CIVHC
CENTER FOR IMPROVING
VALUE IN HEALTH CARE

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February 28, 2013

The Honorable John Hickenlooper
Governor
State Capitol
200 E. Colfax
Denver, CO 80203

The Honorable John Morse
President, Colorado State Senate
State Capitol
200 E. Colfax
Denver, CO 80203

The Honorable Mark Ferrandino
Speaker, Colorado House of Representatives
State Capitol
200 E. Colfax
Denver, CO 80203

Dear Governor Hickenlooper, President Morse and Speaker Ferrandino:

Enclosed please find the annual report on the status of Colorado's All Payer Claims Database (APCD), pursuant to CRS 25.5-1-204(5)(h), submitted by the APCD Advisory Committee created within that same statute.

The enclosed report summarizes:

- The need for and uses of a statewide compilation of health insurance claims data from private insurers, Medicare and Medicaid;
- The unique value and uses of an APCD;
- History of the Colorado APCD;
- Colorado APCD oversight and governance;
- Milestones achieved since 2010, including promulgation of rules for data submissions, securing sufficient funds to create the database, and developing and launching the Colorado APCD;
- Planned activity for 2013, including timeline for adding additional health insurance payers, and anticipated enhancements to reports available to the public on cohealthdata.org;
- Advice and input from stakeholders across Colorado on the development and outputs of the APCD;
- Data collection plan moving forward;
- Privacy and security protections for publicly available data and data requests; and the
- Financial plan for sustaining the APCD.

The aggregated health insurance claims data in the APCD begin to illuminate, for the first time, statewide patterns of health care costs and utilization in Colorado and will provide Coloradans with transparent information on the cost and quality of their health care. The APCD Administrator and members of the APCD Advisory Committee are committed to the belief that such data is essential to helping policymakers, providers, purchasers and patients make informed choices about our health care and coverage.

We welcome the opportunity to answer any questions you may have regarding the Colorado APCD and the enclosed report.

For the Advisory Committee:

Lalit Bajaj, MD, MPH
Chair
Research Director, Section of Emergency Medicine
Associate Professor of Pediatrics and Emergency Medicine
Director, Children's Clinical Research Organization
The Children's Hospital

For the Administrator:

Philip B. Kalin
President and CEO
Center for Improving Value in Health Care

cc: Senator Morgan Carroll, Senate Majority Leader
Senator Bill Cadman, Senate Minority Leader
Representative Dickey Lee Hullinghorst, House Majority Leader
Representative Mark Waller, House Minority Leader
Members, Senate Health & Human Services Committee
Members, House Health Insurance & Environment Committee
Members, House Public Health Care & Human Services Committee
Susan E. Birch, Executive Director, Dept. of Health Care Policy and Financing
Tom Massey, Deputy Director, Dept. of Health Care Policy and Financing
Lorez Meinhold, Deputy Director, Dept. of Health Care Policy and Financing
Katherine Blair, Health Policy Advisor, Office of the Governor
Legislative Council Library
Colorado Senate
Colorado House of Representatives
HCPF Budget Library, HCPF Budget Division

Colorado's All Payer Claims Database

Report to the Governor
and the
General Assembly
from the

APCD ADVISORY COMMITTEE
and the APCD ADMINISTRATOR
March 1, 2013

This report is submitted to the Governor and the General Assembly pursuant to the requirements of CRS 25.5-1-204 (5) as follows:

"….the administrator shall…(h) Report to the governor and the general assembly on or before March 1 of each year on the status of implementing the database and any recommendations for statutory or regulatory changes, with input from the advisory committee or its successor governance entity, that would advance the purposes of this section."

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Executive Summary

Overview

Our health care delivery system does not consistently deliver high-quality or cost-effective care. In part, that is because we simply don't know how much care we're using, or how much we're paying for it. And, no one can easily compare quality and cost among providers and health plans. The Colorado All Payer Claims Database (APCD) is working to help fill those gaps by giving consumers access to comparative cost and quality information for services and providing a more comprehensive picture of variation in health care spending and utilization across Colorado: helping identify trends, highlight gaps and spot opportunities for improvement.

> **"Collecting claims data from all payers and analyzing and publicizing cost and quality data are two critical steps to curbing state health care costs"**
>
> - National Governor's Association Center for Best Practices, Discussion Paper, February 2011

The APCD collects health insurance claims from public and private payers and maintains the data in a secure database. Created by legislation in 2010, this Colorado resource is administered by the Center for Improving Value in Health Care (CIVHC) through appointment by the Colorado Department of Health Care Policy and Financing (HCPF). The APCD is Colorado's most comprehensive source for information about health care spending and utilization in Colorado.

As of February 2013, the APCD includes health insurance claims from Medicaid and the eight largest health plans for the individual and large group fully-insured markets. These claims represent more than 2.5 million Colorado residents, or over 50 percent of the insured population in the state. By 2014, the APCD is projected to include claims information for remaining segments of the commercial market as well as Medicare, eventually reflecting the vast majority of insured Coloradans.

With the November 2012 launch of the APCD website, www.cohealthdata.org, health care analysts and policy makers now have a high level view of Colorado's health care spending and utilization patterns to support improvements to our health care system. Later this year, more detailed analysis and reports for consumers, employer purchasers and providers will be available through www.cohealthdata.org as additional health plan data is added to the APCD.

Privacy and Security

As required by statute, rules and the contractual oversight agreement between CIVHC and HCPF, the APCD rigorously adheres to all provisions of federal laws, including the Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health (HITECH) Act, and the regulations promulgated thereunder, which set clear guidelines for how health care data must be treated and stored. All aspects of APCD data collection, storage and analysis meet the highest standards of security and confidentiality. APCD data is encrypted both in motion and at rest, according to industry best practices. Public data reports are aggregated to sufficient size to prevent re-identification of data or other inferences based on diagnosis or treatment type.

Protecting the privacy and security of patient information in the APCD is of paramount importance to CIVHC. The APCD Data Manager, Treo Solutions, has extensive expertise in managing and protecting

sensitive health care claims information. Treo Solutions has an unblemished 10+-year track record of receiving, securing and storing Medicaid and commercial health claims without a breach.

Oversight and Governance

All aspects of the Colorado APCD's rules, operations, data protection and data uses are overseen through a series of carefully crafted oversight efforts to ensure that the operation of the APCD is consistent with the intent of the statute:

- HCPF appoints the Administrator, which is required by law and contract to strictly adhere to HIPAA and related state and federal laws. The Administrator must annually report data requests and uses, and must immediately report any breaches of data to HCPF.
- HCPF promulgates all rules associated with the APCD including how data is protected and released.
- A statewide, multi-stakeholder Advisory Committee makes recommendations to the Administrator for administration of the database.
- A separate Data Release Review Committee (DRRC) develops protocols for data release, reviews requests for APCD reports and advises the Administrator on whether to accept or reject those requests.
- The Administrator is required to make annual reports to the Governor and General Assembly.

Additionally, as the Administrator, CIVHC is subject to oversight of its board, which has a fiduciary duty and financial liability related to CIVHC's operations. Finally, because the APCD is funded by grants from The Colorado Health Foundation and The Colorado Trust, the Administrator is required to provide detailed reports on the progress of the APCD and a series of grant milestones.

A more detailed description of the oversight and governance structure can be accessed in Section 1.E titled "APCD Oversight and Governance".

Key Milestones

2010-2011 Milestones

The APCD Administrator is proud to have achieved all its statutory milestones well before the deadlines established by the Legislature. In 2012, Colorado health plans began to submit data to the APCD, resulting in the launch of the public-facing website, www.cohealthdata.org, on November 1, 2012. Colorado is now considered one of the nation's leaders in creating this capacity less than a year after starting APCD data collection.

Many individuals and organizations in the Colorado health care community have participated in the development and shaping of the APCD, chief among them the statutorily-created and state appointed APCD Advisory Committee. This entity broadly represents key stakeholders from across the state including two legislative appointees (see Appendix 2 for a list of Advisory Committee members). The Advisory Committee met monthly during the initial stages of development and continues to provide thoughtful, insightful guidance as the APCD evolves. By terms of the APCD statute, the Advisory Committee is due to sunset July 2013. The Administrator is working with HCPF and Colorado payers to develop a publicly accountable successor entity through either statute or rule.

The APCD benefited from close collaboration with Colorado health plans, especially in the development of data submission rules in 2010-11 and through 2012 when data submission began. The Colorado Association of Health Plans (CAHP) played an instrumental role in coordinating feedback from Colorado-based as well as national health plans. In other states developing APCDs, national carriers cite

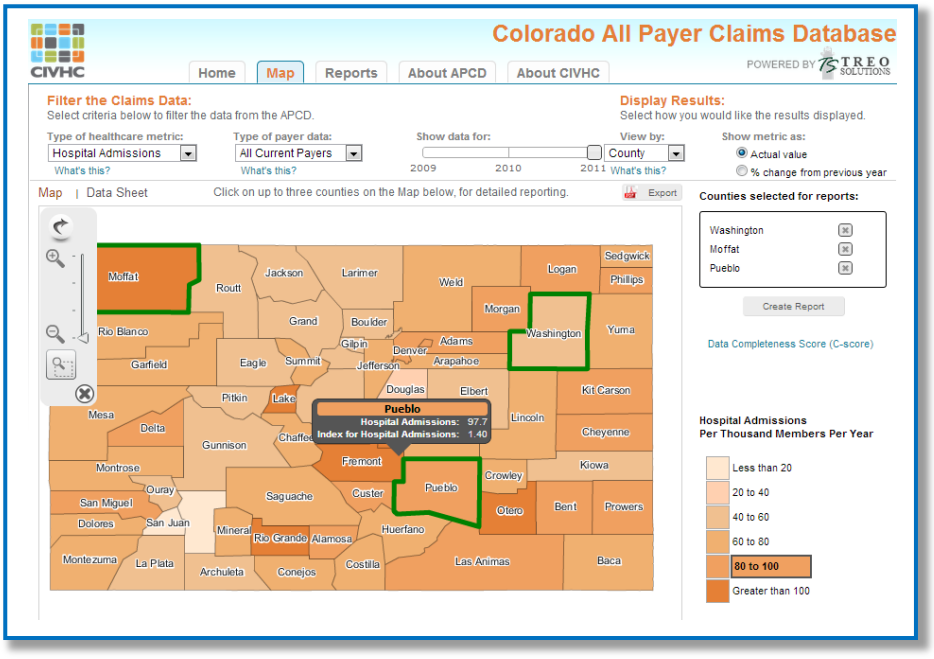
the "Colorado model" of collaboration as an example to follow during the development and implementation process. In addition to working with HCPF in its oversight capacity, the Administrator expects to continue working closely with the Division of Insurance (DOI), legislators and health plans as the APCD evolves.

