SUGGESTED INITIATOR** | OeHI, HCPF, CIVHC, SIM |
| **TIMING** | Continue and accelerate ongoing efforts |
| **INTERDEPENDENCIES** | Initiative #5 Statewide Health Information Governance<br>Initiative #6 Health IT Portfolio/Program Management<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #10 Consent Management<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #14 Uniquely Identify a Person Across Systems |

[53] US Department of Health & Human Services website, Administration for Children & Families, State of Colorado Interoperability and Integration Project web page accessed October 2017 at https://www.acf.hhs.gov/state-of-colorado-interoperability-and-integration-project

[54] AISP Website, Home Page accessed October 2017 at https://www.aisp.upenn.edu/

| | |
|---|---|
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA HITECH 90/10<br>• SIM funding<br>• Grants<br>• State Funding<br>• Foundations<br>• Public/private partnerships |

## 5. STATEWIDE HEALTH INFORMATION GOVERNANCE

| | |
|---|---|
| **DOMAIN** | Governance |
| **DESCRIPTION** | This initiative puts in place a governance structure to support statewide health information sharing and use. This governance structure includes statewide health data governance. |
| **BACKGROUND & FINDINGS** | The success of health care reform depends – at least partially – on high quality, trusted data, which can be readily and appropriately accessed and shared.<br><br>In Colorado, there are multiple organizations and systems – public and private – housing health information. Many of these organizations share information, but there are many that cannot effectively and efficiently share their health-related data outside their own organization.<br><br>This often results in multiple inconsistent "sources of truth" for health data – the consequences of which include lack of trust in the data, overlap of requests for data, incomplete information available, lack of integration of clinical and claims (and other) data, and overall difficulty in sharing health information and obtaining the information necessary for improving the quality and cost of care.<br><br>Health information governance includes the overall management of the availability, quality, integrity, and security of the data being used. Sound health information governance includes a governing body or council, a defined set of policies and procedures, and a plan and resources to execute those procedures.<br><br>Many times, the terms information governance and data governance are used interchangeably. For the purpose of clarifying this initiative, they are defined as follows.<br><br>***Information Governance*** **provides the business context in which data is controlled.** It is a business or compliance/legal driven approach to managing and controlling how all enterprise content is used, retained, and destroyed.<br><br>Where and when possible, it should also define "unambiguous sources of truth" for health information. Information governance is typically a business responsibility and provides the "rules of the road" for the information. |

| | |
|---|---|
| | ***Data Governance*** refers to the overall management of the availability, usability, integrity, and security of the data in an enterprise. Data governance is typically part of an overall information governance program. |
| **PURPOSE** | The purpose of this initiative is to develop and implement policies, common processes, and procedures to improve the accuracy and interoperability of health information so that there is a common statewide approach to managing health information that is shared across organizations. |
| **OUTCOME(S)** | High quality, trusted health data – across the spectrum of health and social services – that can be readily accessed and used when and where needed. |
| **SUGGESTED APPROACH(ES)** | **For Information Governance**<br>**Discover**<br>1. Identify the various categories of and uses for health information that is shared such as:<br>· Treatment<br>· Payment<br>· Operations<br>· Research<br>· Clinical information<br>· Support services<br>· Population Health<br>· Social Services<br>· Behavior Health<br>· Care coordination<br>· Quality measures<br>· Personal health records<br>· Determine the value of care<br>2. Identify and assess data use policies at the state level and multi-organizational levels to develop recommendations to align policies statewide.<br>· Address issues such as data stewardship (vs. ownership)<br>· Allowable usage<br>· Business rules impacting the storage and use of health information<br>· Include data relating to social determinants of health as well as specific health and social services data. |

**Plan**

3. Create a multi-stakeholder advisory council with members from both public and private sectors to advise on policy and other issues.
4. Prioritize which categories should be addressed early such as those which have a patient safety component, promote better patient care, and care coordination, apply statewide, etc.
5. Leverage current Colorado efforts and organizations, such as:
   - eHealth Commission
   - Governors Data Advisory Board
   - State Innovation Model
   - QHN, CORHIO
   - CIVHC
   - Health systems, clinically integrated networks, and managed care organizations
6. Leverage state and federal policies and tools, such as:
   - The Improving Medicare Post-Acute Care Transformation Act of 2014 (the IMPACT Act)[55]
   - Information Blocking Report[56]
   - 2017 Interoperability Standards Advisory[57]
   - Federal Health Architecture[58]

**Implement**

7. Develop/modify statewide rules/guidelines for how health information that is shared will be used.
8. Communicate to health providers, payers, and the public on these updated guidelines.

**For Data Governance**

1. Develop an inventory of key health and health-related information collected and/or used by the state.
2. Use this inventory to understand the categories and characteristics of the various participants in the health care ecosystem in Colorado and what data needs to be shared

[55] The IMPACT Act requires the submission of standardized data by Long-Term Care Hospitals (LTCHs), Skilled Nursing Facilities (SNFs), Home Health Agencies (HHAs) and Inpatient Rehabilitation Facilities (IRFs)Centers for Medicare and Medicaid. "Summary of Feedback from the Technical Expert Panel (TEP) Regarding Cross-Setting Measures Aligned with the IMPACT Act of 2014". April 2015. Accessed September 2017 at https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/Downloads/SUMMARY-OF-FEEDBACK-FROM-THE-TECHNICAL-EXPERT-PANEL-TEP-REGARDING-CROSS-SETTING-MEASURES-ALIGNED-WITH-THE-IMPACT-ACT-OF-2014-Report.pdf

[56] The Office of the National Coordinator for Health Information Technology. "Report on Health Information Blocking". Report to Congress, April 2015. Accessed October 2017 at https://www.healthit.gov/sites/default/files/reports/info_blocking_040915.pdf

[57] HealthIT.gov website, Standards Advisory web page accessed October 2017 at www.healthit.gov/standards-advisory

[58] HealthIT.gov website, Federal Health Architecture (FHA) web page accessed October 2017 at www.healthit.gov/policy-researchers-implementers/federal-health-architecture-fha

| | |
|---|---|
| | across systems and organizations.<br>3. Leverage current Colorado efforts and organizations, such as:<br>· State Joint Agency Interoperability Project[59]<br>· Data sharing agreements<br>4. Identify priority data issues, and focus on standardizing key data elements across state agencies, then across the state.<br>5. Develop and implement a set of statewide standards, policies, and best practices for sharing of health and health-related data.<br>6. Develop a statewide recognized data format for longitudinal health and health-related data source(s).<br>7. Provide education on what data governance is and to what it applies.<br>8. Recognize that there are different norms for various kinds of data. |
| **SUGGESTED INITIATOR** | OeHI |
| **TIMING** | Q4 2017 |
| **INTERDEPENDENCIES** | Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #9 Best Practices for Health Information Cybersecurity Threats and Incidents<br>Initiative #10 Consent Management<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #15 Unique Provider Identification and Organizational Affiliations |
| **POTENTIAL FUNDING SOURCE(S)** | • State budget<br>• Subscription and user fees<br>• Foundation funding<br>• ARRA/HITECH 90/10 |

[59] US Department of Health & Human Services website, Administration for Children & Families, State of Colorado Interoperability and Integration Project web page accessed October 2017 at https://www.acf.hhs.gov/state-of-colorado-interoperability-and-integration-project

## 6. HEALTH IT PORTFOLIO/PROGRAM MANAGEMENT

| | |
|---|---|
| **DOMAIN** | Governance |
| **DESCRIPTION** | This initiative puts in place a State-level Health IT Portfolio/Program Management function. |
| **BACKGROUND & FINDINGS** | The Office of eHealth Innovation (OeHI) as part of developing this *Roadmap*, in collaboration with other state agencies and Colorado's State Innovation Model (SIM) initiative conducted an environment scan in 2017 to identify the number, types, and scope of health IT projects across state agencies and statewide.<br><br>This scan revealed over 90 individual health IT projects. This number includes several projects that are focused on integrating or leveraging health information exchanges, five electronic health record projects, several data sharing and interoperability efforts, legacy system upgrades and enhancements, and several innovation projects within the SIM initiative.<br><br>Currently, the responsibility for health IT oversight resides in multiple departments and organizations. There is no single oversight body that has a comprehensive view of the entire range of statewide health IT needs and activities – that is authorized to set priorities, ensure collaboration among programs, optimize spending and resources, and minimize gaps and overlaps – on a statewide basis. |
| **PURPOSE** | The purpose of this initiative is to design, develop, and operate a function that provides overall program management and coordination for the state's various health IT projects and initiatives. |
| **OUTCOME(S)** | An operational entity exists that is authorized, funded, and accountable for the coordination and success of statewide health IT projects/programs/initiatives.<br><br>The Health IT Initiatives identified in this *Roadmap* are efficiently and effectively implemented, aligned with other statewide health IT initiatives, and measurably contribute to Colorado's health care reform goal(s). |

| | |
|---|---|
| **SUGGESTED APPROACH(ES)** | Create[60] an entity, with appropriate accountability and authority to coordinate and align the health IT priorities, activities, and resources across the state.<br><br>**Suggested responsibilities/accountabilities**<br>1. Ensure funding, resources, and efforts for statewide health IT Roadmap Initiatives are prioritized, optimized, and coordinated.<br>2. Ensure that initiatives related to *Colorado's Health IT Roadmap* are successfully implemented.<br>· This includes reducing or eliminating gaps and unnecessary overlaps among projects and capabilities.<br>· Ensure that the projects implementing the initiatives are well run, meet their objectives, and deliver the value expected.<br>· Acquire once, and leverage efficiencies of scale wherever possible.<br>3. Ensure that health data resources that are not directly governed by this entity, but are crucial to statewide health IT success, are coordinated/aligned.<br>4. Establish advisory groups/councils (e.g. business and technical) comprised of appropriate stakeholders to ensure broad ongoing stakeholder input and support. |
| **SUGGESTED INITIATOR** | OeHI – as accountable organization<br>Colorado Office of Information Technology (OIT) – as resource and managing organization |
| **TIMING** | Q3 2018 |
| **INTERDEPENDENCIES** | Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #5 Statewide Health Information Governance<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #8 Accessible and Affordable Health Analytics<br>Initiative #12 Statewide Health Information Technical Architecture |
| **POTENTIAL FUNDING SOURCE(S)** | State budget |

[60] Create implies: fund, staff, and launch

# RESOURCES / FINANCIAL

| 7. | ACCESSIBLE AND AFFORDABLE HEALTH IT AND INFORMATION SHARING |
|---|---|
| **DOMAIN** | Resources/Financial |
| **DESCRIPTION** | This initiative will 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. |
| **BACKGROUND & FINDINGS** | Colorado has a high rate of health IT adoption and use. However, there are large disparities across the state when it comes to the level of access, availability, capabilities, and affordability of these systems. |
| **PURPOSE** | The purpose of this initiative is to remove the barriers (cost, time, talent, and other resources) providers face that prevent equitable access to health information in Colorado.<br><br>A focus will be placed on those providers who are most in need such as rural providers, small independent practices, and those who were not eligible for meaningful use incentives. |
| **OUTCOME(S)** | For providers across Colorado, there is equitable access to health information – so that it is available when and where needed. |
| **SUGGESTED APPROACH(ES)** | **Plan**<br>1. Consider developing a "think tank" where new and innovative approaches such as payment and procurement – can be aired and discussed.<br>2. Conduct a scan of Colorado stakeholders to:<br>· Understand and prioritize their needs<br>· Obtain input on their suggested solutions.<br>**3.** Build upon and expand programs for incenting providers to adopt and appropriately use EHRs or other tools and to actively utilize the data within the HIE.<br>4. Consider recommending State policies and funding to assist providers/organizations not yet using EMRs and/or HIEs, such as:<br>· Continue and expand incentive program to support providers not previously eligible for MU incentives.<br>· Include independent psychologists, licensed counselors, |

| | |
|---|---|
| | and social workers as well as designated agencies and long-term supports and services providers<br><br>**Implement**<br>5. Leverage expansion of allowable MU payments as described in SMD # 16-003.[61,62]<br>6. Leverage current programs such as:<br>· Programs similar to the Regional Extension Center[63] (REC) programs under HITECH<br>· CORHIO's EMR selection and implementation services<br>· Clinical Health Information Technology Advisors (CHITA)<br>· Review other successful support models such as HealthARCH[64] working in conjunction with the University of Central Florida.<br>7. Collaborate with college and university programs throughout Colorado to prepare workforce talent for health informatics, analytics, program management, and change management.<br>8. Where policies are not aligned to remove barriers to the use of HIE, consider recommending updates. Coordinate with – and leverage – federal, state, payer, and private incentive programs. |
| **SUGGESTED INITIATOR** | Colorado Rural Health Center, Colorado Community Managed Care Network (CCMCN), HCPF |
| **TIMING** | Continue and accelerate ongoing efforts |
| **INTERDEPENDENCIES** | Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #5 Statewide Health Information Governance<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA HITECH 90/10<br>• Grants and Foundations<br>• Public/Private partnerships |

[61] US Department of Health & Human Services memo to State Medicaid Directors, "Availability of HITECH Administrative Matching Funds to Help Professionals and Hospitals Eligible for Medicaid EHR Incentive Payments Connect to Other Medicaid Providers," February 29, 2016. Accessed October 2017 at https://www.medicaid.gov/federal-policy-guidance/downloads/SMD16003.pdf

[62] CMS webinar presentation slides, "Expanded Support for Medicaid Health Information Exchanges", March 2016 . Accessed October 2017 at https://www.healthit.gov/sites/default/files/smd_presentation_for_learning_event_3-8-16.pdf

[63] HealthIT.gov website, Regional Extension Centers web page accessed October 2017 at https://www.healthit.gov/providers-professionals/regional-extension-centers-recs

[64] University of Central Florida website, HealthARCH web page accessed October 2017 at http://ucf-rec.org/

## 8. ACCESSIBLE AND AFFORDABLE HEALTH ANALYTICS

| | |
|---|---|
| **DOMAIN** | Resources/Financial |
| **DESCRIPTION** | This initiative will develop and implement approaches for making health analytics accessible and affordable. |
| **BACKGROUND & FINDINGS** | One key to successful health care reform is understanding the value and the effectiveness of the care and the services delivered. This requires a robust ability to measure and analyze both the outcomes of care and the associated cost(s) of that care.<br><br>On a larger scale, understanding population level outcomes is necessary to both identify trends and areas for concern as well as to gauge the state's overall progress on health care reform.<br><br>As the ability to capture, aggregate and analyze information increases, the health care system will mature in its ability to not only understand what happened – and why – but also to take actions to prevent or reduce untoward events.<br><br>While there are multiple ongoing projects and activities in Colorado to provide analytics today, access to the tools necessary for even the basic level of analytics is out of reach of many provider organizations. As a result, there is wide disparity around the state in the ability of providers to access needed analytics capabilities. |
| **PURPOSE** | The purpose of this initiative is to ensure that a meaningful and affordable level of health analytics capability – with clinical, services, and payer information – is available to Colorado stakeholders. |
| **OUTCOME(S)** | There are affordable and accessible analytics and reporting capabilities – that support Colorado's Triple Aim – that meet the needs of multiple providers and stakeholders. |
| **SUGGESTED APPROACH(ES)** | **Discover**<br>1. Work with providers to understand their priority needs regarding access to analytics tools and reports. Needs may include answers to questions such as the following.<br>• In what areas do I, as a provider, need improvement? |

- How do my outcomes – and patient acuity – compare with other similar practices?
- What are the key health needs of the population that I serve?
- Which patients are attributed to my practice that we have never seen?
- Which patients have had visits elsewhere that provided the necessary follow up?

2. Identify the types of uses/categories for analytics such as:
   - Clinical research
   - Population health
   - Individual provider/practice performance
   - Costs of care
   - Quality reporting
3. Develop use cases for the areas of high priority need – as defined by providers and other key stakeholders.

**Plan**

4. Consider innovative ways of aggregating data sources.
5. Work with stakeholders to identify the high priority needs where there are gaps in analytics capability.
6. Develop use cases based upon these priority needs and select key capabilities to focus development and implementation.

**Implement**

7. Develop and implement tools to address the high priority use cases to provide (at least) a base set of statewide health analytics services.
8. Leverage the current tools and knowledge from organizations such as:
   - Center for Improving Value in Health Care (CIVHC)
   - Department of Public Health and Environment (CDPHE)
   - Colorado Dept. of Health Services (CDHS)
   - Colorado Longitudinal Study[65] (COLS)
   - Health information Exchanges (HIEs)
   - CMS Quality Improvement Organizations (QIOs)
   - Colorado Hospital Association
   - Colorado Rural Health Center
   - Colorado Health Institute
   - Colorado Universities
9. Leverage statewide resources such as:
   - Colorado registries
     - Electronic Birth Registration System

[65] Colorado Longitudinal Study website, Home page accessed October 2017 at http://www.coloradolongitudinalstudy.org/

| | |
|---|---|
| | - Electronic Death Registration System<br>- Birth Defects Registry<br>- Cancer Registry<br>- Medical Marijuana Registry<br>- Colorado Electronic Disease Reporting System<br>- Colorado Immunization Information System<br>- Trauma Registry<br>• Colorado's Business Intelligence & Data Management (BIDM) tool<br>10. Consider creating an advisory service to direct people to resources to address questions/needs such as:<br>• What are you going to do with the information?<br>• What changes do I need to make now that I have this information?<br>• We need help with the analysis and developing next action steps – glean insights and change how we do work.<br>• What do I do in response to all that information?<br>• Provide basic tools to a broad set of users.<br>• Develop/implement standard APIs to promote easier access to data.<br><br>**Considerations**<br>• Must provide timely access to results (reports).<br>• A one-size-fits-all approach is not recommended.<br>• Include use and integration of multiple data sources like claims and clinical data to maximize cost-effectiveness analyses.<br><br>Create an environment where analytics thrives. |
| **SUGGESTED INITIATOR** | CCMCN, CIVHC, CORHIO, QHN |
| **TIMING** | Begin Q3 2018 |
| **INTERDEPENDENCIES** | Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #9 Best Practices for Health Information Cybersecurity Threats and Incidents<br>Initiative #10 Consent Management<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #13 Ease Quality Reporting Burden |

| | |
|---|---|
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA/HITECH 90/10<br>• MMIS Maintenance & Operations (50/50 or 75/25)<br>• User/service/subscription fees<br>• State agencies<br>• State budget<br>• Foundations<br>• Public/private partnerships |

# PRIVACY & SECURITY

| 9. | BEST PRACTICES FOR HEALTH INFORMATION CYBERSECURITY THREATS AND INCIDENTS |
|---|---|
| **DOMAIN** | Privacy & Security |
| **DESCRIPTION** | This initiative promotes the identification, and statewide sharing, of cybersecurity best practices. |
| **BACKGROUND & FINDINGS** | Cyber threats and incidents in health care are becoming increasingly frequent around the country. Colorado is no exception.<br><br>While it may not be possible to totally prevent an attack, the State must ensure that best cybersecurity practices are widely known and applied. Broad application of best practices related to cybersecurity is a known (and recommended) approach to minimize the chances of an attack – and to minimize the damage should one occur. |
| **PURPOSE** | The purpose of this initiative is to ensure that all Colorado health stakeholders have access to best practice information – and the resources and capabilities – to protect health information from cyberattack. |
| **OUTCOME(S)** | All health-related organizations have access to current information on cybersecurity best practices, the means to implement them, and are protected from cybersecurity threats to the level of current best practices. |
| **SUGGESTED APPROACH(ES)** | **Discover**<br>1. Conduct a statewide environmental scan to determine the key vulnerabilities in Colorado's health information. For example, Assess:<br>· Technology<br>· Processes<br>· Resources<br>· Level of understanding<br>2. Identify the barriers that providers face in implementing security best practices.<br><br>**Plan**<br>3. Identify high priority vulnerabilities and identify key barriers to address.<br>4. Develop and implement communication and education |

approaches that are appropriate to various levels of understanding.

5. Approaches should address multi-device, multi-channel access to (appropriate) sources of statewide health and health-related information and services.
6. Provider systems should be assessed regularly for security risk.
7. Leverage state resources such as:
   - Secure Colorado, Colorado's Strategy for Information Security and Risk Management, Fiscal Years 2017-2019[66]
   - Office of Information Security in OIT[67]
   - Governor's Cybersecurity Council[68]
   - Colorado Division of Securities Final Cybersecurity Rules[69]
8. Leverage the National Cybersecurity Center[70] (NCC) located in Colorado Springs.

**Develop and Implement**

9. Involve key stakeholders to help develop tools including standards, policies, and best practices for security of health and health-related data that can be used statewide.
10. Use publicly available communications channels for dissemination of best practices – such as the Health IT Security website[71]
11. Convene cybersecurity experts from around the state (and nation) regularly to discuss cybersecurity, share best practices, and identify common issues relevant to Colorado.
12. Consider cybersecurity needs based on assessment of community infrastructure (urban versus rural versus frontier), income levels (ability to access information securely from lower cost technology), access to resources, etc.
13. Work with smaller provider organizations to develop ways to improve their cybersecurity efforts.
    - Consider forming a team that can be devoted to the smaller/rural organizations and provide virtual support.

[66] State of Colorado Governor's Office of Information Technology. "Secure Colorado, Colorado's Strategy for Information Security and Risk Management, Fiscal Years 2017-2019," January 1, 2017. Accessed October 2017 at https://drive.google.com/file/d/0B0lQVOYmWcOoa2dadGQwZURUdVU/view

[67] State of Colorado Governor's Office of Information Technology website, Office of Information Security ( OIS) web page accessed October 2017 at http://oit.state.co.us/ois

[68] State of Colorado website, Governor's Cybersecurity Council web page accessed October 2017 at www.colorado.gov/pacific/dhsem/governors-cybersecurity-council

[69] Colorado Department of Regulatory Agencies, Division of Securities. "Rules Under the Colorado Securities Act," May 15, 2017. Accessed October 2017 at https://drive.google.com/file/d/0BymCt_FLs-RGdTBjRUZ4Ul92UDA/view

[70] National Cybersecurity Center website, Home page accessed October 2017 at https://www.nationalcybersecuritycenter.org/. ( "The National Cybersecurity Center (NCC) provides collaborative cybersecurity response services with comprehensive knowledge and capabilities through training, education, and research".)

[71] HealthIT Security website, Cybersecurity Best Practices web page accessed October 2017 at https://healthitsecurity.com/tag/cybersecurity-best-practices

| | |
|---|---|
| **SUGGESTED INITIATOR** | OeHI, CCMCN |
| **TIMING** | Continue ongoing efforts – intensify/optimize Q2 2018 |
| **INTERDEPENDENCIES** | Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #5 Statewide Health Information Governance |
| **POTENTIAL FUNDING SOURCE(S)** | • State budget, expertise, staffing, and resources<br>• ONC, NIST, and other national resources<br>• Service/use/consulting fees |

## 10. CONSENT MANAGEMENT

| | |
|---|---|
| **DOMAIN** | Privacy & Security |
| **DESCRIPTION** | This initiative develops and implements a statewide approach to consent management that aligns and harmonizes the consents required for health information sharing in Colorado. |
| **BACKGROUND & FINDINGS** | Health care reform requires the integration of physical health, mental health, social services, and payer information to enable the coordinated care of an individual. Currently, an individual may need to provide his/her consent multiple times – and to multiple providers – for their information to be shared.<br><br>Providers in Colorado have adopted various approaches, and use different forms, to obtain consent to share health information. Various organizations have different tolerance for risk and their consent forms are often a tangible indication of those differences.<br><br>This inconsistency in both understanding and process contributes to a lack of complete patient information that is readily and appropriately available at the point of care.<br><br>The sharing and integration of health information is further inhibited by multiple interpretations of HIPAA, State requirements for sharing protected health information, and the specific rules of disclosure found in 42 CFR Part 2[72]. |
| **PURPOSE** | The purpose of this initiative is to remove the barriers to, uncertainties around, and wide variance in practices used for obtaining consent to share an individual's health information.<br><br>The initiative will develop and implement common policies and procedures for obtaining consent that can be used consistently and regularly by providers statewide. |

[72] US Department of Health & Human Services Website, "State of Colorado Interoperability and Integration Project." Accessed October 2019 at https://www.acf.hhs.gov/state-of-colorado-interoperability-and-integration-project.

| | |
|---|---|
| **OUTCOME(S)** | There is a common understanding – and consistent implementation – of consent policies and procedures for sharing health information.<br><br>The consents to share health information are harmonized across Colorado.<br><br>Automated consents are available and used. |
| **SUGGESTED APPROACH(ES)** | Develop a common consent process and tools – usable statewide – for obtaining consent for sharing health information. Ensure this process supports person-directed care.<br><br>**Discover**<br>1. Conduct environmental scan to identify variations in consents used around the state.<br>2. Obtain provider, consumer, legal, and other expert opinions as a foundation for developing the approach.<br>**Plan**<br>3. Leverage Colorado resources such as:<br>· Advanced Interoperability Grant[73] work done by CORHIO and QHN.<br>· Colorado's State Innovation Model (SIM)[74,75] grant.<br>· Colorado Children and Youth Information Sharing (CCYIS) Initiative[76]<br>· How Colorado's HIEs are able to query on consent.<br>· "Behavioral Health Data Exchange in Colorado," a white paper published in June 2017[77]<br>4. Harmonize consents to develop common process/forms that can be used statewide.<br>5. Ensure that the process for obtaining consent is well-integrated into providers' workflow.<br>6. Incorporate behavioral health data when appropriate.<br>7. Consider creating incentives to adopt the statewide consent approach. |