More detailed information regarding 2010-2011 milestones may be found in the Administrator's previous reports to the General Assembly.

2012 Milestones

Several key milestones were reached in 2012 including:

- March 31: First round of test data was received from the largest eight commercial health plans (i.e., Aetna, Assurant, Cigna, Kaiser Permanente, United HealthCare, Anthem/Wellpoint, Rocky Mountain Health Plans, and Humana) plus Medicaid.
- June 30: Three years of historical data (2009-2011) were received from the same eight commercial carriers plus Medicaid.
- September: The Data Release Review Committee established HIPAA- compliant guidelines and an application process for data requests that meets appropriate research and health care improvement project criteria.
- September: Data submissions on 2012 claims began, and the majority of plans began submitting claims on a monthly basis.
- November 1: The public website www.cohealthdata.org was launched, displaying highly aggregated information on costs and utilization of health care services across the state. This timing exceeded the statutory requirement that the APCD be operational and reporting data by January 1, 2013.



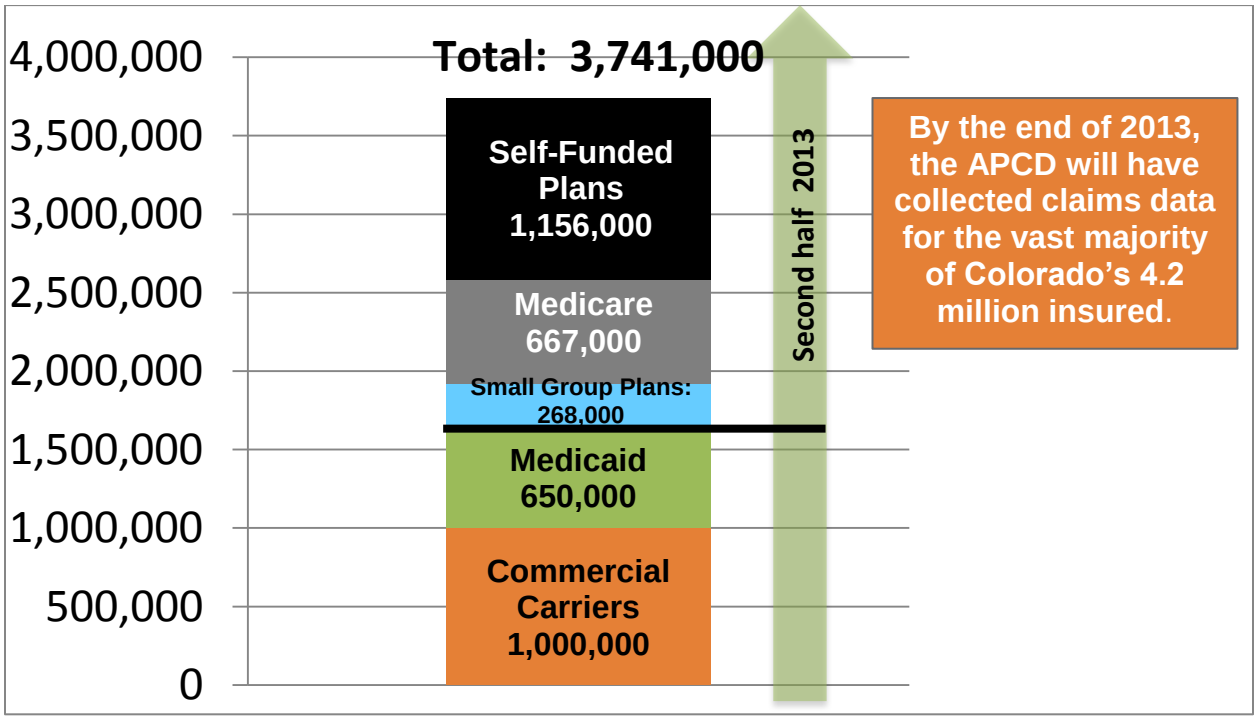
Sample Colorado APCD Interactive Map Report, Hospital Admissions
www.cohealthdata.org

Planned 2013 Milestones

Data Intake

- February 2013: The APCD and www.cohealthdata.org was refreshed to include new claims data from the payers already submitting data, Medicaid, and six new commercial plans.
- Spring 2013: The Administrator is working with legislators to enact a statutory change (HB 13-1015, Kraft-Tharp/Kefalas) that will enable the submission of claims data from the small group market, the most volatile segment of the insurance market. (See Section D below for an explanation of why this statutory change is needed.) Adding small group claims to the APCD will increase the database by approximately 268,000 insured lives.
- Late 2013: The Administrator is currently working with the Centers for Medicare & Medicaid Services (CMS) to receive Medicare claims for approximately 667,000 Medicare beneficiaries in Colorado. It is anticipated that Medicare claims will be included in the APCD by the end of 2013.
- Throughout 2013: Additional segments of the commercial market are expected to be added to the APCD, including small commercial insurers and self-funded plans.

Timeline for Adding Payer Claims



Note: Bar heights represent the total number of individual covered lives. Numbers of new lives are approximate based on publicly available payer data.

Reports and Analysis

- July 2013: An update of the APCD website will enhance existing reports by reporting information about major disease categories and adjusting for variation in illness severity. New reports will include more detailed total cost of care information and utilization and spending patterns for chronic conditions such as diabetes and asthma. Reports will also be "risk adjusted" to allow more accurate comparisons among groups of patients by statistically accounting for higher or lower levels of illness. Risk adjustment statistically accounts for differences in patients' medical severity.
- Summer 2013: The APCD expects to vet first editions of provider and facility specific data reports with stakeholder groups.
- End of 2013: Consumer-relevant reports are planned to be included on www.cohealthdata.org showing cost of services by named providers.

Once fully implemented, the Colorado APCD will be a comprehensive analytic tool for consumers, providers, businesses, policy analysts and health plans to support improving health and health care for Coloradans. The progress on the APCD to date lays the foundation for achieving a highly transparent system by providing health care cost and quality information as tools to drive value into the system.

Status of the Colorado All Payer Claims Database

I. Driving Toward High Quality, High Value Health Care: The Role of the All Payer Claims Database

A. Background: The Need for an APCD

Our health care delivery system does not consistently deliver high-quality or cost-effective care. In part, that is because we simply don't know how much care we're using or how much we're paying for it. And, no one can easily compare quality and cost among providers and health plans. The Blue Ribbon Commission for Healthcare Reform recommended the Colorado APCD in 2008 as an essential first step to support controlling cost and improving quality. The Commission recognized that in order to have a well-functioning health care marketplace, we need to arm consumers and employers with transparent cost and quality information.

Colorado's residents and businesses face continuing pressure due to the unsustainable rate of increase in health care costs. Workers insured under plans offered by employers continue to face higher premiums and out-of-pocket costs. Lockton Companies' 2012 survey[1] of Colorado employers found that:

- Colorado small business' health insurance premiums for 2013 coverage rose by 7.4 percent over 2012. While this was lower than was reported last year, this increase was still greater than the national average of 4 percent.
- More than 53 percent of employers reported that their plan deductible is $1,000 or greater, which is a slight increase from 46 percent in 2011.
- Less than half (46 percent) of Colorado's employers now offer fully insured coverage, down from 58 percent in 2012.

Consumer Role in Changing the Health Care Market

A common criticism related to the dramatic increases in health care spending is that consumers with insurance do not take enough personal responsibility for the cost of their own care. This concern and increases in premiums have led to significant shifts of cost through higher deductibles and co-pays. While the market is requiring consumers to be more responsible for their health care spending, with few exceptions it has not provided the basic tools that make any market work: access to meaningful and transparent information on the price and quality of medical care.

Health care is the rare exception to how shopping and transparent information work in the broader marketplace. Social media usage and widely available Internet access have fundamentally shifted how people share information about their experiences, ranging from restaurant reviews to more personal observations and information. The ability to access comparative information on nearly any product has lowered prices on many consumer goods and radically changed marketplaces such as the travel industry, shopping for cars or any other common products. Angie's List provides a forum for patients to provide feedback about experiences with health care providers, and Consumer Reports provides health plan and physician group ratings when data is available.

[1] Lockton Companies LLC, 2012 Colorado Employer Benefits Survey Report, released Oct. 26, 2012

Health care has been relatively slow to leverage these trends. A July 2012 Price Waterhouse Health Research Institute report[2] compared the health care industry to other industries that have experienced significant change through technology primarily in terms of accessing services. Only 8 percent of consumers are price sensitive when choosing a health care provider, compared to 69 percent of those shopping for leisure travel.

Purchasers recognize the need for more transparency about health care quality. Catalyst for Payment Reform (CPR), an independent, non-profit corporation funded by large employers and other health care purchasers, is working to provide price data for its members by January 2014. Among other goals, "CPR Purchasers expect health plans to allow self-insured customers full use of their own claims data including giving it to a third-party vendor to develop transparency tools."[3]

In a similar vein, Castlight Health, HealthPocket and other technology companies are beginning to provide online tools to employers to provide consumer-friendly health care shopping tools, including pricing and planning for out-of-pocket costs. While all of these initiatives reflect the growing interest and urgency in bringing useful cost and quality information to consumers and businesses, they rely on the public availability of national and local data which is typically limited to a specific type of provider or health plan. The Colorado APCD begins to provide a more comprehensive view of Colorado's health care landscape by providing data from both commercial and public payers across the entire health care system.

B. Unique Value of the APCD

The data sources currently used to inform health care analysis and policy-making (e.g., the national Medical Expenditure Panel Survey, hospital discharge information, and Medicaid and Medicare spending data) are limited either by the population they include or the point of care at which the data is gathered. Only an APCD gathers data from both the privately-insured and those enrolled in public programs, and from the full spectrum of care settings (e.g., physician offices, clinics, hospitals, surgery centers). Any health care service that generates a claim to a third- party payer can be captured in an APCD. The only health services that are not portrayed in APCDs are those that are provided free of charge or are paid directly by an individual to a provider without participation by an insurer.

In 2011, the National Governor's Association Center for Best Practices identified collecting claims data from all payers and analyzing and publicizing cost and quality data as two critical steps to curbing state health care costs[4]. Currently, seven states in addition to Colorado have functioning statutory APCDs (i.e., ME, VT, NH, MA, MN, MD, and OR); three are evaluating next steps (i.e., UT, TN, and KS); and four states are in the process of implementing APCDs (i.e., RI, CT, VA, and NY). In addition, Florida and Montana is in the process of evaluating the development of an APCD. Several regions have large scale, voluntary data collection efforts underway, including Washington's Puget Sound Health Alliance and the Wisconsin Health Information Organization; the Louisiana Health Care Quality Forum will begin data collection later this year.