[73] CORHIO eNewsletter, "Colorado Advanced Interoperability Initiative – Making Behavioral Health Data Available to Community Providers," July 13, 2016. Accessed October 2017 at http://www.corhio.org/news/2016/7/13/732-colorado-advanced-interoperability-initiative--making-behavioral-health-data-available-to-community-providers

[74] State of Colorado website, SIM (State Innovation Model) web page, accessed October 2017 at www.colorado.gov/healthinnovation

[75] State of Colorado Governor's Office of Information Technology. "Secure Colorado, Colorado's Strategy for Information Security and Risk Management, Fiscal Years 2017-2019," January 1, 2017. Accessed October 2017 at https://drive.google.com/file/d/0B0IQVOYmWcOoa2dadGQwZURUdVU/view

[76] State of Colorado website, Division of Criminal Justice, Department of Public Safety web page accessed October 2017 at www.colorado.gov/pacific/dcj/ccyis

[77] CORHIO and QHN. "Behavioral Health Data Exchange in Colorado", June 2017. Retrieved October 2017 from https://drive.google.com/file/d/0B23Qq7mWJrhxcGdnMDVGdFpuM2s/view

| | |
|---|---|
| | 8. Research the consent processes that other states have developed for statewide use.<br>9. Include considerations for consent requirements for cross-state sharing of information.<br>10. Involve key stakeholders in coming to consensus around a consent approach that would be used statewide.<br>· Draft a proforma consent and vet with stakeholders statewide – revising as necessary.<br><br>**Education**<br>11. Provide education and outreach to providers and consumers relating to consent processes, options, and the impact of choices.<br>12. Continue to use Regional Extension Center-like resources to implement across providers where appropriate.<br><br>**Implementation**<br>13. Consider creating policies or statutes that facilitate/promote the sharing of health information.<br>14. Consider offering automated consent management tools as a service. |
| **SUGGESTED INITIATOR** | CORHIO, QHN, SIM |
| **TIMING** | Begin immediately |
| **INTERDEPENDENCIES** | Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #2 Promote and Enable Consumer Engagement, Empowerment, and Health Literacy<br>Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #15 Unique Provider Identification and Organizational Affiliations |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA/HITECH 90/10<br>• User/subscription fees<br>• Public/private partnerships<br>• Foundations |

# INNOVATION

## 11. DIGITAL HEALTH INNOVATION

| | |
|---|---|
| **DOMAIN** | Innovation |
| **DESCRIPTION** | This initiative facilitates programs, processes, and partnerships that foster health-related innovation in Colorado. |
| **BACKGROUND & FINDINGS** | Colorado has one of the nation's leading health, and digital health, innovation ecosystems in the country. Several hundred innovative companies have formed in Colorado and they have developed solutions that are changing the health care landscape. Longstanding companies and health providers are also innovating. Colorado's innovation community is one of the state's most significant digital health assets. |
| **PURPOSE** | The purpose of this initiative is to engage and focus Colorado's digital health innovation community and leverage innovation to accelerate transformation of health care within the state – and the nation.<br><br>Realize *Roadmap Objectives* through innovative approaches and deliver higher value to Coloradans. |
| **OUTCOME(S)** | Continued measurable progress on the Governor's Dashboard for Health.<br><br>Significantly reduced barriers for digital health innovators in accessing requirements, markets, and capital.<br><br>Accelerated progress on Colorado's version of the Triple Aim: Best Care, Best Health, Best Value. |
| **SUGGESTED APPROACH(ES)** | Develop and implement a program to foster health care and health-related innovation between and among digital innovation centers/incubators, private and public/private organizations, state agencies, and other public organizations. |

| | |
|---|---|
| | **Facilitate Innovation**<br>1. Partner with and leverage work in the innovation community. Representative examples include: Prime Health[78], 10.10.10,[79] Healthy Transitions Colorado,[80] and others.<br>2. Assist innovators to break through barriers such as the resistance of health care providers and State agencies to use small vendors or to try innovative ways of doing things.<br>· Consider provider/payer/other incentives.<br>· Publish a "road map" for innovators to more easily and more rapidly navigate the State's procurement processes.<br>3. Support the work that is underway to develop a test bed of community data for innovation that can be used for innovation.<br><br>**Provide Guidance**<br>4. The eHealth Commission, with broad stakeholder input, should identify Colorado's top three (3) priorities for health innovation and consider hosting an "Innovation Challenge" focused on these priorities<br>5. Continue to align the innovation community with the state's key health priorities (via Summits, Meet Ups, communications, etc.).<br>6. Prioritize results of the 2017 Prime Health Innovation Summit to guide innovators in their efforts.<br>7. Develop actionable next steps and consider the need for multi-device, multi-channel access to (appropriate) sources of statewide health and health-related information and services.<br>8. Encourage innovative approaches to the tools called for in this *Roadmap*.<br><br>**Assist with Communication/Marketing**<br>9. Highlight and communicate programs and sources that can help fund innovation.<br>10. Highlight Colorado innovations both locally and nationally. |
| **SUGGESTED INITIATOR** | OeHI, HCPF, Prime Health, State CIO |
| **TIMING** | Continue ongoing efforts – Q2 2018 (May Summit) |

[78] Prime Health website, Home page, accessed October 2017 at http://www.primehealthco.com/
[79] 10.10.10 website, Home page, accessed October 2017 at www.101010.net
[80] Healthy Transitions Colorado website, Resources page, Innovation in Colorado, accessed October 2017 at http://healthy-transitions-colorado.org/innovation-in-colorado

| | |
|---|---|
| **INTERDEPENDENCIES** | This initiative is dependent upon key partnerships in the innovation community and engaged stakeholders<br><br>Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #2 Promote and Enable Consumer Engagement, Empowerment, and Health Literacy<br>Initiative #5 Statewide Health Information Governance<br>Initiative #6 Health IT Portfolio/Program Management<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #8 Accessible and Affordable Health Analytics<br>Initiative #9 Best Practices for Health Information Cybersecurity Threats and Incidents<br>Initiative #10 Consent Management<br>Initiative #13 Ease Quality Reporting Burden<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #15 Unique Provider Identification and Organizational Affiliations |
| **POTENTIAL FUNDING SOURCE(S)** | • Private sector funding<br>• Foundation funding<br>• State/Federal challenge grants |

# TECHNOLOGY

## 12. STATEWIDE HEALTH INFORMATION TECHNICAL ARCHITECTURE

| | |
|---|---|
| **DOMAIN** | Technology |
| **DESCRIPTION** | This initiative investigates, develops, and implements approaches to optimize Colorado's health information technical architecture. |
| **BACKGROUND & FINDINGS** | In Colorado, there are many organizations and systems – both public and private – that collect, house, and disseminate health information. The result of these multiple – often disparate systems – is gaps and overlaps in the information and differences in the quality of the information.<br><br>This often results in multiple inconsistent "sources of truth" for data – the consequences of which include lack of trust in the data, overlap of requests for data, incomplete information available, lack of integration of clinical and claims (and other) data, and overall difficulty in obtaining and sharing the information necessary for improving the quality and cost of care.<br><br>With the massive and ever-increasing amount of digital (health) information, an information architecture is essential to ensure that people can access – and trust – the information they need when and where they need it.<br><br>Having a complete and well documented Health Information Technical Architecture will enable the state to make effective decisions about which projects to pursue and the technology or products to use in the implementation.<br><br>This may also be referred to as Enterprise (Reference) Architecture. |
| **PURPOSE** | The purpose of this initiative is to develop and document agreed upon technical approaches and processes to capture, store/manage, and disseminate health information in Colorado. |
| **OUTCOME(S)** | An agreed upon statewide logical technical architectural model that optimizes how health information in Colorado is captured, managed, and disseminated. |

| | |
|---|---|
| **SUGGESTED APPROACH(ES)** | A statewide Health Information Technical Architecture encompasses all the characteristics of an Enterprise information architecture, but is focused on health information. It includes common policies, procedures, and technical approaches that both support and promote the expanded use of health IT in Colorado.<br><br>**Discover**<br>1. Conduct an environmental scan to understand the current statewide and state agency health information technical infrastructure/architecture(s) to:<br>· Gain an understanding of the categories and characteristics of the various participants in the health care ecosystem in Colorado.<br>· Understand what components are already in place.<br>· Identify interfaces already in place, as well as those that are planned.<br>· Understand what resources are available to effectively and efficiently leverage.<br>2. Work with key stakeholder groups to understand their needs for – and contributions to – health information.<br><br>**Plan**<br>3. Create a vision of how the various types of health information systems work together.<br>· Show how different services will be made available.<br>· Include the supporting services that are optimized for (large-scale) multiple uses and multiple users.<br>4. Leverage the "Colorado Client Information Sharing System Interoperability Roadmap."[81]<br>5. Identify and develop high priority use cases for development.<br>6. Involve key stakeholders to develop and evaluate various pro forma models – especially of high priority use cases – to optimize the collection, management, and dissemination of health information across organizations.<br><br>**Implement**<br>7. Involve key stakeholders to develop/select the model to implement.<br>8. Educate stakeholders on how to use the model.<br>9. Involve key stakeholders in the on-going development and maintenance of the model.<br>10. Explore creating a permanent governing body for the information architecture as part of overall information governance. |

[81] Colorado Division of Criminal Justice Website, Children and Youth Information Sharing web page accessed October 2017 at www.colorado.gov/pacific/dcj/ccyis

| | |
|---|---|
| | **Considerations**<br>• Determine the scope of what is included in the information architecture.<br>• The architecture must be scalable and able to evolve over time.<br>• The approach should be to use a "capture once, store simply, disseminate as required".<br>• The architecture should support care being delivered in the most appropriate, mutually convenient, cost effective manner.<br>• The architecture must accommodate multi-device, multi-channel access to (appropriate) sources of statewide health and health-related information and services including:<br>  ◦ Statewide health care price and quality information.<br>  ◦ Access to, and integration of, disease and other types of registries. |
| **SUGGESTED INITIATOR** | OeHI, OIT |
| **TIMING** | Begin immediately |
| **INTERDEPENDENCIES** | Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #6 Health IT Portfolio/Program Management<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #8 Accessible and Affordable Health Analytics<br>Initiative #9 Best Practices for Health Information Cybersecurity Threats and Incidents<br>Initiative #10 Consent Management<br>Initiative #11 Digital Health Innovation<br>Initiative #13 Ease Quality Reporting Burden<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #15 Unique Provider Identification and Organizational Affiliations<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA/HITECH 90/10<br>• MMIS Maintenance & Operations (50/50 or 75/25)<br>• State budget funds |