[2] Price Waterhouse Health Research Institute, http://pwchealth.com/cgi-local/hregister.cgi/reg/customer-experience-in-healthcare.pdf; registration required to download report

[3] http://www.catalyzepaymentreform.org/uploads/Price_Transparency_Statement.pdf

[4] "Statewide Strategies to Control Health Care Costs", John Thomasian, NGA Center for Best Practices, Discussion Paper distributed at National Governor's Conference, February 2011

C. Uses of an APCD

An APCD provides a reputable, comprehensive, impartial source of information to support making important health care improvement decisions. APCDs combine health claims data from commercial insurers as well as Medicare and Medicaid. They can show us, at a glance, the current costs associated with various services, providers, and facilities; how often those services are accessed; where care is typically delivered (e.g., physician offices, emergency rooms); and how care aligns to best practice recommendations. Such information is essential for identifying interventions in both health care delivery and payment that can help to stem the trends outlined above.

After two decades of evaluating pockets of consumer-facing health data, researchers now have an improved understanding of how consumer health decisions are made. APCDs support decision-making by individual consumers (through public websites) as well as by health care purchasers, providers and policymakers (through detailed datasets and custom reports). APCDs in other states have provided information for a variety of audiences and uses, including:

- Empowering consumers to make informed decisions about where to get health care services (e.g., diagnostic services, surgeries) by providing facility and provider group specific cost comparisons and quality information.
- Enabling insurance purchasers (both private- and public-sector) to compare costs and utilization across insurers and providers, and make value-based decisions about insurance coverage.
- Helping public health officials compare disease prevalence across regions and populations.
- Allowing policymakers to estimate costs and impacts of anticipated policy changes related to health insurance.

These uses are even more important given the Colorado Health Benefit Exchange (COHBE) requirements to assist consumers with purchasing decisions. Consumers need accessible, timely and customized information about the providers in and out of health plan networks. More than ever, high quality reliable data is essential to the health care marketplace.

D. History of Colorado's APCD

The need for meaningful data on quality and cost can be traced back to the work of the Blue Ribbon Commission for Health Care Reform. Their January 2008 report to the General Assembly explicitly recommended the creation of a statewide warehouse combining claims information from public and private payers in order to gain a comprehensive picture of health care costs and utilization in Colorado. That recommendation led to the introduction of HB 10-1330 to establish the APCD. HB 10-1330 was subsequently enacted as CRS 25.5-1-204 (Appendix 1).

Overview of CRS 25.5-1-204

The statute authorizes the Executive Director of HCPF to appoint a broad-based advisory committee that is charged to:

> …make recommendations regarding the creation of the framework and implementation plan for a Colorado all-payer claims database for the purpose of facilitating the reporting of health care and health quality data that results in transparent and public reporting of safety, quality, cost, and efficiency information at all levels of health care.

The statute further directs the Executive Director to appoint an administrator of the database to produce and disseminate reports and data, and grants wide authority for data collection and reporting. The statute also lays out a series of deadlines for achieving key milestones. The legislation makes no provision for state funding for the APCD.

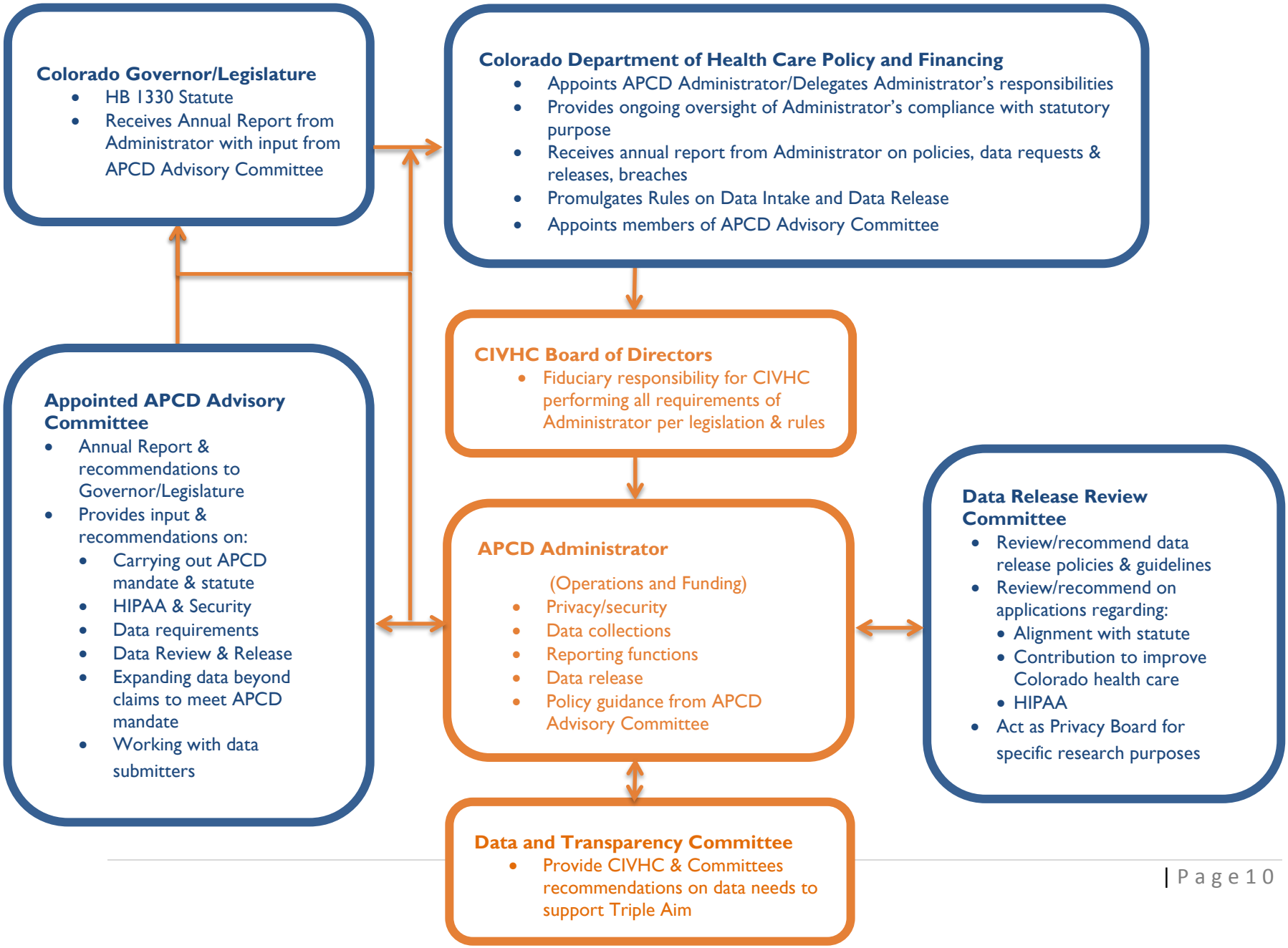
E. APCD Oversight and Governance

Governance of every aspect of the APCD has been established to ensure the APCD functions as intended by statute. Oversight includes:

- HCPF appoints the Administrator, which is required by law and contract to strictly adhere to HIPAA and related state and federal laws. The Administrator must annually report data requests and uses, and must immediately report any breaches of data to HCPF.
- HCPF promulgates all rules associated with the APCD including how data is protected and released.
- A statewide, multi-stakeholder Advisory Committee, established by statute, makes recommendations to the Administrator for administration of the database.
- A separate Data Release Review Committee (DRRC), established by HCPF rules, is required to develop protocols for data release, reviews requests for APCD reports and advises the Administrator on the appropriateness of those requests.
- The Administrator is required to make annual reports to the General Assembly and Governor.
- CIVHC, the APCD Administrator, is a non-profit organization governed by a board of directors with a fiduciary duty and financial liability related to CIVHC's operation of the APCD.
- Because the APCD is funded by grants from the Colorado Health Foundation and The Colorado Trust, the Administrator is required to provide detailed reports on the progress of the APCD, a series of grant milestones and an evaluation of the APCD's impact.

Figure 1 illustrates the structural oversight for the APCD. Each element is described in further detail in the narrative that follows.

Figure 1. APCD Oversight Roles and Relationships



- **HCPF.** HCPF provides the legal and regulatory framework and oversight for the operation of the APCD. Under the statute, HCPF is responsible for naming and overseeing the Administrator, appointing a statewide Advisory Committee, determining whether sufficient funding existed to create the APCD, and issuing rules describing what data may be collected, how it is protected and how reports may be released. Furthermore, HCPF required CIVHC to enter into a contract outlining HCPF's oversight of the APCD and a detailed Scope of Work containing reporting requirements in regard to key policies, data requests and releases, and any breaches.

- **APCD Advisory Committee.** CRS 25.5-1-204 specifies a broad-based advisory committee representing payers, providers, researchers, business, policy and consumer interests from across Colorado (see Appendix 2 for a list of Advisory Committee members). The APCD Advisory Committee made recommendations to the Governor and the General Assembly about the scope of and approach to APCD data gathering and reporting. The Committee is scheduled to sunset in July 2013; however, the Administrator is working with HCPF to establish an official successor entity. Refer to Section II for a complete description of the ongoing role of the Advisory Committee.

- **Data Release Review Committee.** Limited release of APCD data is allowable under the established HCPF rules, which dictate that all Health Insurance Portability and Accountability Act (HIPAA) privacy and security rules are strictly enforced and the purpose of the data request contributes to improving the health and health care of Coloradans. The rules require that a multi-stakeholder Data Release Review Committee (DRRC) review data requests and advise the Administrator whether such requests meet all statutory requirements.

- **Administrator.** The Executive Director of HCPF named CIVHC as APCD Administrator in August 2010. CIVHC is a nonpartisan, nonprofit organization committed to developing and advancing initiatives across Colorado that enhance consumers' health care experiences, contain costs and improve the health of Coloradans. Initially a public-private entity created by Executive Order of the Governor in 2008 and housed within HCPF, CIVHC became a stand-alone 501(c)(3) organization in 2011. See Appendix 3 for an overview of CIVHC.

  As Administrator, CIVHC is responsible for all administrative aspects of the APCD including:
  - Securing funding for establishing and operating the APCD and developing a long-term financial sustainability model;
  - Oversight of Data Manager, Treo Solutions to procure and maintain submitter data files, perform data modeling, and provide analytic tools;
  - Ensuring the public reports and data release requests generated from the APCD contribute to better health, better care, and/or lower costs for Coloradans and follow all HIPAA requirements for privacy and security;
  - Providing reports to the Governor's office, General Assembly, HCPF, Colorado Health Foundation and Colorado Trust;
  - Working with the APCD Advisory Committee to guide policy and administrative activities; and
  - Managing all APCD data requests in conjunction with the DRRC and in accordance with all HCPF promulgated rules and working with Treo Solutions to ensure a safe submission conduit for release of requested and approved data requests.

Specific to data release requests, the APCD Administrator is required to provide HCPF with an annual report on or before April 1 of each year that includes:

- Any policies established or revised pursuant to state and federal medical privacy laws, including HIPAA;
- The number of requests for data and reports from the APCD, whether the request was by a state agency or private entity, the purpose of the project, a list of the requests for which the DRRC advised the Administrator that the release was consistent with rule and HIPAA, and a list of the requests not approved;
- For each request approved, the Administrator must provide the HIPAA regulation pursuant to which the use or disclosure was approved, and whether a data use agreement or limited data set data use agreement was executed for the use or disclosure; and
- A description of any data breaches, actions taken to provide notifications, if applicable, and actions taken to prevent a recurrence.

- **CIVHC Board of Directors.** In accepting the role of APCD Administrator, CIVHC's Board of Directors (See Appendix 4 for a list of CIVHC board members) has the fiduciary duty to ensure that CIVHC's leadership and staff carry out all functions of the APCD in ways that meet the intent and specific statutory requirements of the APCD and the associated HCPF rules including all HIPAA laws related to privacy and security. It also ensures that CIVHC complies with all reporting and contractual responsibilities related to the oversight of the APCD including working with the APCD Advisory Committee and DRRC to provide reports to the General Assembly, the Governor, and HCPF, and to the foundations which have provided initial funding to the APCD.

- **Data and Transparency Advisory Committee.** The Data and Transparency Advisory Committee provides input and guidance to the Administrator on:
  - Strategies to measure progress and motivate action toward achieving the Triple-Aim goals;
  - Strategies to align measurement and transparency initiatives within Colorado, across states and at the national level; and
  - The types of information the APCD will generate including priorities for APCD reports and other research.

II. Milestones and Vision for the Future

A. Statutory Milestones

Developing and implementing the APCD began with meeting the requirements identified in CRS 25.5-1-204. The following section outlines key provisions and progress to date.

2010-2011 Milestones

- **Administrator**: HCPF named CIVHC as the Administrator in August 2010.

- **APCD Advisory Committee Convened**
  - *Legislative Deadline: August 11, 2010; First Meeting: September 23, 2010*
  - Beginning in September 2010, the Administrator convened this statutorily-required statewide stakeholder group to provide specific guidance on the APCD framework and approach.

- **First Report to the Legislature**
  - *Legislative Deadline: March 1, 2011; Completion: February 2011*
  - The APCD Advisory Committee submitted its first report to the Governor and General Assembly in February 2011 in advance of the March 1, 2011 statutory deadline.

- **Promulgation of Rules:**
  - *Legislative Deadline: January 1, 2012; Completion: August 24, 2011*
  - Beginning in February 2011, the Administrator led a process of weekly meetings with health plans and other stakeholders to create detailed specifications and timelines for data submission. This input was incorporated into the final version of the data submission guide and the draft rules, including timelines and other requirements. A final draft of the rules and the data submission guide were submitted for public review in early summer 2011. Consensus-building with health plans, along with guidance from HCPF and the DOI, paved the way for the final adoption of APCD rules by HCPF Executive Director Sue Birch on August 24, 2011 (see 10 CCR 250-5-1.200.5). This action was needed to create the APCD no later than January 1, 2012.

- **Funding for Creation of the Database**:
  - *Legislative Deadline: January 1, 2012; Completion Date: November 15, 2011*
  - By statute, the HCPF Executive Director was required to notify the Reviser of Statutes when sufficient funding was available to create the database. This notification occurred on November 15, 2011 in advance of the statutory deadline of January 1, 2012.

  No state funds were appropriated for the development or operation of the APCD. In order to achieve the statutory milestones for creating and launching the APCD, the Administrator secured grants from Colorado foundations. The Administrator gratefully acknowledges The Colorado Trust and the Colorado Health Foundation for their generous support during the initial development and through the spring of 2016 for the implementation phase. The Administrator is responsible for creating a business model to self-sustain the ongoing operations of the APCD beyond 2016.

2012 Milestones

- **Second Report to the Legislature**
  - *Legislative Deadline: March 1, 2012; Completion: February 2012*
  - The APCD Advisory Committee submitted its second report to the Governor and General Assembly in February 2012 in advance of the March 1, 2012 statutory deadline.

- **APCD Operational**
  - *Legislative Deadline: January 1, 2013; Completion Date:*

a) Data Intake: February 1, 2012

b) Initial Reporting and Analytics: November 1, 2012

The APCD started data intake operations in February when Treo Solutions, the Data Manager, established secure data intake systems for test claims data submissions from the eight largest commercial health plans and Medicaid. The APCD launched public reporting operations on November 1, 2012 with the release of www.cohealthdata.org, a freely accessible website populated with measures and reports based on APCD information.

Anticipated 2013 Statutory Milestones

- **APCD Advisory Committee Sunset**

CRS 25.5-1-204 sunsets the APCD Advisory Committee on July 1, 2013. The Administrator has benefited greatly from the Advisory Committee's expertise, advice and perspective since the start of the APCD development process in 2010. The Administrator strongly believes that there is tremendous value in continuing to have a broad-based, officially constituted advisory committee. The Administrator is currently working with HCPF and the health plans to develop an appropriate successor entity to the current Advisory Committee.

The Administrator would look to the successor Advisory Committee to ensure consistency with the statutory intent as the APCD evolves, including:

- Procedures for the collection, retention, use and disclosure of data from the APCD, including procedures and safeguards to protect the privacy, integrity, confidentiality and availability of any data;
- Procedures to ensure compliance with the "health insurance portability and accountability act of 1996", pub. L. 104-191, as amended, and implementing federal regulations; and
- Procedures to ensure compliance with other state and federal privacy laws.

B. Advice and Input from the Stakeholder Community

Throughout 2012, the Administrator received critically important input from diverse representatives from the Colorado provider, policy, payer and health care purchaser communities about the uses, structure and operation of the APCD.

Over 40 stakeholder meetings were held in 2012 to gather feedback on specific uses of APCD data that would be of high value to these groups to support health care improvement. A list of the types of groups that were the focus of the stakeholder outreach efforts and a synopsis of the types of APCD reports that would be helpful to them is available in Appendix 5.

The **APCD Advisory Committee** continued to meet on a quarterly basis to advise and provide input on a variety of issues related to the ongoing operations and future priorities of the Colorado APCD. Specific agenda items included: data privacy and security, development of APCD data release processes, APCD public reporting priorities and timeline, APCD Advisory Committee sunset and ongoing role, and planning for consumer and purchaser focused report development in 2013 and 2014.

Data submitters, including Colorado-based and national health plans, participated in discussions with APCD staff from the start of the project. Notably, the Colorado Association of Health Plans (CAHP) convened numerous meetings with health plans to discuss the proposed data submission requirements and related rule-making process, and served as a clearinghouse for comments and questions. These groups are currently participating in a process to make necessary changes to the current data submission requirements, including provisions that will facilitate the submission of dental claims data to the APCD beginning in late 2013. In addition, the Administrator began outreach to self-insured employers, and to the administrative services only (ASO) plans and third-party administrators (TPAs) that manage their health plans, about the process for securing claims submissions from this important market segment.

Health providers were consulted through provider associations, including the Colorado Medical Society, the Colorado Hospital Association and numerous specialty associations. These groups provided thoughtful feedback on the potential uses of APCD products. In 2013, these groups will continue to be a focus of APCD outreach efforts as the Administrator determines processes for sharing and vetting of comparative cost, utilization and quality information on a named payer, facility and provider group basis prior to public release.

Colorado's **Health Information Exchanges:** Colorado Regional Health Information Organization (CORHIO) and Quality Health Network (QHN) have provided important and ongoing input into the development of the APCD. These organizations have had discussions on leveraging common data elements and have explored opportunities for collaboration and information sharing that could help Coloradans improve health care and lower costs.

Consumer input is provided via members of the APCD Advisory Committee, the Data and Transparency Committee, the Data Release Review Committee, and through public comment. In addition, the Administrator met with numerous consumer advocacy organizations such as the Colorado Consumer Health Initiative, Health Advocates Alliance and others for targeted dialogue. The Administrator will continue to obtain consumer feedback during the development of a consumer-facing interactive website in 2013.

In 2013, the APCD Administrator will continue to provide ongoing opportunities for all stakeholders to participate and offer feedback through quarterly meetings of the APCD Advisory Committee and through ongoing targeted outreach to various stakeholder groups.

C. Data Collection and Warehouse Manager

In 2012, the APCD Advisory Committee, with input from subcommittees and local and national experts, developed warehousing, privacy/security and analytic/reporting requirements consistent with the intent of the HCPF statute. The Administrator contracted with Treo Solutions, a data management vendor, at the end of 2011. Treo Solutions was selected as the best vendor to meet the following key requirements:

- Demonstrated expertise in data privacy and security protection;
- Strong technical capabilities and experience with both public (Medicaid and Medicare) and commercial payers;
- The competitive cost of the proposed technology solution;
- The ability for the Colorado APCD to maintain ownership of intellectual capital; and
- Vision for an evolving approach to developing reports that are consistent with the scope of the language in the APCD statute.

In its more than 10 years of experience managing large volumes of data and serving many organizations around the country, Treo Solutions has never experienced a security breach.

In 2012, Treo worked in partnership with the Administrator to develop the infrastructure for the APCD's extensive claims warehouse and analytic/reporting capabilities, while consistently ensuring the privacy and security of health information. Extensive work with the payers was necessary to ensure data submission deadlines were met, waivers were submitted and approved when appropriate, and data submitted met the guidelines outlined in the data submission guide. Treo received initial test data from Medicaid and the eight largest commercial payers March 31, and in eight short months developed a sophisticated interactive reporting platform available publicly through www.cohealthdata.org.

D. Data Collection Plan

The plan for data submission emphasizes continued collaboration with health plans, including meetings with submitters as frequently as required during the ongoing data submission process. Additionally, Treo Solutions works with each of the health plan submitters on an ongoing basis for all submission, edit, and validation efforts. The following data collection milestones were reached in 2012:

- March 31, 2012: Test data submitted.
- June 30, 2012: Historic claims data from January 1, 2009 through December 31, 2011 received from eight commercial health plans and Medicaid.
- August 15, 2012: Claims data received from January 1, 2012 through June 30, 2012.
- September 15, 2012: First monthly dataset submission began and continues on an ongoing basis while also going through Source Data Integrity Checks.
- February 2013: Nine additional commercial health plans were added to the APCD.

By 2014, we anticipate collecting claims data for the vast majority of the 4.2 million insured Coloradans in the state. Figure 2 shows the anticipated schedule for claims data submissions into the APCD.

It is important to note that the APCD does not currently incorporate "all" claims for insured Coloradans. The following types of claims are not contained in the APCD warehouse. Plans to obtain these claim files are given for each type of claim submission.