## 13. EASE QUALITY REPORTING BURDEN

| | |
|---|---|
| **DOMAIN** | Technology |
| **DESCRIPTION** | This initiative provides technology support to ease the capture, aggregation, and reporting of agreed upon, quality reporting measures. |
| **BACKGROUND & FINDINGS** | Providers are inundated with, and over-burdened by, the multiple reporting requirements from State and Federal programs – as well as various commercial payers. Many of these requirements request the same or similar data, but in different formats and on different schedules. This lack of coordination causes an increased workload, with little or no recognized return, for the providers.<br><br>In addition to these varied reporting requirements, many providers still need to enter much of the data manually because not all EHRs capture (or calculate) the data necessary for quality reporting.<br><br>Providers are typically willing to provide the data but are seeking relief from the multiple, sometimes redundant, requests by multiple entities such as ACOs, commercial payers, Medicaid, Medicare, and other State programs. |
| **PURPOSE** | The purpose of this initiative is to ease the burden on providers for submitting quality measures.<br><br>This initiative should provide tools that streamline the processes used to report on quality measures. |
| **OUTCOME(S)** | Reduced reporting workload for providers. Simplified and streamlined processes for reporting required measures.<br><br>Affordable tools readily available to assist providers with the capture and reporting of their quality data. |
| **SUGGESTED APPROACH(ES)** | **Discover**<br>1. Conduct an environmental survey to understand providers' various reporting requirements, formats, and schedules. Leverage work already done such as SIM environmental scan, |

| | |
|---|---|
| | RCCO HIT/HIE assessment, Community Mental Health Center (CMHC) assessment, and TEFT Grant assessment.<br>2. Assess EHRs and other technologies for their ability to capture and report on required measures.<br><br>**Plan**<br>3. Identify the top priority areas by obtaining input from providers regarding the areas of most concern for them.<br>4. Involve key stakeholders as advisors to ensure their top priority areas are addressed early.<br>5. Identify the reporting requirements that are within the State's purview – such as health care reform efforts that are currently underway – and identify ways to streamline the types, formats, and schedules for reporting.<br>6. Agree upon a set of quality and performance data that is required (and collected) by State and State programs.<br><br>**Implement**<br>7. Harmonize quality measure definitions, reporting schedules, and data formats where possible and feasible.<br>8. Provide tools to enhance the capture, analysis, and reporting of quality data. |
| **SUGGESTED INITIATOR** | CCMCN, HCPF, SIM |
| **TIMING** | Continue and accelerate ongoing efforts |
| **INTERDEPENDENCIES** | Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #6 Health IT Portfolio/Program Management<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #8 Accessible and Affordable Health Analytics<br>Initiative #14 Uniquely Identify a Person Across Systems<br>Initiative #15 Unique Provider Identification and Organizational Affiliations<br>Initiative #16 Broadband and Virtual Care Access |
| **POTENTIAL FUNDING SOURCE(S)** | • SIM<br>• ARRA/HITECH 90/10<br>• MMIS Maintenance & Operations (50/50 or 75/25)<br>• User/subscription fees |

## 14. UNIQUELY IDENTIFY A PERSON ACROSS SYSTEMS

| | |
|---|---|
| **DOMAIN** | Technology |
| **DESCRIPTION** | This initiative develops and implements 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. |
| **BACKGROUND & FINDINGS** | Achieving health care reform and the Triple Aim requires the unambiguous identification of a person. This is needed so that health information can be accurately associated with an individual.<br><br>Throughout Colorado's health and social services organizations – including State agencies – there are many siloed Master Patient/Person Index (MPI) implementations. Most of these MPIs are focused on patient identification and are typically used by a single organization or system.<br><br>Knowing that the information presented is for the correct individual, and that it is accurate, complete, and current is critical to appropriate care. Today, each of these siloed systems has its own unique way of identifying a person. These individual system's identifications are rarely, if ever, compatible with other organizational systems. This makes the effort to correctly identify a patient across organizations – and ensure that the data retrieved is accurate – both cumbersome and expensive.<br><br>Due, in part, to the differences in these MPIs, information about a person cannot easily be shared across systems.<br><br>It will continue to be difficult for Colorado to integrate information from various systems and points of care – so that a person's complete health information and the services provided to an individual can be easily known and coordinated – until a single common approach to identity is implemented statewide. |
| **PURPOSE** | The purpose of this initiative is to uniquely and accurately identify a person across a variety of health systems and settings. This will facilitate accurate and appropriate data sharing, care and service coordination, value based payment information, and accurate analytics. |

| | |
|---|---|
| **OUTCOME(S)** | An agreed upon approach is implemented in Colorado to accurately and unambiguously identify an individual across multiple systems and settings.<br><br>This will result in more easily obtaining complete health information about an individual by reducing the burden and uncertainty of matching that patient across multiple organizations.<br><br>Optimally, person identification "as a service" is available, accurate, reasonably priced, and widely used. |
| **SUGGESTED APPROACH(ES)** | While initially starting with, and focusing on, solving the state agency needs, the scope for this initiative could ultimately be broader than the state's current health IT infrastructure.<br><br>**Summary of Suggested Approach**<br>1. Understand state agency needs, as well as the needs across the state.<br>2. Procure and deploy a system to manage person identity that will be used across state agency systems<br>3. Consider using the state's recognized master person identifier when communicating with state agencies<br>Note: It would be left to the non-state agency organizations as to how to harmonize their internal identifiers with the one to be used in communications with state agencies.<br>4. Conduct a needs analysis and requirements gathering to determine if the state agency approach to person identifier is applicable to, and feasible for, broader statewide usage. This requires understanding the broad and diverse requirements needed for health and social services information linking throughout the state.<br><br>**Discover**<br>1. Conduct an environmental scan to determine the current environment related to person identity capabilities.<br>2. Inventory the number, types, capabilities, sources, and resources expended on multiple MPIs.<br>3. Determine the extent and cost of unnecessary duplication.<br><br>**Harmonize**<br>4. Develop an approach for implementing a common person identity that can be used by multiple systems statewide.<br>· Start with the needs of state agencies.<br>· Identify and prioritize external organization needs and likely usages.<br>· Identify longer term uses for the system. |

| | |
|---|---|
| | 5. Consult with providers and consumers regarding what data should (or could) be used for harmonization.<br>6. To assist in gaining provider and consumer input, use statewide social advocates such as:<br>· Colorado Consumer Health Initiative<br>· Center for Patient Advocacy<br>7. Identify the benefits of a harmonized approach and use this information to educate providers and consumers.<br>8. Develop and prioritize use cases.<br>9. Align and consolidate identity-matching approaches into a common statewide approach.<br>10. Leverage and align the approach with federal direction and capabilities/systems on statewide common services approach.[82,83]<br>11. Consider the use of biometrics for uniquely identifying a person.<br>12. Consider offering MPI as a service.<br><br>**Implement**<br>13. Develop and implement tools and processes to support statewide identity matching.<br>14. Consider incentives to promote the sharing of health and health-related information.<br>15. Consider using the state's recognized master person identifier as a requirement when communicating with state agencies.<br><br>**Considerations**<br>• Approach should be scalable and extensible.<br>• Align with My Colorado's client index, to the extent possible.<br>• May be use-case specific algorithms – but the approach should be able to be used broadly. |
| **SUGGESTED INITIATOR** | HCPF, OeHI |
| **TIMING** | Continue and accelerate ongoing efforts |

[82] The Sequoia Project. "A Framework for Cross-Organizational Patient Identity Matching". November 10, 2015 (draft for public review and comment). http://sequoiaproject.org/framework-for-cross-organizational-patient-identity-matching/

[83] HealthIT.gov website, SAFER (Safety Assurance Factors for EHR Resilience) web page, accessed October 2017 at www.healthit.gov/policy-researchers-implementers/safer/guide/sg006

| | |
|---|---|
| **INTERDEPENDENCIES** | Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #3 Harmonize and Advance Data Sharing and Health Information Exchange Capabilities Across Colorado<br>Initiative #5 Statewide Health Information Governance<br>Initiative #10 Consent Management<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #13 Ease Quality Reporting Burden<br>Initiative #15 Unique Provider Identification and Organizational Affiliations |
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA/HITECH 90/10<br>• MMIS Maintenance and Operations (50/50 or 75/25)<br>• User/subscription fees |

## 15. UNIQUE PROVIDER IDENTIFICATION AND ORGANIZATIONAL AFFILIATIONS

| | |
|---|---|
| **DOMAIN** | Technology |
| **DESCRIPTION** | This initiative develops and implements 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. |
| **BACKGROUND & FINDINGS** | Provider directories are critical tools for implementing value-based payment. Providers may practice at multiple locations, hold different roles in various organizations, be compensated by multiple payers, and have different relationships with different patients.<br><br>These multiple roles and affiliations must be able to be readily and correctly identified as Colorado moves towards value based care. Provider directories can support several components of value based care models. Examples of these are provided below.<br><br>**Patient Attribution**<br>Value based care models compensate providers based on the providers meeting certain quality metrics – many of which are patient centric. Proper attribution of patients to providers is essential. Accurate attribution is important so the results of patient related quality metrics can be linked to the appropriate provider, enabling the provider to be compensated appropriately. Provider directories can support attribution by supplying accurate, up to date information on providers.<br><br>**Care Coordination/Transition**<br>Provider directories can provide much needed information for providers who refer patients. This can range from contact information to organizational affiliation.<br><br>**Research Support**<br>Provider directories can provide the information needed to conduct research and policy development in support of improved access for medically underserved populations, especially as it relates to the health professional workforce. |

| | |
|---|---|
| | In Colorado there are many health care organizations, state agencies, and other entities that support multiple provider directories. These directories have been created and maintained to meet the needs specific to an organization.<br><br>Colorado does not have a statewide provider directory. As a result, the costs to maintain the directories are duplicated, accuracy is not assured, and the benefits remain isolated.<br><br>CDPHE's Primary Care Office is finalizing its health care provider directory. It will provide detailed information about practice patterns and network adequacy for insurers. |
| **PURPOSE** | The purpose of this initiative is to provide a single statewide source of truth for provider information and their organizational affiliations. This information will support accurate attribution models and value-based care. |
| **OUTCOME(S)** | There is a recognized, current, and accurate statewide source of truth for provider information available to – and used by – all who require the information.<br><br>Provider Directory as-a-service is available, accurate, reasonably priced, and used statewide. |
| **SUGGESTED APPROACH(ES)** | Ultimately, this system should be able to link providers in the following ways.<br><br>Provider → Unique ID<br>Provider → Practice(s)<br>Provider → Payer Plan(s)<br>Provider → Patient(s)<br><br>**Discover**<br>1. Determine the current capabilities related to provider identity and their associated organizations.<br>2. Inventory the number, types, capabilities, sources, and resources expended on the use of multiple sources of data for provider information.<br>3. Determine the extent and cost of potentially unnecessary duplication. |

| | |
|---|---|
| | **Harmonize**<br>4. Develop an approach for a common provider identity that can be used by multiple systems statewide.<br>5. Determine the various sources of information for provider identification, organization identification and relationships, providers, and patients.<br>6. Identify the benefits of a harmonized approach and providing a single "source of truth" for provider identify and relationships.<br>7. Develop and prioritize use cases.<br>8. Align and consolidate provider identity-matching approaches into a common statewide approach.<br>9. Consider broad statewide use of the Provider Directory currently under development in CDPHE.<br>10. Develop a long-term sustainability approach.<br>11. Develop policies that drive the use of the Provider Directory.<br><br>**Implement**<br>12. Consider offering this as a utility or a service<br>11. Consider mandating the use of this directory for all state-related business<br><br>How this directory could be used:<br>• As a recognized, unambiguous, and relied upon identifier of providers when doing business with the state.<br>• As a resource for provider/patient attribution in value based payment models.<br>• To associate providers with payer plans. |
| **SUGGESTED INITIATOR** | OeHI, CDPHE |
| **TIMING** | Continue and accelerate ongoing efforts – Go live Q1 2018 |
| **INTERDEPENDENCIES** | Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #4 Integrate Behavioral, Physical, Claims, Social, and Other Health Data<br>Initiative #5 Statewide Health Information Governance<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #10 Consent Management<br>Initiative #12 Statewide Health Information Technical Architecture |

| | |
|---|---|
| **POTENTIAL FUNDING SOURCE(S)** | • ARRA/HITECH 90/10<br>• MMIS Maintenance &Operations) (50/50 or 75/25)<br>• Subscription/user fees<br>• State funds |

## 16. BROADBAND AND VIRTUAL CARE ACCESS

| | |
|---|---|
| **DOMAIN** | Technology |
| **DESCRIPTION** | This initiative develops and supports approaches that lead to ubiquitous, redundant, reliable, and affordable broadband access for health organizations and consumers. |
| **BACKGROUND & FINDINGS** | Achieving health care reform and the Triple Aim will require continuous investment in new modes and models of care. These may include virtual patient visits and patient-generated/patient-captured information accomplished through multiple evolving technologies.<br><br>Colorado has already made significant inroads into providing remote access to care through telehealth services. But, broadband access required for telehealth is limited, or non-existent, in many of Colorado's rural communities. The lack of access severely inhibits effective participation in telehealth and access to other emerging capabilities.<br><br>In Colorado's rural areas, only 7 in 10 people have access to broadband. The state wants to raise rural broadband availability from 70 percent to 85 percent by the end of 2018, and pave the path to achieve 100 percent access for all of Colorado by 2020.[84]<br><br>Telehealth is an important avenue to support health care reform and is increasingly seen as an acceptable alternative to many types of in-person provider visits.<br><br>While providing care remotely using telehealth or virtual visit technologies is not a new method of care, there are significant discussions and initiatives relating to key issues; among them are reimbursement to providers for services rendered via telehealth, and addressing licensure requirements when the patient and the provider are in different states. |

[84] State of Colorado website, "Gov. Hickenlooper Announces Executive Director for Broadband Office," accessed October 2017 at https://www.colorado.gov/governor/news/gov-hickenlooper-announces-executive-director-broadband-office

| | |
|---|---|
| | Colorado's Medicaid program, Health First Colorado,[85] covers reimbursements for live video telemedicine for both medical and mental health services at the same rate as in-person services. Remote Patient Monitoring is reimbursed, but only on a flat fee basis for chronic disease management.<br><br>Similarly, Medicare has updated its payment structure to broaden the telehealth services it covers.[86]<br><br>Significant attention is also being given by the Veterans' Administration[87] (VA) on using telehealth/virtual visits to improve access to care by veterans.<br><br>The Veterans E-health and Telemedicine Support Act of 2017 allows a licensed health care professional of the Department of Veterans Affairs to practice his or her profession using telemedicine at any location in any state, regardless of where the professional or patient is located. The proposed rule "Authority of Health Care Providers to Practice Telehealth"[88] was published in the Federal Register on October 2, 2017. This is significant for Colorado as there are 399,458[89] veterans living in the state. These veterans, located around the state, reside in communities ranging from urban to the very rural.<br><br>Colorado needs to address the disparate access to broadband. |
| **PURPOSE** | The purpose of this initiative is to ensure equitable access to high speed connectivity. |
| **OUTCOME(S)** | All Coloradans have access to high speed connectivity sufficient for participating in virtual care programs. |

[85] State of Colorado website, Department of Health Care Policy & Financing, Telemedicine web page, accessed October 2017 at www.colorado.gov/pacific/hcpf/telemedicine

[86] Centers for Medicare & Medicaid website, Telehealth Services. "Rural Health Fact Sheet Series". Accessed October 2017 at https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/TelehealthSrvcsfctsht.pdf

[87] U.S. Department of Veterans Affairs. "VA Telehealth Services" web page. Accessed October 2017 at http://www.telehealth.va.gov/

[88] The Federal Register. A proposed rule by the Veterans Affairs Department, "Authority of Health Care Providers To Practice Telehealth," October 2, 2017. Accessed October 2017 at https://www.federalregister.gov/documents/2017/10/02/2017-20951/authority-of-health-care-providers-to-practice-telehealth

[89] U.S. Census Bureau website, Veterans Statistics – Colorado web page, accessed October 2017 at https://www2.census.gov/library/visualizations/2015/comm/vets/co-vet.pdf

| | |
|---|---|
| | Access to high speed connectivity will decrease disparities of care across Colorado by providing residents with broader availability of telehealth and other emerging technologies for care. |
| **SUGGESTED APPROACH(ES)** | **Broadband**<br>1. **Leverage existing resources such as:**<br>· Governor's Office of Broadband<br>· Broadband Deployment Board[90]<br>· Colorado Broadband Data and Development Program[91] (CBDDP), which is a statewide broadband mapping and planning initiative (Broadband Mapping Team)[92] led by the Office of Information Technology (OIT) Office of OIT<br>· Department of Local Affairs (DOLA) Broadband Program[93] which includes the Broadband Strategy Team[94]<br>· Knowledge and members of the Colorado Rural Health Center[95]<br>· Universal Service Administration Company[96] (USAC)<br>· FirstNet[97]<br>· Colorado Telehealth Network<br>2. Consider innovative alternatives (e.g. satellite, 5G, etc.) to address key barriers such as cost and availability.<br>3. Address issues associated with connectivity that could be available (already in place), but inhibited by easement or other issues.<br><br>**Virtual Care**<br>1. Leverage existing organizations and resources such as:<br>· Colorado Telehealth Network<br>· Colorado Rural Health Center |

[90] State of Colorado website, The Broadband Fund web page, accessed October 2017 at www.colorado.gov/pacific/dora-broadband-fund/deployment-board
[91] State of Colorado website, Office of Information Technology, Broadband web page , accessed October 2017 at http://www.oit.state.co.us/broadband
[92] The Broadband Mapping Team develops and maintains a database and an interactive online map of broadband service in Colorado, accessed October 2017 at http://broadband.co.gov/about/
[93] State of Colorado website, Department of Local Affairs web page accessed October 2017 at https://www.colorado.gov/pacific/dola/broadband-program. DOLA supports the efforts of local governments to improve Broadband service to their constituents to achieve enhanced community and economic development.
[94] The Broadband Strategy Team focuses on organizing, facilitating, and educating stakeholder groups to increase awareness of the importance of broadband and help communities in identifying broadband solutions.
[95] Colorado Rural Health Center website, Home page, accessed October 2017 at http://coruralhealth.org/
[96] Universal Service Administration Company website, About web page, accessed October 2017 at http://www.usac.org/about/default.aspx
[97] FirstNet (the First Responder Network Authority) is an independent authority within the U.S. Department of Commerce. Authorized by Congress in 2012, its mission is to develop, build and operate the nationwide, broadband network that equips first responders to save lives and protect U.S. communities. FirstNet websites are accessed October 2017 at www.firstnet.gov and www.firstnet.com.

| | |
|---|---|
| | · Colorado Telehealth Network Environmental Scan[98]<br>· Colorado Telehealth Alliance[99]<br>2. Leverage innovation partners to develop/enhance telehealth capabilities.<br>3. Leverage and refine as needed policies supporting equal compensation for in-person and virtual care visits.<br>4. Prioritize key needs that can be addressed through the broader use of telehealth and focus on meeting those needs.<br>5. Identify and address licensing issues that limit how providers can provide services across state lines. |
| **SUGGESTED INITIATOR** | OeHI, Office of Broadband, Colorado Telehealth Network, Colorado Rural Health Center |
| **TIMING** | Continue and accelerate ongoing efforts – Immediately |
| **INTERDEPENDENCIES** | Initiative #1 Support Care Coordination in Communities Statewide<br>Initiative #2 Promote and Enable Consumer Engagement, Empowerment, and Health Literacy<br>Initiative #7 Accessible and Affordable Health IT and Information Sharing<br>Initiative #8 Accessible and Affordable Health Analytics<br>Initiative #11 Digital Health Innovation<br>Initiative #12 Statewide Health Information Technical Architecture<br>Initiative #13 Ease Quality Reporting Burden |
| **POTENTIAL FUNDING SOURCE(S)** | • Federal and state broadband funding opportunities[100,101,102,103]<br>• USAC<br>• Public/private partnerships<br>• HRSA telehealth funding opportunities[104]<br>• USDA Distance Learning & Telemedicine Grant[105]<br>• SIM funding |

[98] Colorado Telehealth Network Website accessed October 2017 at http://cotelehealth.com/
[99] Colorado Telehealth Network website, Colorado Telehealth Alliance (CTA) web page accessed October 2017 at http://cotelehealth.com/ctwg/. The goal of the alliance is to inform, educate, and promote the adoption of telehealth across Colorado.
[100] National Telecommunications & Information Administration (NTIA) website accessed October 2017 at www.ntia.doc.gov/grants-combined
[101] State of Colorado website, State Broadband Portal web page, accessed October 2017 at http://broadband.co.gov/funding-opportunities-update-august-2017/
[102] FCC (Federal Communications Commission) website, Connect America Fund web page, accessed October 2017 at www.fcc.gov/general/connect-america-fund-caf
[103] Universal Service Administration Company website, About web page, accessed October 2017 at http://www.usac.org/about/default.aspx
[104] HRSA (Health & Resources Administration) website, Telehealth Programs web page, accessed October 2017 at https://www.hrsa.gov/rural-health/telehealth/index.html
[105] USDA Website, Programs and Services web page accessed October 2017 at https://www.rd.usda.gov/programs-services/distance-learning-telemedicine-grants

SECTION 5

# TRANSITION AND NEXT STEPS

## *The Road Ahead*

Colorado is well-positioned – with many health and health IT assets – and has made great strides in recent years to advance health information technology capabilities. Still, there are many challenges to be addressed: equitable access to health care services for all Coloradans, affordability of health care and health insurance, ubiquitous broadband access in rural areas, integration of physical health, behavioral health and social services data, the elimination of data silos through improved health information sharing, and the improved care coordination that would result from advancements in these areas.

It will take continued vision, leadership, and commitment to leverage Colorado's current assets, while building the new capabilities required for the future. Colorado's Governor's Office, the State Assembly, the State agencies, the eHealth Commission, and the Office of eHealth Innovation along with key stakeholders – all must keep driving forward.

There are many initiatives within this *Roadmap*. Two early steps the eHealth Commission should undertake are to:

- Prioritize the timing of the initiatives to ensure that there are adequate resources necessary to focus efforts on the desired outcomes; and
- Secure an Initiator for each initiative in this *Roadmap.*

As the champion of the *Roadmap*, the eHealth Commission should monitor the progress and results of the initiatives, and review and update the *Roadmap* annually.

This is important and complex work. It will take time. There will be speed bumps. It will take determination and perseverance to succeed. But the positive impacts will be significant, and will continue to move Colorado in the right direction.

Colorado's unique community of collaborators, innovators, and change agents – the pioneers of today – must continue to advance these new capabilities and technologies, in service to all Coloradans, as we continue our journey toward achieving Colorado's Triple Aim: Best Care, Best Health, Best Value.

The following are examples of activities to consider as the transition is refined.

| Area | Activities |
|---|---|
| Governance | • Develop priorities, plan phasing, and project timing with eHealth Commission<br>• Update eHealth Commission Charter to include *Roadmap* implementation/oversight<br>• Establish status reporting methods and processes<br>• Develop value measurement and value realization processes for key initiatives<br>• Identify early policy needs and opportunities, and pursue for 2018 legislative session |
| Planning | • Begin more detailed program and project planning, aligned with Commission's priorities<br>• Establish program/portfolio management office (PMO) |
| Communications | • Finalize Communications Plan (for *Roadmap*), and begin implementation<br>• Identify, and begin promoting Cybersecurity "best practices" as appropriate |
| Funding mid 2018 | • Advance capital funding request for FY2019 – FY2021 through budget and legislative process<br>• Update IAPD/s and SMHP as needed<br>• Identify programs that are eligible, and apply for alternative/foundation/grant funding |
| Procurement | • Continue ongoing procurement efforts for Person Identification (MPI), eCQM, and Provider Directory Initiatives<br>• Once funding and timing are known, launch additional procurement efforts as needed<br>• Draft OeHI procurement, product/service evaluation methodology, and acquisition procedures<br>• Draft innovation community framework for State participation |
| Operations Planning | • For early phase projects, begin operations planning efforts<br>• Identify staffing needs (end user, training, and ongoing support)<br>• Identify technology upgrade and maintenance cycles, processes |

SECTION 6

# APPENDICES

Appendix A: Executive Order

Appendix B: Participants

Appendix C: Glossary

# Appendix A – Executive Order 2015-008

The Executive Order begins on the next page.

# STATE OF COLORADO

**OFFICE OF THE GOVERNOR**

136 State Capitol
Denver, Colorado 80203
Phone (303) 866-2471
Fax (303) 866-2003

John W. Hickenlooper
Governor

# B 2015-008

## EXECUTIVE ORDER

### Creating the Office of eHealth Innovation and the eHealth Commission

Pursuant to the authority vested in the Governor of the State of Colorado and, in particular, pursuant to Article IV, Section 2 of the Colorado Constitution, I, John W. Hickenlooper, Governor of the State of Colorado, hereby issue this Executive Order creating the Office of eHealth Innovation and the eHealth Innovation Advisory Commission, and rescinding Executive Order 008-09.

I. Background, Need, and Purpose

Health information technology ("Health IT") is revolutionizing health care in Colorado. Health IT enables patients to access their medical records electronically and allows health care providers to more effectively communicate regarding a patient's medical care. The adoption and meaningful use of Health IT and collaboration among communities and across the health care industry, has helped develop key technical services, and strengthen the quality and value of health care in the state.

Colorado is uniquely positioned to achieve significant advances in Health IT and support transformational health programs throughout the state. Already, Colorado has successfully connected dozens of hospitals, thousands of providers, and millions of patients, allowing them to exchange patient information, coordinate care, and improve patient health. With that foundation, the state is positioned to combine clinical information with other health-related information and enhance diagnostic and treatment capabilities thereby further improving the quality of care our citizens receive.

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.

The next phase of effectively leveraging Health IT resources from the public and private sectors will require a new coordinated effort that facilitates the development of best practices and innovative approaches that improve patient health.

II. Directives and Declarations

A. Creation of The Office of eHealth Innovation

This executive order hereby creates the Office of eHealth Innovation (the "Office") within the Governor's office. The Office shall promote and advance the secure, efficient, and effective use of health information, and help to inform, incentivize, and influence future Health IT initiatives.

Pursuant to the Health Information Technology for Economic and Clinical Health (HITECH) Act, the Office is hereby designated as Colorado's Designated Entity to participate in the programs of the Office of the National Coordinator for Health Information Technology and other Health IT programs established by certain federal agencies.