Small group claims: Statute dating to 1972 (pre-HIPAA) restricts the uses for which mental health claims data from the small group market (i.e., businesses with 50 or fewer employees) can be shared, limiting such sharing to professional review and assessment of the appropriateness of care. Numerous changes to Colorado statute in the intervening 40 years have eliminated such restrictions for all other

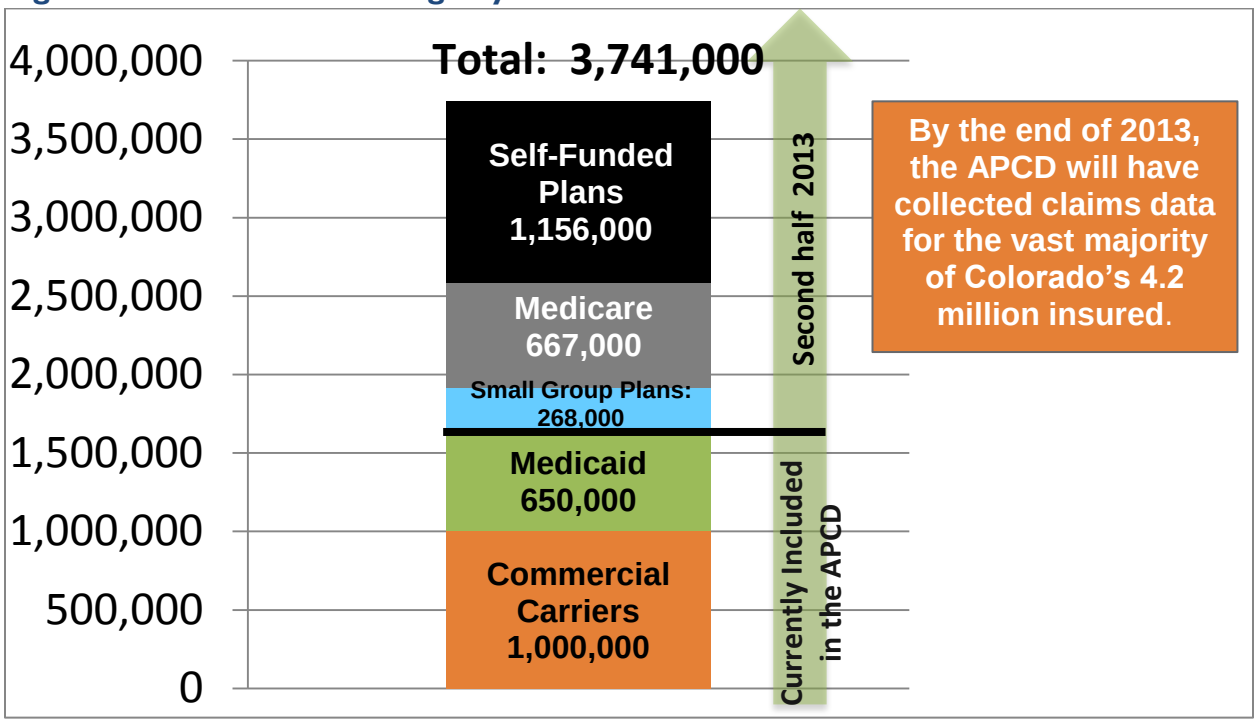
market segments. The practical impact of this is that health plans will not submit any claims data from the small group market: their information systems do not distinguish between mental health and physical health claims, and revamping those systems to separate out the mental health claims would impose a significant cost. Because small group is the most volatile sector of the insurance market, it is especially important to be able to view cost and utilization patterns for this market through the APCD. The Administrator has received support from the mental health, small business and health plan communities for changing the statute, and the Division of Insurance has indicated that it does not oppose the change. We are working with legislators to enact a statutory change (HB 13-1015, Kraft-Tharp/Kefalas) that will enable the elimination of this prohibition, and hope to begin securing this data by the end of 2013.

Self-insured plan data: Third-party administrators typically do not own the data for the self-funded plans they administer, and thus face legal challenges to sharing it. However, many self-funded employers see the need for including their data in the APCD, and in informal discussions have indicated their willingness to submit their information. Accordingly, the Administrator is working with the employer community to solicit voluntary reporting before exploring ERISA-compliant legislative remedies to compel reporting from self-insured employers. The Administrator is actively campaigning to secure voluntary submissions from self-funded employers by educating them directly as well as through the administrative services only plans and third party administrators that administer their benefits.

Data from non-fee-for-service plans: Plans such as Kaiser Foundation Health Plan of Colorado and Denver Health Medical Plan operate a significant portion of their business under capitated models that generally do not assign paid amounts to clinical activities in the same fashion as most fee-for-service systems. Thus, the capitated portion of the health plan's business typically does not generate claims in the usual sense. However, both Kaiser and Denver Health track clinical encounters, which are crucial to creating a comprehensive picture of utilization of health services. Both systems have indicated a willingness to work with the Administrator to identify data configurations that would support accurate and meaningful comparisons to other payers and providers. In the short term, the APCD Administrator has the authority to waive a requirement if the health plan demonstrates that its claims or payment system does not contain or cannot generate a particular data element. Approved waivers will be in effect until December 31 of the current year. The purpose of the waiver is to allow plans to improve compliance over time. The Administrator has received waiver requests from Kaiser and Denver Health for payment-related data elements. The request includes a description of the health plan's proposed strategy and timeline for coming into compliance with the APCD rules. In 2013, the Administrator will continue to work with HMO plans to implement these timelines.

Medicare data: The Centers for Medicare and Medicaid Services (CMS) provides access to Medicare data to researchers through a formal data release process, and to states under a number of project-specific initiatives. In the past CMS offered data to states for project-specific purposes related to dual eligibles or to one-time uses for specific projects. CMS recently created a new option for states to request research-only data projects. The APCD will coordinate submission of an application with HCPF and, if approved, incorporate Medicare data into public reports. CMS created a second Medicare data option through the creation of the Qualified Entity Program authorized by the ACA. A Qualified Entity may use Medicare data to build public reports about the quality of care as measured by NQF and CMS-approved measures. A Qualified Entity must demonstrate significant experience in calculating and disseminating quality information. The Colorado APCD project team is exploring both options, with the expectation that Medicare data will be incorporated into the APCD in the second half of 2013.

Figure 2. Timeline for Adding Payer Claims



Note: Bar heights represent the total number of individual covered lives. Numbers of new lives are approximate based on publicly available payer data.

E. Privacy and Security

Maintaining the strongest possible protections for security and privacy of health information is a foundational principle of the design and operation of the Colorado APCD. CRS 25.5-1-204 requires the APCD to comply with all HIPAA Privacy and Security requirements. All aspects of APCD data collection, processing, storage and analysis adhere to the highest standards of security and confidentiality. The data files are constantly protected by overlapping types of security provisions. Layers of security are reinforced through multiple electronic firewalls; controlled access to the physical plant; granting permissions to access a secure website to submit files; and emphasizing privacy and security at every point in the data transfer, storage and analysis processes. Treo Solutions, the APCD Data Manager, has never experienced a security breach in its more than 10 years of providing services to payers, hospitals and provider systems.

All data transmissions occur over secure lines; accordingly, there is no opportunity for readable data to be downloaded on to discs or hard drives from outside the warehouse. The APCD does not permit access to the files in the original form as submitted by health plans. Researchers and others may be granted access to different limited files, in accordance with the APCD data release request process. Reports available to the public through the APCD website (www.cohealthdata.org) are similar to those in the Dartmouth Atlas (www.dartmouthatlas.org) and contain only high level, aggregated information demonstrating variation in utilization and spending patterns for large population groupings.

The APCD database vendor has expertise in providing secure solutions that comply with HIPAA, the HITECH Act, and Federal Information Processing Standards as well as conforming to other standards published by the National Institute of Standards and Technology. Treo Solutions partners with a security advisory firm that conducts quarterly "hacker" simulation testing and annual review of all the company's data security operations, policies and procedures. The Colorado APCD also requires regular third party security operations audits. Treo uses state of the art encryption, biometrics and intrusion prevention and detection technologies to secure its facilities.

Data Security: When carriers submit files to the APCD, the datasets are encrypted in transit and sent over a secure connection to the APCD Collection and Warehouse Manager. This connection is limited to a pre-determined list of users and IP addresses (internet connections) reserved for the carriers submitting the data. The servers holding APCD data are "hardened" to prevent data from being downloaded to a laptop, USB drive, disc or other device. Remote access to the APCD is not permitted (e.g., from an employee's home computer). Further, the Data Manager conducts quarterly "penetration" (hacker) testing of the APCD to detect potential areas of vulnerability.

When the Data Manager receives a file, security protocols run automatically in a secure, access-restricted environment to confirm that the files contain the expected information before further processing and storage in the data warehouse.

The APCD Data Warehouse is housed in a highly secure facility in Albany, NY that is protected in the following ways:

- The building is monitored by closed circuit television.
- Security personnel monitor access to the facility.
- Access requires a proximity card, an identity card, and a key.
- The APCD data is hosted on dedicated equipment in secure enclosures.
- The equipment has been installed using best practice methods published by the National Institute of Standards and Technology (NIST).

Access to the database is strictly controlled with multiple levels of security:

- The APCD is structured to only allow the minimum amount of access to data absolutely necessary for a particular project related task. Access is based on specific roles and security clearance.
- Electronic access is carefully monitored, verified, recorded and controlled.
- Computer and network security staff are located in full view of physical access points during business hours.
- Firewalls, intrusion prevention systems, and other technologies maintain constant privacy and separation from the outside world.

Data encryption techniques offer additional protection. All APCD data is encrypted both while in motion (or being transmitted) and at rest (while stored). Encrypted data can only be decrypted by the party receiving the data or by the Collection and Warehouse Vendor during secure, internal data processing. This methodology is used throughout the APCD. An example of encryption is as follows:

Un-encrypted Data	→→→Becomes→→→	Encrypted Data
Name: Jane Doe	→→→→→→→→→→	3INDzLjr2SnG8ma4wvLoXw==z
DOB: 1/1/1980	→→→→→→→→→→	5IZB3CeWebVUYm2u9b1+
Gender: F	→→→→→→→→→→	9D4QK0mn5hE1/2F5
Admit Date: 2/1/2010	→→→→→→→→→→	bF6R7dA9rdz3k2dez
Discharged: 2/5/2010	→→→→→→→→→→	s7J51mWcr7WQ4CmN

De-identification: Protected data elements such as name, street address and Social Security number are removed as part of initial processing and replaced with a unique member identification number. Depending upon the type of data requested, birth date is replaced with age or age range, and zip code data is aggregated to the first three digits. Data suppression rules are in place to prevent the release of any information which may make it possible to identify any individual represented in the APCD database.

Controls on how the database is used for analysis and research: As noted earlier in this report, 10 CCR 2505-5-1.200.5 requires the APCD Administrator to establish a data release review committee to advise the Administrator regarding requests for data release. The DRRC (see Appendix 6 for a list of Committee members) was established in September 2012 and meets on a monthly basis. The APCD will provide only the minimum data elements necessary to accomplish a particular research goal or project, and only if the intended use of the data supports reaching the Triple Aim of better health, better care and lower cost.

An entity interested in obtaining data from the APCD is required to submit a written application that describes the purpose of the project, the methodology, the qualifications of the organization and the project staff, capacity to maintain data confidentiality and security, and experience with similarly complex data sets. The application must include justification for each data element that is needed for the project.

The DRRC will review applications and advise the APCD Administrator whether release of the data is consistent with the statutory purpose of the APCD, contributes to efforts to improve health care for Colorado residents, and complies with the requirements of HIPAA. The DRRC expects to review the first written request for access to APCD data in February 2013.

The data release processes established by the APCD Administrator contemplates the following types of data release:

- A custom report or a de-identified data set as defined under HIPAA, especially 45 CFR §164.514(a). De-identification by CIVHC and the APCD will be achieved by removing all 18 identifiers enumerated by the HIPAA de-identification standards at 45 CFR § 164.514(b)(2). Protected data elements will never appear in a de-identified file; all dates are shown as year only; zip codes will be reduced to three digits; if a zip code has fewer than 20,000 residents it will show as "000."
- A Limited Data Set as defined under HIPAA, especially 45 CFR § 164.514(e). Limited Data Sets may not include name, street address, or Social Security Number. Dates related to the individual may be included. Users of the Limited Data must apply a minimum cell size rule (also known as a "cell suppression rule") in any reports or outputs to prevent identifying individuals by inference.

As Table 1 illustrates below, the Colorado APCD collects only eight of the 18 HIPAA-protected health information (PHI) data elements. De-identified data and the Limited Data Set files will make use of only two of those eight collected data elements: zip code and date fields. Neither the De-identified data nor a Limited Data Set will ever include a patient's name, street address, or Social Security number.

For more details regarding privacy, security, and the data release process, see Appendix 7.

Table 1. How the Colorado APCD De-Identified Data and Limited Data Sets Treats HIPAA's 18 Direct Patient Identifiers

Data Element	De-Identified Data	Limited Data Set
1. Names	Not available	Not available
2. All geographical identifiers smaller than a state	First 3 digits of zip code[5]	5 digits
3. Dates directly related to an individual[6]	YY	DDMMYY
4. Phone numbers	Not collected	Not collected
5. Fax numbers	Not collected	Not collected
6. Email addresses	Not collected	Not collected
7. Social Security numbers	Not available	Not available
8. Medical record numbers	Not available	Not available
9. Health insurance beneficiary numbers	Not available	Not available
10. Account numbers	Not available	Not available
11. Certificate/license numbers[7]	Not available	Not available
12. Vehicle identifiers and serial numbers, including license plate numbers;	Not collected	Not collected
13. Device identifiers and serial numbers;	Not collected	Not collected
14. Web Uniform Resource Locators (URLs)	Not collected	Not collected
15. Internet Protocol (IP) address numbers	Not collected	Not collected
16. Biometric identifiers, including finger, retinal and voice prints	Not collected	Not collected
17. Full face photographic images and any comparable images	Not collected	Not collected
18. Any other unique identifying number, characteristic, or code except the unique code assigned by the investigator to code the data	Not collected	Not collected

F. Reporting and Analytics

As Colorado's APCD matures, it will provide progressively more detailed and meaningful reports to promote cost containment and quality improvement. In the fall of 2012, the Administrator released "Version 1.0" of public reports available through the APCD website www.cohealthdata.org. These initial report releases provide population-based views of variation in health care utilization and spending by geography, gender and age groups. The initial reports also included snapshot reports that demonstrate

[5] Reporting by the first three digits of a zip code is permitted in de-identified data if the geographic unit formed by combining all zip codes with the same initial three digits contains more than 20,000 people. This analysis will be performed prior to releasing any Colorado APCD de-identified data.

[6] De-identified data may contain age ranges, for example, 40-45 years of age, or may include month and year of birth or age on date of service.

[7] Member certificate/license numbers are not collected. Physicians' license numbers are collected.

variation in utilization rates and facility payments for commonly used medical procedures including imaging services, knee MRI, and routine delivery. Specific initial report releases included:

- Utilization of health care services per 1,000 residents (e.g., imaging, emergency department, inpatient hospital, outpatient, professional services);
- Percentage change in per capita expenditures for health services from year to year;
- Annual percentage change in per capita expenditures for primary health care services;
- Annual percentage change in per capita expenditures for non-primary care services (hospital, specialty care);
- Proportion of inpatient hospital admissions that result in re-admissions within 30 days; and
- Per capita expenditures associated with emergency department use.

As additional claims data is submitted to the APCD, we plan to update and expand on existing reports throughout 2013. Expected enhancements include more in-depth and detailed reporting around variation in utilization and spending patterns for professional and outpatient services, emergency department visits, total knee replacement surgeries and prescription vs. generic drug utilization. In mid-2013, the APCD will begin reporting data that has been adjusted for severity or burden of illness and risk of mortality. This risk-adjusted data will allow the APCD to begin reporting on variation in the incidence/prevalence and costs to treat common chronic diseases.

In late 2013, the APCD will begin to provide "Version 2.0" reports that include comparative cost, quality and value data of interest to consumers, providers, purchasers and researchers, such as:

- Providers' reported average cost for specific procedures (example: nhhealthcost.org);
- Incorporated quality of care information for providers (example: myhealthcareoptions.gov);
- Consumer-focused information that allows individuals/families with high-deductible insurance plans and medical savings accounts to effectively make value-driven choices about their health care;
- Employer-focused information and analysis to support value-based purchasing decisions. (example: http://www.wbgh.org/pressrelease.cfm?ID=155).

Examples of the above-referenced types of reports available from APCDs in other states can be found in Appendix 8.

By 2014, the APCD will be able to deliver advanced analytics based on multiple years of data that has been rigorously validated. The APCD will be able to add value through techniques that can compare and contrast service utilization based on comparable, risk adjusted populations. In addition, the analytics are expected to align with other data sources including disease registries and vital statistics, and support analysis that maximize analytic outputs without adding new reporting obligations on providers and payers.

Planning for the APCD reporting portfolio includes the following options for dissemination and distribution:

- ***Standard reports*** through the APCD website www.cohealthdata.org.
- ***Custom reports and datasets*** through a formal written request and data release process.
- ***Memberships and subscriptions*** that provide access to standard reports, periodically updated, and simple custom views of APCD data.
- ***Professional services*** that support specific analytic requests as permitted by the APCD's data use and release standards.

G. Financial Plan for Sustaining Operations

As noted earlier, no state funds were allocated to support Colorado's APCD. The APCD Administrator was therefore required to raise the necessary funds to build and sustain the database. The Administrator has received grant funding through spring of 2016 from the following sources to plan, develop, and operationalize the APCD:

APCD Planning and Development:

- Colorado Department of Health Care Policy and Financing – $400,000, expired
- Colorado Trust – $180,000, expired
- The Colorado Health Foundation – $1.2 million, expires 2013

APCD Development and Implementation:

- The Colorado Trust – $2 million, expiring spring 2016
- The Colorado Health Foundation – $2.5 million, expiring spring 2016

In 2012, CIVHC received grant funding from The Colorado Trust and the Colorado Health Foundation to support APCD development and operations through the spring of 2016. This funding supported the process of bringing health plan claims data on board and creating the infrastructure needed to develop custom reports and analytic tools. Because no state general funds have been allocated for the APCD, revenue to cover the ongoing costs of operating the APCD in 2016 and beyond are expected to be derived through customized reports and data sets.

Appendix 1: Statute Establishing the Colorado APCD

25.5-1-204. Advisory committee to establish an all-payer health claims database - creation - members - duties - creation of all-payer health claims database - rules - repeal.

(1) (a) Within forty-five business days after August 11, 2010, the executive director shall appoint an advisory committee to make recommendations regarding the creation of the framework and implementation plan for a Colorado all-payer claims database for the purpose of facilitating the reporting of health care and health quality data that results in transparent and public reporting of safety, quality, cost, and efficiency information at all levels of health care. The executive director shall appoint an administrator of the database.

(b) The executive director shall appoint the members of the advisory committee, consisting of the following members:

(I) A member of academia with experience in health care data and cost efficiency research;

(II) A representative of a statewide association of hospitals;

(III) A representative of an integrated multi-specialty organization;

(IV) A representative of physicians and surgeons;

(V) A representative of small employers that purchase group health insurance for employees, which representative is not a supplier or broker of health insurance;

(VI) A representative of large employers that purchase health insurance for employees, which representative is not a supplier or broker of health insurance;

(VII) A representative of self-insured employers, which representative is not a supplier or broker of health insurance;

(VIII) A representative of an organization that processes insurance claims or certain aspects of employee benefit plans for a separate entity;

(IX) A representative of a nonprofit organization that demonstrates experience working with employers to enhance value and affordability in health insurance;

(X) A person with a demonstrated record of advocating health care privacy issues on behalf of consumers;

(XI) A person with a demonstrated record of advocating health care issues on behalf of consumers;

(XIV) A representative from a community mental health center that has experience in behavioral health data collection;

(XV) A representative of pharmacists or an affiliate society;

(XVI) A representative of pharmacy benefit managers; and

(XVII) Two representatives of nonprofit organizations that facilitate health information exchange to improve health care for all Coloradans.

(c) The following persons shall serve as ex officio members of the advisory committee:

(I) The executive director or his or her designee;

(II) A representative of the department of personnel and administration;

(III) The commissioner of insurance or his or her designee;

(IV) The director of the office of information technology or his or her designee; and

(V) Two members of the general assembly, one from the majority party and one from the minority party.

(d) When making appointments to the advisory committee, the executive director shall include at least two members who reside in a rural community with a population of less than fifty thousand or who represent rural interests.

(e) (I) This subsection (1) is repealed, effective July 1, 2013.

(II) Prior to the repeal of this subsection (1), the advisory committee shall be reviewed as provided for in section 2-3-1203, C.R.S.