The Office shall be led by a Director to be selected by the Governor and comprised of staff necessary to carry out the Office's mission. Staff shall be supported by funding from grants or state health programs. The Director shall report to the Governor or the Governor's designee. The Department of Health Care Policy and Financing shall serve as the administrative and fiscal agent for the Office.

The Office shall evaluate the state's Health IT needs and facilitate the use of public funds to enable all Coloradans to benefit from Health IT and health information exchange efforts. The Office shall coordinate relevant public and private stakeholders and Health IT programs across

state agencies and between state and federal projects. The Office shall evaluate functions to advance Health IT systems in Colorado and create transparency and accountability. The Office will not own or operate any technical infrastructure but will define the minimum criteria for qualified organizations that will provide state-level, common technical services supporting advanced health information interoperability.

The Director, in consultation with the eHealth Commission, shall advise and recommend policy and regulatory changes that will accelerate Health IT innovation in Colorado.

B. Creation of the eHealth Commission

There is hereby created, under the office of the Governor, the eHealth Commission (the "Commission"), to provide advice and guidance to the Office of eHealth Innovation on advancing Health IT in Colorado. The Commission shall support the implementation of the state's Health IT strategy and interoperability objectives by setting goals for Health IT programs and creating a process for developing common policies and technical solutions.

The Commission shall establish policies and procedures it deems appropriate for conducting its meetings. The Commission shall not be subject to the State Administrative Procedures act, C.R.S 24-4-101, *et seq.,* but shall be subject to the Colorado Open Records Act, 24-72-201, e*t seq.,* and the Colorado Open Meetings Law, 24-6-401, *et seq*.

The Commission shall consist of no fewer than nine and no more than 15 members, appointed by the Governor, with statewide representation from urban and rural communities. Members shall serve three year terms. The members of the Commission shall include:

1. Between four and 10 representatives, who are not state employees, that collectively have experience and knowledge of as many of the following areas as practical:
    - primary health care delivery
    - behavioral health care delivery
    - health care facilities
    - health insurance
    - non-profit, Health IT-related community organizations
    - interoperability and data exchange
    - digital health technology
    - consumer engagement in health care
    - health care quality measures
2. The Director of the Office of eHealth Innovation;

3. The Executive Director of the Department of Public Health and Environment or his or her designee;
4. The Executive Director of the Department of Health Care Policy and Financing or his or her designee;
5. The Executive Director of the Department of Human Services or his or her designee;
6. The Executive Director of the Governor's Office of Information Technology or his or her designee.

Members of the commission shall choose one representative to serve as the chair person.

The Director, with the advice of the Commission, may create work groups to advise the Commission and the Office on issues related to its mission. The Director and the Commission shall also coordinate with, and utilize the work of, other health transformation efforts.

III. Duration

Executive order 008-09 is hereby rescinded. This Executive Order shall remain in force until modified or rescinded by future Executive Order of the Governor.

GIVEN under my hand and the Executive Seal of the State of Colorado this sixth day of October, 2015.

John W. Hickenlooper
Governor

# Appendix B – Participants

***Thank you to those who contributed to the development of Colorado's Health IT Roadmap***

### A

Eric Adolphi
*Telluride Regional Medical Center*
Kendall Alexander
*North Range Behavioral Health*
Halie Anthony
*Peak Vista Community Health Center*
Justin Aubert
*Quality Health Network*

### B

Kim Ball
*Community Health Partnership*
Cara Beatty
*United Health Care*
Mike Biselli
*Catalyst HTI*
Ed Bostick
*Colorado Telehealth Network*
Ann Boyer, MD
*Children's Hospital Colorado*
Adam Brown
*Anthem Blue Cross Blue Shield*
Kimberly Bryant
*San Luis Valley Public Health Partnership*

### C

Jim Calanni
*Community Health Partnership*
Liz Coker
*3P Health-Patient Engagement*
Paul Condit
*Colorado Governor's Office of Information Technology*
Lauren Costantini
*Prima Temp-Data Intelligence and Analytics*
Joseph Councilman
*Colorado Behavioral Healthcare Council*
Brad Couse
*Envision Technology Partners-Data Management*

### D

Joel Dalzell
*Colorado Department of Health Care Policy and Financing*
Ed Daniels
*Community Health Partnership*
Art Davidson, MD
*Denver Health*
Robert Denson
*Colorado Regional Health Information Organization*
Jackie Driscoll
*Centura Health*
Julia Duffer
*Community Health Partnership*

### *E*

Ana English
*Center for Improving Value in Health Care*
Fern Epstein
*Sidebar Consulting*
Cory Everett
*Colorado Department of Regulatory Agencies*

### *F*

Jeff Force
*University of Colorado*

### *G*

Wendi Gechter
*Marillac Clinic*
Kevin Gilbert
*Heart Smart Kids*
Patrick Gordon
*Rocky Mountain Health Plans*
Jon Gottsegen
*Governor's Office of Information Technology*
Jason Greer
*Colorado Community Managed Care Network*
Antonio Gurule
*San Luis Valley Health Center*
Lloyd Guthrie
*Center for Improving Value in Health Care*

### *H*

Amy Harder
*Community Health Partnership*
Camille Harding
*Colorado Office of Behavioral Health*
Larry Helms
*Valley-Wide Health Systems, Inc.*
Steve Hess
*University of Colorado Health*
Dara Hessee
*Colorado Health Foundation*
Christine Hettinger
*San Luis Valley Health*
James Holder
*Cigna*
Steven Holloway
*Colorado Department of Public Health and Environment*
Morgan Honea
*Colorado Regional Health Information Organization*
Kate Horle
*Colorado Regional Health Information Organization*

### J

Robin Johnson, MD
*Ettain Group*
Kelly Joines
*Colorado Regional Health Information Organization*

### K

David Keller, MD
*Colorado's State Innovation Model*
Eric Kinter
*Snell & Wilmer Law*
Steven Krager
*University of Colorado*

### L

Marc Lassaux
*Quality Health Network*
Chuck Laufle
*San Luis Valley Health Center*
Jamie Laufle
*San Luis Valley Health Center*
Danni Lederman
*Mile High Health Alliance*
Rick Lewis
*South Metro EMS*
Ryan Lucas
*Mines & Associates*
Michele Lueck
*Colorado Health Institute*

### M

Barbara Martin
*Colorado's State Innovation Model*
Crestina Martinez
*Colorado Department of Health Care Policy and Financing*
Jonathan Mathieu
*Center for Improving Value in Health Care*
Janet McIntyre
*Colorado Hospital Association*
Jason McRoy
*Boulder County Public Health*
Liz Mestas
*Colorado Department of Corrections*
Gregory Miller
*Denver Health*
Michelle Mills
*Colorado Rural Health Center*
Marie Mirenda
*Community Health Partnership*
Dana Moore
*Centura Health*
Stephanie Motter
*Monument Health*

### *N*

Jeffrey Nathanson
*10.10.10*
Donna Neste
*Mesa County Physicians IPA*

### *P*

Ham Pasupaleti
*PluralSoft*
Cheryl Petrossi
*Colorado Department of Corrections*

### *R*

Sandy Randall
*Mesa County Physicians IPA*
Gregory Reicks, DO
*Foresight Family Physicians*
Don Reuther
*Mountain Family Health Centers*
Lori Roberts
*Integrated Community Health Partners*
Sarah Robinson
*Mesa County Health Department*

### *S*

Charles Selvaraj
*Next Health Technologies-Data Analytics*
Alexis Sgouros
*Kaiser Permanente*
Brian Shepard
*Governor's Office of Information Technology*
Andy Steele, MD
*Denver Health*
Bill Stevens
*Governor's Office of Information Technology*
Julie Suemihi
*Quality Health Network*
Rebecca Sunshine
*CirrusMD*
Jason Sunstrom
*Department of Regulatory Agencies*

### *T*

Dick Thompson
*Quality Health Network*
Brian Turner
*Colorado Behavioral Healthcare Council*

### *U*

Chris Underwood
*Colorado Department of Health Care Policy and Financing*

### *V*

Lynne VanArsdale
*Colorado Reginal Health Information Organization*
Mark Vogtner
*Aspen Pointe*

### *W*

Steve Watson
*VTO Labs*
Chris Wells
*Colorado Department of Public Health and Environment*
Justin Wheeler, MD
*Clinica Family Health*
Wes Williams
*Mental Health Center of Denver*
Herb Wilson
*Colorado Department of Health and Human Services*

### *Z*

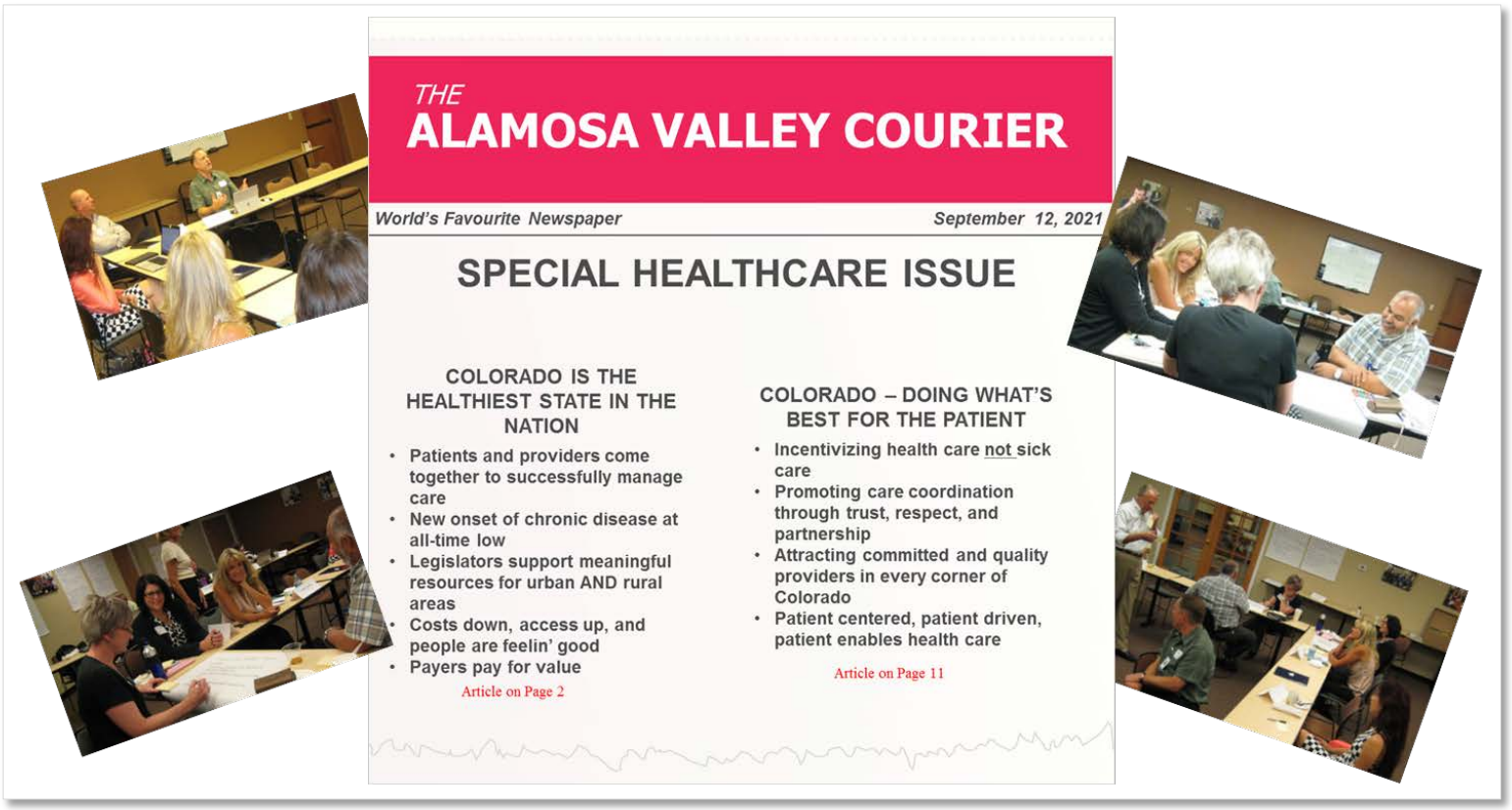
Tania Zeigler
*Kaiser Permanente*
Judy Zerzan
*Colorado Department of Health Care Policy and Financing*