(2) The advisory committee shall make recommendations to the administrator regarding the database that:

(a) Include specific strategies to measure and collect data related to health care safety and quality, utilization, health outcomes, and cost;
(b) Focus on data elements that foster quality improvement and peer group comparisons;
(c) Facilitate value-based, cost-effective purchasing of health care services by public and private purchasers and consumers;
(d) Result in usable and comparable information that allows public and private health care purchasers, consumers, and data analysts to identify and compare health plans, health insurers, health care facilities, and health care providers regarding the provision of safe, cost-effective, high-quality health care services;
(e) Use and build upon existing data collection standards and methods to establish and maintain the database in a cost-effective and efficient manner;
(f) Are designed to measure the following performance domains: Safety, timeliness, effectiveness, efficiency, equity, and patient-centeredness;
(g) Incorporate and utilize claims, eligibility, and other publicly available data to the extent it is the most cost-effective method of collecting data to minimize the cost and administrative burden on data sources;
(h) Include recommendations about whether to include data on the uninsured;
(i) Discuss the harmonization of a Colorado database with other states', regions', and federal efforts concerning all-payer claims databases;
(j) Discuss the harmonization of a Colorado database with federal legislation concerning an all-payer claims database;
(k) Discuss a limit on the number of times the administrator may require submission of the required data elements;
(l) Discuss a limit on the number of times the administrator may change the required data elements for submission in a calendar year considering administrative costs, resources, and time required to fulfill the requests; and
(m) Discuss compliance with the "Health Insurance Portability and Accountability Act of 1996", Pub.L. 104-191, as amended, and other proprietary information related to collection and release of data.
(3) The advisory committee shall make recommendations to the executive director to determine how the ongoing oversight of the operations of the all-payer health claims database should function, including where the database should be housed.
(4) The administrator shall seek funding for the creation of the all-payer health claims database and develop a plan for the financial stability of the database. On or before March 1, 2011, the administrator shall report to the governor and the general assembly on the status of the funding effort and on the status of the recommendations of the advisory committee. The report shall include the final data elements recommended by the advisory committee, the final provisions contemplated to comply with the "Health Insurance Portability and Accountability Act of 1996", Pub.L. 104-191, as amended, and any other final recommendations that are ready at the time of the report. If sufficient funding is received through gifts, grants, and donations on or before January 1, 2012, as determined by the executive director, the administrator shall, in consultation with the advisory committee, create the Colorado all-payer claims database. The Colorado all-payer claims database shall be operational no later than January 1, 2013.
(5) If sufficient funding is received, the executive director shall direct the administrator to create the database and the administrator shall:
(a) Determine the data to be collected from payers and the method of collection, including mandatory and voluntary reporting of health care and health quality data. If the administrator requires mandatory reporting, CoverColorado, created in part 5 of article 8 of title 10, C.R.S., shall be included in the mandatory reporting requirements.
(b) Seek to establish agreements for voluntary reporting of health care claims data from health care payers that are not subject to mandatory reporting requirements in order to ensure availability of the most comprehensive and system wide data on health care costs and quality;

(c) Seek to establish agreements or requests with the federal centers for Medicare and Medicaid services to obtain Medicare health claims data;
(d) Determine the measures necessary to implement the reporting requirements in a manner that is cost-effective and reasonable for data sources and timely, relevant, and reliable for consumers, public and private purchasers, providers, and policymakers;
(e) Determine the reports and data to be made available to the public with recommendations from the advisory committee in order to accomplish the purposes of this section, including conducting studies and reporting the results of the studies;
(f) Collect, aggregate, distribute, and publicly report performance data on quality, health outcomes, health disparities, cost, utilization, and pricing in a manner accessible for consumers, public and private purchasers, providers, and policymakers;
(g) Protect patient privacy in compliance with state and federal medical privacy laws while preserving the ability to analyze data and share with providers and payers to ensure accuracy prior to the public release of information;
(h) Report to the governor and the general assembly on or before March 1 of each year on the status of implementing the database and any recommendations for statutory or regulatory changes, with input from the advisory committee or its successor governance entity, that would advance the purposes of this section;
(i) Provide leadership and coordination of public and private health care quality and performance measurements to ensure efficiency, cost-effectiveness, transparency, and informed choice by consumers and public and private purchasers.
(6) The administrator, with input from the advisory committee:
(a) Shall incorporate and utilize publicly available data other than administrative claims data if necessary to measure and analyze a significant health care quality, safety, or cost issue that cannot be adequately measured with administrative claims data alone;
(b) Shall require payer data sources to submit data necessary to implement the all-payer claims database;
(c) Shall determine the data elements to be collected, the reporting formats for data submitted, and the use and reporting of any data submitted. Data collection shall align with national, regional, and other uniform all-payer claims databases' standards where possible.
(d) May audit the accuracy of all data submitted;
(e) May contract with third parties to collect and process the health care data collected pursuant to this section. The contract shall prohibit the collection of unencrypted social security numbers and the use of the data for any purpose other than those specifically authorized by the contract. The contract shall require the third party to transmit the data collected and processed under the contract to the administrator or other designated entity.
(f) May share data regionally or help develop a multi-state effort if recommended by the advisory committee.
(7) The all-payer health claims database shall:
(a) Be available to the public when disclosed in a form and manner that ensures the privacy and security of personal health information as required by state and federal law, as a resource to insurers, consumers, employers, providers, purchasers of health care, and state agencies to allow for continuous review of health care utilization, expenditures, and quality and safety performance in Colorado;
(b) Be available to state agencies and private entities in Colorado engaged in efforts to improve health care, subject to rules promulgated by the executive director;
(c) Be presented to allow for comparisons of geographic, demographic, and economic factors and institutional size;
(d) Present data in a consumer-friendly manner.
(8) The collection, storage, and release of health care data and other information pursuant to this section is subject to the federal "Health Insurance Portability and Accountability Act of 1996", Pub.L.

104-191, as amended.
(9) The executive director shall promulgate rules as necessary to implement this section, which rules shall include the assessment of a fine for a payer required to submit data that does not comply with this section. Any fines collected shall be deposited in the all-payer health claims database cash fund, which is hereby created in the state treasury. The moneys in the fund shall be appropriated to the department of health care policy and financing for the purpose of maintaining the all-payer health claims database. The moneys in the fund shall remain in the fund and not revert to the general fund or any other fund at the end of any fiscal year.
(10) This section is repealed, January 1, 2012, unless the executive director notifies the revisor of statutes on or before such date that sufficient funding to create the database, as determined by the executive director, advisory committee, and administrator, has been received through gifts, grants, and donations.
(11) If at any time, there is not sufficient funding to finance the ongoing operations of the database, the database shall cease operating and the advisory committee and administrator shall no longer have the duty to carry out the functions required pursuant to this section. If the database ceases to operate, the data submitted shall be destroyed or returned to its original source.
Source: L. 2010: Entire section added, (HB 10-1330), ch. 299, p. 1406, § 1, effective August 11.

Appendix 2: Original Members of the APCD Advisory Committee

Name	Affiliation	Role (As specified in legislation)
Robert Alger	Vice President Health Plan IT Strategy, Kaiser Permanente	Integrated multi-specialty organizations
Scott Anderson	Vice President, Professional Activities, Colorado Hospital Association	Statewide association of hospitals
Lalit Bajaj (Co-Chair)	Associate Professor of Pediatrics, Physician, University of Colorado/The Children's Hospital	Academia with experience in health care data and cost efficiency research
Vinita Biddle[*] [I]	Benefits Strategist, Department of Personnel and Administration	Department of Personnel and Administration
Mark Carley[I]	Healthcare Administration, Rocky Mountain Health Plans	Non-profit health insurers
Micheline Casey[*] **(Kristen Russel)**	Chief Data Officer, Governor's Office of Information Technology	Governor's Office of Information Technology
Duane Choate	President/Chief Executive Officer, Oncure Medical Corp	Large employers that purchase group health insurance for employees
Jo Donlin*	Director of External Affairs, Colorado Division of Insurance	Colorado Division of Insurance
Richard Doucet	Chief Executive Officer, Community Reach Center	Community mental health centers with experience in behavioral health data collection
Butch Forrest	Chief Financial Officer, Southeast Colorado Hospital District	Self-insured employers
Marjie Harbrecht	Chief Executive Officer/Physician, Health TeamWorks	Non-profit organizations that demonstrate experience working with employers to enhance value and affordability in health insurance
Michael Hodes	Healthcare Data Analyst, Quality Health Network/Colorado Regional Health Information Organization	Non-profit organizations that facilitates health information exchanges to improve health care for all Coloradans
John Kefalas[*]	State Representative, State of Colorado	Colorado General Assembly
Philip Lyons	Director of Regulatory Affairs, United Healthcare	For profit health insurers
Thomas Massey[*] [I]	State Representative, State of Colorado	Colorado General Assembly
Jack McClurg	Chief Executive Officer, HealthTrans	Pharmacy benefit managers
Kavita Nair	Associate Professor, Pharmaceutical Sciences Program, University of Colorado	Pharmacists or an affiliate society
Annette Quintana (Co-Chair)[I]	Chief Executive Officer, Istonish	Small employers that purchase group health insurance for employees
Bob Semro	Policy Associate, Colorado Consumer Health Initiative	Consumer health care advocates
Carolyn Shepherd	Physician, Clinica Family Health Services	Physicians and surgeons
Leo Tokar	Insurance Broker/Consultant, Lockton Companies, LLC	Organizations that process insurance claims or certain aspects of employee benefit plans for a separate entity
Daniel Tuteur	Executive Director, Colorado Community Managed Care Network	Non-profit organizations that demonstrate experience working with employers to enhance value and affordability in health insurance

Nathan Wilkes	Owner/Principal Consultant, Headstorms, Inc.	Consumer health care advocate with experience in privacy issues
Jed Ziegenhagen*	Rates Manager, Department of Health Care Policy and Financing	Department of Health Care Policy and Financing
Patricia Zwemke[1]	Program Integrity Manager, Delta Dental of Colorado,	Dental insurers

*Denotes state government representatives, ex-officio members

[1]Denotes appointees who have resigned or switched jobs. New appointees have been deferred because of the APCD Advisory Committee legislative sunset process and until a successor entity is identified.

Appendix 3: About CIVHC

The Center for Improving Value in Health Care (CIVHC) is a non-profit, non-partisan organization committed to identifying, advancing, supporting and promoting initiatives across Colorado that meet the Triple Aim of better health, better care and lower costs. Envisioned by the Colorado Blue Ribbon Commission for Healthcare Reform, CIVHC was originally established in state government by executive order and transitioned to a stand-alone non-profit in 2011. CIVHC engages providers, employers, consumers and health plans across the entirety of Colorado's health care sectors to develop consensus, promote and support coordinated, high-quality and transparent health care systems. The focus areas below demonstrate our collaborative work to date in driving Colorado towards Triple Aim goals.

Focus Areas and Current Status

I. **Data and Transparency:** Providing transparent and comparative data on the cost and quality of health care services to consumers, providers, health plans, employers and policy makers.

Colorado's All Payer Claims Database Administrator

A statewide warehouse of claims information from commercial health plans, Medicaid and Medicare, the APCD will provide a comprehensive picture of health care spending and utilization for Colorado. Launched November 1, 2012, the APCD currently includes claims data for over 2 million covered lives in Medicaid and the eight largest commercial insurers. Claims data from Medicare, self-insured and small group plans will be added to the APCD in 2013-2014. The public APCD website (www.cohealthdata.org) currently illustrates county-level spending and utilization, as well as spending patterns for common medical procedures including imaging. By 2014, the website will feature consumer-focused, provider-specific comparisons of prices and quality for identified procedures.