## HIT Stakeholder Participants Describe the Future of Health Care in Colorado
## Envisioning Workshops (Fall 2016)

### GRAND JUNCTION

## HIT Stakeholder Participants Describe the Future of Health Care in Colorado
## Envisioning Workshops (Fall 2016)

### ALAMOSA



## HIT Stakeholder Participants Describe the Future of Health Care n Colorado Envisioning Workshops (Fall 2016)

### COLORADO SPRINGS

THE COLORADO SPRINGS GAZETTE

www.csgazette.com THE WORLD'S FAVOURITE NEWSPAPER Sept 12, 2021

SPECIAL HEALTHCARE ISSUE

COLORADO HAS IT ALL!!
- Best Health
- Best Care
- Best Value

Article on Page 2

COLORADO AT PEAK OF HEALTH
Due to Innovative Data Sharing

Article on Page 7

COLORADO CLIMBS TO THE SUMMIT OF HEALTH
- Top spot for health
- Driven by partnerships in education, technology, and communities
- Embraces innovation and changing health ecosystem

Article on Page 11

COLORADO PUTS PATIENTS FIRST
- Balances requires and value
- Agrees upon standards and sharing
- Encourages and integrates innovation

Article on Page 4

COLORADO FAILS ... !
At Maintaining
Health Care Silos

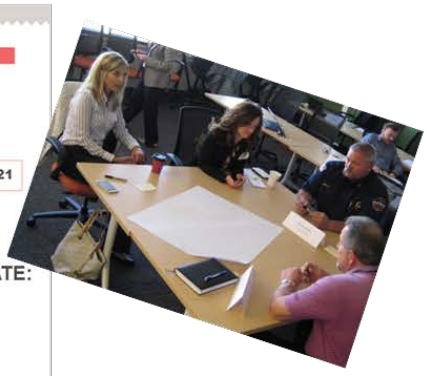
Article on Page 7

COLORADO UNDERSTANDS THE "WHY"
- State leaders creating a culture of innovation, collaboration, and mutual respect
- Built infrastructure for full integration of holistic health
- Colorado-based health IT companies wildly successful
- All stakeholders have ownership

Article on Page 12

## HIT Stakeholder Participants Describe the Future of Health Care in Colorado
## Envisioning Workshops (Fall 2016)

### DENVER



THE DENVER DAILY NEWS

www.dailynews.com THE WORLD'S FAVOURITE NEWSPAPER Sept 16, 2021

**SPECIAL HEALTHCARE ISSUE**

**COLORADO'S HEALTH ROADMAP LED TO THE PATIENT**

- Integrated health information – the key factor to success
- Ownership and accountability from all stakeholders was clearly evident

Article on Page 2

**COLLABORATION IN COLORADO LEADS TO SUCCESS**

- All stakeholders involved – state agencies, payers, clinicians, public health, people, entrepreneurs, academia, employers
- Broke down silos for the good of the people
- Demonstrated and sealed up pockets of success
- Worked for the good of all of the people
- Everyone benefitted

Article on Page 12

**ROAD TO THE HEALTHIEST STATE: COLORADO HAS DONE IT!**

- Consensus-driven 2017 roadmap creates a successful journey
- Patients own their data & push providers, payers & community to collaborate
- Medicaid costs decreased with patient-oriented prevention focus
- Patient's first roadmap ... Doesn't have to be a dream
- Purpose coupled with innovation & planning makes Colorado a healthier state

Article on Page 4

**COLORADO: HIGH ON HEALT**

How did we get there ...

1. Innovation
2. Alignment
3. Collaboration
4. A Common Sense Approach

Article on Page 11

## HIT Stakeholder Participants Describe the Future of Health Care in Colorado
## Envisioning Workshops (Fall 2016)

### DENVER

This page intentionally left blank

# Appendix C – Glossary

**Accountable Care Organization – ACO**

A group of health care providers, potentially including doctors, hospitals, health plans and other health care constituents, who voluntarily come together to provide coordinated high-quality care to populations of patients

**Affordable Care Act – ACA**

The Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010. Together they expand Medicaid coverage to millions of low-income Americans and make numerous improvements to both Medicaid and the Children's Health Insurance Program (CHIP). ACA requires states to develop an electronic insurance marketplace or use the federal system.

**Agency for Healthcare Research and Quality – AHRQ**

An agency within HHS with a mission to produce evidence to make health care safer, higher quality, more accessible, equitable, and affordable.

**All Payers Claims Database – APCD**

Used to collect medical and pharmacy claims data and eligibility data, from both private and public payers. These comprehensive, longitudinal, multi-payer datasets are providing research and policy opportunities for improving the health care delivery system. Colorado's APCD is the Center for Improving Value in Health Care (CIVHC).

**American Recovery and Reinvestment Act (Economic Stimulus) – ARRA**

Enacted in 2009, includes measures to modernize the nation's infrastructure. Within ARRA is the Health Information Technology for Economic and Clinical Health (HITECH) Act. The HITECH Act promotes the use of electronic health records and the meaningful use of certified electronic health records. These programs are led by Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health IT (ONC).

**Business Associate**

As defined by the Health Information Portability and Accountability Act (HIPAA), a business associate is any organization or person working in association with or providing services to a covered entity who handles or discloses Personal Health Information (PHI) or Personal Health Records (PHR). https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/business-associates/index.html

**Center for Improving Value in Health Care – CIVHC**

CIVHC develops and maintains the All Payer Claims Database (APCD) and related analytics. http://www.civhc.org/programs-and-services/

**Centers for Disease Control and Prevention – CDC**

The CDC is the leading public health institute of the United States.

**Centers for Medicare and Medicaid Innovation – CMMI**

Also called "The Innovation Center." Along with CMS CMMI supports the development and testing of innovative health care payment. SIM is funded through CMMI.

**Centers for Medicare and Medicaid Services – CMS**

Administers Medicare, Medicaid, the Children's Health Insurance Program (CHIP).

**Certified Electronic Health Record Technology – CEHRT**

EHR software that has been certified by ONC for use by clinicians to achieve Meaningful Use. One of the requirements is the ability of the CEHRT to exchange health information with other providers.

**Children's Health Insurance Program Reauthorization Act – CHIPRA**

Enacted in 2009, this legislation marked new children's coverage by providing states with significant new funding, new programmatic options, and a range of new incentives for covering children through Medicaid and the Children's Health Insurance Program (CHIP). https://www.medicaid.gov/chip/chipra/index.html

**Colorado Advanced Interoperability Initiative – CAII**

Office of the National Coordinator (ONC) awarded grant to Colorado Regional Health Information Organization (CORHIO) and Quality Health Network (QHN) to engage ambulatory, long-term care, and behavioral health providers in health information exchange and advance the exchange of behavioral health information through two different consent pilots.

**Colorado Behavioral Healthcare Council – CBHC**

The Colorado Behavioral Healthcare Council (CBHC) is the statewide membership organization for Colorado's network of community behavioral health providers.

**Colorado Benefit Management System – CBMS**

The Colorado Benefits Management System (CBMS) and Program Eligibility & Application Kit (PEAK) are the essential technologies through which Coloradans most in need receive food, cash, and medical assistance. To date, more than 2 million individual cases have been worked through CBMS, signifying the vast impact of the system in the state of Colorado.

**Colorado Community Managed Care Network – CCMCN**

CCMCN is a non-profit Network of 12 Federally Qualified Health Centers (FQHCs) providing primary health care services to the medically underserved throughout Colorado. CCMCN administers clinical quality improvement programs on behalf of its members. The largest of these programs is the Colorado Associated Community Health Information Exchange (CACHIE). http://www.ccmcn.com/about.html

**Colorado Comprehensive Health Access Modernization Program – CO-CHAMP**

Also known as the HRSA-SHAP Grant, this is a program that awards grants to States to help them expand access to affordable health care coverage for people who are uninsured. https://www.hrsa.gov/state-health-access/index.html

**Colorado Department of Health Care Policy and Financing – HCPF**

State Department that oversees and operates Health First Colorado (Colorado's Medicaid Program), Child Health Plan Plus (CHP+), and other public health care programs for Coloradans who qualify. https://www.colorado.gov/pacific/hcpf/About-HCPF

**Colorado Department of Human Services – CDHS**

Colorado has a state-supervised and county-administered human services system. Under this system, county departments are the main provider of direct services to Colorado's families, children, and adults.
https://drive.google.com/file/d/0B6eUVZvBBTHjY185ZVotRnJsU00/view

**Colorado Department of Public Health and Environment – CDPHE**

CDPHE is charged with protecting and maintaining the health and environment of the citizens of Colorado. https://www.colorado.gov/cdphe

**Colorado Department of Regulatory Agencies – CDORA**

The principal department of the Colorado state government responsible for professional licensing and consumer protection. https://www.colorado.gov/dora

**Colorado Health Care Association – CHCA**

Serves as liaison with the Colorado legislature, the Congress, and regulatory agencies for resident-centered care. https://www.cohca.org/advocacy/government-services/

**Colorado Health Institute – CHI**

Founded in 2002, the CHI has provided evidence-based data and information to inform policy, advance health, promote collaboration and support better access to care for all Coloradans. https://www.coloradohealthinstitute.org/about-us

**Colorado Hospital Association – CHA**

Representing over 100 hospitals and health systems throughout Colorado, CHA serves as a trusted, credible resource on health issues, hospital data and trends for the media, policymakers, and the general public. https://cha.com/about-us/

**Colorado Homeless Information Management System – HIMS**

Supports both the Metropolitan Denver Homeless Initiative (MDHI) and BOS Continuum of Care (CoC) for the state of Colorado. http://coloradohmis.org/index.html

**Colorado Immunization Information System – CIIS**

A registry or lifelong immunization record tracking system under the Colorado Immunization Registry Act of 2007. https://www.colorado.gov/pacific/cdphe/colorado-immunization-information-system-ciis

**Colorado Information Market Place – CIM**

Colorado's open data portal is available to the public on the Colorado Information Marketplace (CIM) at data.colorado.gov. CIM is an effort by the Governor's Office of Information Technology to provide Colorado open data to citizens with a dataset catalog, dataset repository, an application programming interface (API) and several tools for exploring and visualizing data. https://data.colorado.gov/

**Colorado Medicaid Management Innovation & Transformation – COMMIT**

Department of Health Care Policy and Finance's (HCPF) four-year project to design, develop, test, and implement systems to replace the 20-year-old Medicaid Management Information System (MMIS) and other information technology components. https://www.colorado.gov/pacific/sites/default/files/2017%20Quality%20Strategy%20-%20Final%205-9-17.pdf

**Colorado Regional Health Information Organization – CORHIO**

One of two statewide Health Information Exchanges (see Quality Health Network). It is self-sustaining through a fee-based subscription model. http://www.corhio.org/services/health-information-exchange-services

**Colorado Telehealth Network – CTN**

Federally designated provider for Colorado's health care broadband infrastructure. CTN works in partnership with health information technology entities in the state. CTN advances policy goals and health outcomes to rural and underserved communities through the

promotion of Triple Aim, Workforce Development, Social Innovation, Technology Diffusion. http://cotelehealth.com/about-ctn/

**Colorado Veterans Affairs – CVA**

One of the four major operational divisions of the Department of Military and Veterans Affairs, the Colorado Division of Veterans Affairs (CVA) is a state agency mandated by state statute. http://vets.dmva.state.co.us/?page_id=98

**Community Health Center (Includes FQHC and RHC) – CHC**

Community-based, patient-directed organizations that serve populations with limited access to health care. https://www.cdc.gov/nchhstp/preventionthroughhealthcare/healthdepartments/commhealthcenters.htm

**Community Mental Health Center – CMHC**

Provider of comprehensive mental health services, offering inpatient, outpatient, home-based, school, and community-based programs to individuals and families.

**Connect for Health Colorado – C4**

Colorado insurance market place, established by Governor Hickenlooper through 2011- S.B 11-200. http://connectforhealthco.com/about-us/

**Continuity of Care Document – CCD**

Electronic message containing patient data such as a problem list, medications, allergies, immunizations, lab results, patient notes, and other summarized data. CCD's are electronically exchanged with other providers, usually through an HIE.

**Covered Entity**

Covered entities are defined in the HIPAA rules as (1) health plans, (2) health care clearinghouses, and (3) health care providers who electronically transmit any health information in connection with transactions for which HHS has adopted standards. https://www.hhs.gov/hipaa/for-professionals/covered-entities/index.html

**Critical Access Hospital – CAH**

A hospital certified under a set of Medicare Conditions of Participation (CoP), which are structured differently than the acute care hospital CoP. Colorado has thirty hospitals designated as CAHs.

**DIRECT (Secure Messaging)**

Contains the technical standards and services necessary to securely push content from a sender to a receiver. These services are used by providers and organizations to transport and share protected health information.

**EHR Incentive Program**

Provides incentive payments to Eligible Professionals (EPs) and Eligible Hospitals (EHs) that achieve meaningful use (MU) of Certified EHRs. CMS manages the Medicare EHR Incentive Program and coordinates the Medicaid EHR Incentive Program with state Medicaid offices. HCPF administers the EHR Incentive Program (EHRIP) in Colorado.

**Electronic Clinical Quality Measure – eCQM**

Specifications promulgated by CMS and ONC for the electronic reporting of clinical quality measures for multiple CMS programs. These include Meaningful Use and the Physician Quality Reporting System (PQRS).

**Electronic Health Record – EHR**

This term is often used interchangeably with Electronic Medical Record (EMR). It refers to a digital version of the paper charts in the clinician's office. An EHR/EMR contains the medical and treatment history of the patients. Also see Electronic Medical Record.

**Electronic Laboratory Reporting – ELR**

The electronic transmission from laboratories to public health agencies. The laboratory reports identify reportable conditions. ELR is promoted as a public health priority by CMS and is included as a meaningful use objective for public health.

**Electronic Medical Record – EMR**

This term is often used interchangeably with Electronic Health Record (EHR). It refers to a digital version of the paper charts in the clinician's office. An EHR/EMR contains the medical and treatment history of the patients. Also see Electronic Health Record.

**Electronic Prescribing – e-RX or ePrescribing**

Enables a clinician to order medication for the patient electronically.

**Eligible Hospital – EH**

Defined by CMS as a hospital eligible to participate in one or both of the Medicare and Medicaid EHR Meaningful Use Incentive Programs.

**Eligible Professional – EP**

Defined by CMS for the purposes of being eligible to participate in either the Medicare or Medicaid EHR Incentive Programs.

**Federal Financial Participation – FFP**

Federal government's contribution toward Medicaid services. FFP is dependent upon the state's guarantee of assurances under its Medicaid and waiver plans.

**Federally Qualified Health Clinic – FQHC**

A community health center receiving grants under Section 330 of the Public Health Service Act (PHS). FQHCs must serve an underserved area or population, offer a sliding fee scale, provide comprehensive services, have an ongoing quality assurance program, and have a governing board of directors. FQHCs qualify for enhanced Medicare and Medicaid reimbursements. In Colorado there are twenty FQHCs

**Health and Human Services – HHS**

A federal agency with the mission is to enhance and protect the health and well-being of all Americans.

**Health Care Effectiveness Data and Information Set – HEDIS**

A tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service. Because so many plans collect HEDIS data, and because the measures are so specifically defined, HEDIS makes it possible to compare the performance of health plans on an "apples-to-apples" basis. http://www.ncqa.org/hedis-quality-measurement/what-is-hedis

**Health Information Exchange – HIE**

The electronic movement of health-related information among organizations according to nationally recognized standards. The goal of health information exchange is to facilitate access to and retrieval of clinical data to provide safer, timelier, efficient, effective, equitable, patient-centered care.

**Health Information Technology – HIT and health IT**

Supports a variety of health care services using information technology. Information technology includes the use of computerized systems and the secure exchange of data in support of health care delivery. EHRs and Health Information Exchanges are examples of HIT.

**Health Information Technology for Economic and Clinical Health Act of 2009 – HITECH**

The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009, was signed into law on February 17, 2009, to promote the adoption and meaningful use of health information technology. Subtitle D of the HITECH Act addresses the privacy and security concerns associated with the electronic transmission of health information, in part, through several provisions that strengthen the civil and criminal enforcement of the HIPAA rules. https://www.hhs.gov/hipaa/for-professionals/special-topics/HITECH-act-enforcement-interim-final-rule/index.htm

**Health Insurance Portability & Accountability Act of 1996 – HIPAA**

United States legislation that provides data privacy and security provisions for safeguarding medical information. https://www.hhs.gov/hipaa/index.html

**Health Level 7 – HL7**

Provides a framework and standards for the exchange, integration, sharing, and retrieval of electronic health information. HL7 standards support clinical practice and the management, delivery, and evaluation of health services. These standards define how information is packaged and communicated from one party to another, setting the language, structure and data types required for seamless integration between systems.

**Health Resources and Services Administration – HRSA**

The primary Federal agency responsible for improving access to health care by strengthening the health care workforce, building healthy communities, and achieving health equity. HRSA's programs provide health care to people who are geographically isolated and, economically or medically vulnerable. HRSA is an agency with HHS

**Hospital Quality Improvement Payment – HQIP**

A Medicare program that pays hospitals for providing high quality services. https://www.medicare.gov/hospitalcompare/linking-quality-to-payment.html

**Implementation Advanced Planning Document – IAPD**

A document State Medicaid Agencies and State Designated Entities may submit to CMS to request funding for Health IT, Eligibility and Enrollment (E&E) system, and Medicaid Management Information System (MMIS) projects.

**Indian Health Services – IHS**

An agency within HHS responsible for providing federal health services to American Indians and Alaska Natives.

**Information Management Commission – IMC**

The IMC was designed to oversee strategic planning, to set policy for the state's information systems and to assure continuity in planning. https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=12

**Institute for Health Improvement – IHI**

A private organization committed to improving health care for patients all over the world. IHI is financed by foundations, companies, individuals, and fee based program offerings. IHI promotes Triple Aims as a fundamental part of health care reform.

**Integrated Eligibility – IE**

A system which can determine eligibility for a variety of state assistance programs.

**Large Enterprise Applied Planning Protocol™ - LEAPP™**

A structured protocol and associated methodology, developed and used by Mosaica Partners, to define, document, and validate actionable change management initiatives in large enterprises or States. The use of LEAPP™ often significantly reduces the gaps and overlaps – and the resultant costs – that result from uncoordinated planning efforts by individual departments or agencies. The multi-step protocol uncovers and documents stakeholder wants and needs within a well-defined subject area – such as the use of information technology to support the coordination of care of patients. Typical steps involve: structured interviews, document reviews, workshops to develop enterprise- or state-wide objectives, defining and documenting associated capabilities and enablers, and defining actionable initiatives. Use of the methodology enables initiatives to be directly linked back to the agreed upon objectives. The LEAPP™ methodology was used to guide OeHI's activities and efforts to develop the *Colorado Health IT Roadmap*.

**Long Term and Post-Acute Care – LTPAC**

Refers to a variety of providers including skilled nursing facilities, home care and hospices, long-term acute care hospitals, inpatient rehabilitation facilities and assisted living facilities.

**Long Term Care – LTC**

Comprehensive care to older, disabled, and chronically ill individuals who have a multitude of health issues, multiple care providers, and transition frequently from one setting to another.

**Long Term Support Services – LTSS**

Refers to the delivery of long term services and supports often through capitated Medicaid managed care programs.

**Master Person/Patient Index – MPI**

This identity management approach is used to uniquely identify a person/patient across multiple systems.

**Meaningful Use – MU**

The CMS incentive program to incent eligible providers and hospitals to implement and expand their use of EMRs.

**Medicaid Information Technology Architecture – MITA**

Provides a national framework to support improved systems development and health care management for the Medicaid enterprise.

**Medicaid Management Information Systems – MMIS**

An integrated information system containing six defined core subsystems or functional areas: Claims Processing; Management and Administrative Reporting; Provider Enrollment; Recipient Eligibility; Reference File; and Surveillances and Utilization Review

**Medical Assistance Provider Incentive Repository Collaborative – MAPIR Collaborative**

MAPIR is an IT tool designed to manage Medicaid EHR incentive payments and to improve accountability.

**National Commission on Quality Assurance – NCQA**

A private, not-for-profit organization dedicated to improving health care.

**National Institute of Standards and Technology – NIST**

The National Institute of Standards and Technology (NIST) is a measurement standards laboratory, and a non-regulatory agency of the United States Department of Commerce

**National Provider Identifier – NPI**

The NPI is a unique identification number for covered health care providers. https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/NationalProvIdentStand/

**Office of Behavioral Health – OBH**

Colorado department responsible for policy development, service provision and coordination, program monitoring and evaluation, and administrative oversight for the public behavioral health system. https://www.colorado.gov/pacific/cdhs/behavioral-health

**Office of eHealth Innovation – OeHI**

The Office of eHealth Innovation is responsible for defining, maintaining, and evolving Colorado's Health IT strategy concerning care coordination, data access, health care integration, payment reform and care delivery. https://www.colorado.gov/pacific/oehi/about-us-46

**Office of Information Technology – OIT**

An office of the state whose mission is to securely enable the delivery of government services through trusted partnerships and technology. http://www.oit.state.co.us/about

**Office of the National Coordinator – ONC**

The principal federal entity charged with coordination of nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information.

**Patient Centered Data Home**

The Patient Centered Data Home (PCDH) is a cost-effective, scalable method of exchanging patient data among health information exchanges (HIEs). PCDH is based on triggering episode alerts, which notify providers a care event has occurred outside of the patients' "home" HIE, and confirms the availability and the specific location of the clinical data. In this model, all clinical data becomes part of the comprehensive longitudinal patient record in the HIE where the patient resides, called the Patient Centered Data Home. http://strategichie.com/patient-centered-data-home-pcdh

**Patient Centered Medical Home – PCMH**

A team-based health care delivery model led by a health care provider that is intended to provide comprehensive and continuous medical care to patients with the goal of obtaining maximized health outcomes.

**Program Eligibility & Application Kit – PEAK**

The consumer portal and application that Coloradans use to receive food, cash, and medical assistance.

**Protected Health Information – PHI**

Protected health information (PHI) under US law is any information about health status, provision of health care, or payment for health care that is created or collected by a Covered Entity (or a Business Associate of a Covered Entity), and can be linked to a specific individual

**Quality Health Network – QHN**

One of two major HIEs in Colorado (see also CORHIO) QHN is a nonprofit dedicated to health care quality improvement. QHN provides for the secure exchange of electronic health information making information available to authorized caregivers – when and where it's needed – so providers can provide the best possible care.
https://qualityhealthnetwork.org/content.cfm?ID=8&page=QHN%20Services

**Quality Measure Reporting Tool – QMRT**

QMART is part of the State Innovation Model's practice transformation portal known as the Shared Practice Learning and Improvement Tool (SPLIT). QMART is an online web-interface that SIM and other quality payment programs use to manually enter practice level clinical quality measure data. http://www.practiceinnovationco.org/wp-content/uploads/2016/04/QMRT_Webinar_20160421-1.pdf

**Regional Accountable Entity – RAE**

Regional Accountable Entities (RAEs) were established through Phase II of Medicaid's Accountable Care Collaborative to be responsible for coordinating the physical and behavioral health for clients in their region.
https://www.colorado.gov/pacific/sites/default/files/ACC%20Phase%20II%20FAQs.pdf

**Regional Collaborative Care Organization – RCCO**

A pre-cursor to RAEs, a RCCO provides coordinated care for Health First Colorado (Colorado's Medicaid Program) clients by connecting them with Health First Colorado (Colorado's Medicaid Program) providers and other community and social services.
http://www.mycommunitycare.org/about/what-is-a-rcco/

**Regional Extension Center – REC**

A program, established by AARA/HITECH of 2009 to assist primary care providers in the adoption and meaningful use of electronic health records. ONC selected 62 organizations to provide these services. Starting in 2010, ONC provided these organizations with four-year grants.

**Rural Health Clinic – RHC**

A clinic that is located in a rural area designated as a shortage area, is not a rehabilitation agency or a facility primarily for the care and treatment of mental diseases, and meets all other requirements of 42 CFR 405 and 491.

**Software as a Service – SaaS**

A software distribution model in which applications are hosted by a service provider and made available to customers over the Internet or private network

**Substance Abuse and Mental Health Services Administration – SAMHSA**

The agency within HHS that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

**Triple Aim**

A framework developed by the Institute for Healthcare Improvement (IHI) that describes an approach to optimizing health system performance. IHI believes that new designs must be developed to simultaneously pursue three dimensions, called the Triple Aim: improving the experience of care, improving the health of populations, and reducing per capita costs of health care. Colorado's version of the Triple Aim is Best Care, Best Health, Best Value.

**Value Based Care – VBC**

Emerging as a solution to address rising health care costs, clinical inefficiency and duplication of services. In value-based models, doctors and hospitals are paid for helping keep people healthy and for improving the health of those who have chronic conditions in an evidence-based, cost-effective way.

Back cover photo was taken outside of Yuma, Colorado
by Matt Enquist, Outreach Manager, Colorado Rural Health Center, The State Office of Rural Health
(Used with Permission)

# Colorado's Health IT Roadmap

*November 2017*

OeHI
Office of eHealth Innovation