Statewide Metrics and Dashboards

CIVHC measures Colorado's progress toward Triple Aim through metrics developed in 2011 by our Data and Transparency Advisory Group. Baseline measures and five-year targets were established for each metric and a statewide graphical dashboard was developed to visually depict progress. In 2013, the Data and Transparency Advisory Group plans to set targets for remaining metrics, enhance consumer experience metrics, build an online resource to promote adoption of metrics in programs and initiatives across the state, and integrate data from the Colorado APCD when available.

II. **Payment Reform:** Changing the incentives of the current fee-for-service payment system in order to achieve high quality, consumer-centered and cost-effective care.

Bundled Payment

CIVHC's "Framework for Transforming the Health Care Payment System" envisions a roadmap toward coordinated care and global payments. As part of that journey, CIVHC is promoting the expansion of care coordination payments and bundled payments, creating a "glide path" toward global payment.

Based on data on utilization, cost and variability in spending, CIVHC's Payment Reform Workgroup has targeted the following specified chronic conditions and treatment episodes for bundled payments:

Total knee replacement	Low back surgery unrelated to scoliosis
Hip replacement	Asthma
Coronary artery bypass graft	Coronary artery disease

We have developed a comprehensive toolkit of resources for providers and payers to use to develop these bundles. In addition, CIVHC is working with the Colorado Orthopedic Society and Colorado Medical Society to

develop consistent parameters for knee and hip replacement surgery bundles that can be used with multiple payers and facilities. Our goal is to launch these bundles by the end of 2013.

Payment Changes to Enable Behavioral and Physical Health Integration
With support from The Colorado Health Foundation and working in tandem with behavioral and primary care health providers, payers and other stakeholders, CIVHC is developing recommendations for integrating physical and behavioral health care. CIVHC is analyzing the data, payment and benefit design structures necessary to support this work and will make recommendations by summer 2013.

III. **Delivery System Redesign:** Improving the way health care is delivered through increased access to appropriate levels of care and increased communication and coordination among providers.

Palliative Care
In 2011/2012, CIVHC worked with a Palliative Care Advisory Group to update a best practices guide to support greater access to palliative care for patients in long-term care settings. The document is currently available on our website, and in early January a series of webinars will be available for facilities to educate staff on key elements contained in the guide.

To date, no studies have been conducted to determine the cost impact of palliative care in Colorado. In addition, there is no clearly established reimbursement structure for palliative care services making it difficult to quantify the availability of palliative care in Colorado. Accordingly, CIVHC is working with Mt. Sinai to conduct a palliative care cost analysis of 14 Colorado hospitals, and has commissioned Colorado Health Institute to conduct an in-depth analysis of where palliative care services are being provided in Colorado facilities. Results of both studies are targeted for completion by mid-2013.

Care Transitions
Throughout 2012, CIVHC convened the Care Transitions Task Force to identify mapping, policy, communication, resources and metrics opportunities to advance care transitions best practices. In 2013, the Care Transitions Task Force work to date will culminate into a statewide campaign aimed at aligning and accelerating existing efforts, creating opportunities for collective impact, and sharing best practices. This statewide "umbrella" campaign was inspired by similar campaigns in other states focused specifically on reducing hospital readmissions such as the Minnesota RARE Campaign and the No Place Like Home Campaign in Arizona and other states.

IV. **Health Data Affiliate:** A Colorado subset of the national innovative effort to connect entrepreneurs with a vast array of publically available data to improve health and health care in the United States.

In 2012, CIVHC volunteered to serve as Chair for the Colorado Health Data Affiliate, a regional arm of the national Health Data Initiative (HDI) effort. HDI, spearheaded by the Department of Health and Human Services, connects entrepreneurs across the country with a vast array of publicly available health care data as part of an effort to improve health and health care in the United States. As Chair for the Colorado affiliate, CIVHC serves as a convener and backbone organization to advance the use of transparent data to support reaching Triple Aim goals.

Late 2012, CIVHC hosted a statewide "Health Data Affiliate Strategy Session" of over 40 organizations across Colorado to help shape a statewide innovation ecosystem. In the upcoming year CIVHC will work with a steering committee to engage interested companies and stakeholders in efforts to expand health innovations across the state. With steering committee support, CIVHC intends to facilitate a statewide "Datapalooza" in 2014 to showcase innovative data projects.

Appendix 4: Current CIVHC Board of Directors Roster

Barbara Ryan, Ph.D. (Chair)
Ryan has extensive clinical and management experience working with diverse client populations across the age span, in settings that include community mental health, developmental disabilities, and with Kaiser Permanente. As Chief Executive Officer of Mental Health Partners, she has emphasized strategic planning built on innovation, redefinition of delivery systems, accountability and outcome measurement, and evidence-based practice. This includes a strong priority placed on collaboration and partnership among human service agencies to integrate services and planning for the benefit of people who are served. Ryan is a licensed clinical psychologist.

John Bartholomew*
Bartholomew is the Budget Director of the Department of Health Care Policy and Financing (HCPF), which serves almost 900,000 Coloradans with an annual budget of $5.0 billion. He has been a member of the HCPF team for over 11 years. Bartholomew has a Master's degree in Economics from the University of Colorado, Boulder and received his Bachelor's degree from the University of California, Santa Barbara. Prior to joining HCPF, he was the lead economist at the Business Research Division at the University of Colorado, Boulder. He has served on the board of the Denver Association of Business Economists from 2000 to 2009 and completed a fellowship at the Colorado Health Foundation.

Phyllis Albritton
Albritton has more than 20 years' experience in health care and technology policy development, most recently as the Executive Director of the Colorado Regional Health Information Organization (CORHIO), a non-profit organization created to facilitate health information exchange to improve care for all Coloradans. Her experience includes policy areas, such as telecommunications discounts for schools and libraries, oral health, children's basic health insurance and other federal programs.

Jay Brooke, M.S.W.
Brooke has been the Executive Director of High Plains Community Health Center in Lamar since it opened in 1995. High Plains has grown from its original five staff to its current staff of sixty-five and established itself as a model for delivering comprehensive primary care including medical, dental, behavioral health and health education. He has been the Board Chair for the Colorado Rural Health Center, the Colorado Community Health Network and the Colorado Community Managed Care Network.

Peg Brown, J.D., M.A.*
Brown is a native Coloradan with over twenty-five years' experience in health care policy. She currently serves as Deputy Insurance Commissioner for Consumer Affairs for the Colorado Division of Insurance. Her experience includes serving as the Executive Director of the Colorado Association of Health Plans, advisor to former U.S. Senator Hank Brown on health care and welfare policy, as staff to U.S. Senator Bob Packwood, and an attorney in private practice focusing on health and insurance issues.

Lisa M. Clements, Ph.D.*
Clements has served as the Department's Director of the Office of Behavioral Health since August, 2011. As such, she directs the mental health institutes at Fort Logan and Pueblo, as well as the Division of Behavioral Health that oversees community mental health and substance abuse treatment programs. Clements is a Licensed Psychologist and previously served as the Chief Behavioral Health Officer for Missouri HealthNet (Medicaid) in the Missouri Department of Social Services. She brings to Colorado more than two decades' experience in the field of behavioral health. She holds a doctorate in Counseling Psychology from the University of Missouri-Columbia in 1988; a Master's degree in Counseling Psychology from the same institution; and, a Bachelor's degree in Sociology from Mid-America Nazarene University in Kansas.

Greg D'Argonne
D'Argonne is the Chief Financial Officer of HCA-HealthONE LLC. He joined HCA in 1984 and served as the Assistant Controller at Parkland Hospital in Baton Rouge, LA and Controller at North Monroe Hospital in Monroe, LA. He has has served as CFO for HealthONE and the HCA Continental Division since 2001. Prior to

that, D'Argonne served as Controller and then CFO at Wesley Medical Center from 1994 to 2001. He is a native of New Orleans and graduated from Louisiana State University in 1981.

Kelly Dunkin, M.P.A.
Dunkin is the vice president of philanthropy for The Colorado Health Foundation. In this role, she leads the staff of the Foundation's three philanthropy teams; Healthy Living, Health Coverage and Health Care in their work investing in nonprofits throughout the state. Kelly has a diverse background in the philanthropy, nonprofit and education fields. Prior to joining the Foundation as grant program director in 2004, she was executive director of the Chowdry Family Foundation, a Lakewood, Colorado-based family foundation. She has also worked as an elementary school teacher in the Cherry Creek School District.

Michael Huotari, J.D.
Huotari is a nationally recognized attorney, with nearly 30 years' experience in health care business and law. Previous to his current position as Vice President of Legal and Governmental Affairs with Rocky Mountain Health Plans, he served as Executive Director for the Colorado Association of Health Plans. Prior to that, he held the positions of Vice President and General Counsel for DMCare, Inc., a disease management company and as Executive Vice President and General Counsel for Blue Cross Blue Shield Plans and affiliated companies in Colorado, Nevada, and New Mexico. Additionally, he had a law practice in Denver, Colorado.

Jillian Jacobellis, Ph.D., M.S.*
Jacobellis is the Deputy Policy Advisor, Colorado Department of Public Health and Environment (CDPHE). In this new role, she is leading the effort to build and support public health framework as it relates to health care reform. For over thirteen years she served as the Director of the Prevention Services Division and State Chronic Disease Epidemiologist, CDPHE. She is the President-elect of the Board of Directors, National Association of Chronic Disease Directors, and serves as chair of the NACDD Science and Epidemiology Committee. She is Assistant Clinical Professor, School of Public Health, University of Colorado.

Annette Kowal
Kowal began at the Colorado Community Health Network (CCHN) in August 1996. Her primary responsibilities are to oversee the implementation of CCHN's strategic plan and to work with the CCHN Board of Directors to lead the organization in achieving its mission. She has more than 15 years of Health Care experience, including three years with the Colorado State Auditor's Office conducting the annual financial audit of Colorado's Medicaid Program, and at the Department of Health Care Policy and Financing (HCPF), where she served as the manager of the Colorado Indigent Care Program and as a Policy/Rate analyst for Federally Qualified Health Centers (FQHCs).

Mark Levine, M.D.*
Levine is Chief Medical Officer at the Denver regional office of the Centers for Medicare & Medicaid Services. A practicing internist, he is certified by the American Board of Internal Medicine and is a fellow of the American College of Physicians. As Clinical Professor of Medicine, he teaches in the Division of Geriatrics and at the Center for Bioethics and Humanities of the University of Colorado Anschutz Medical Campus. He also serves on the faculty of the Colorado School of Public Health. He founded and now serves on the board of the Colorado Patient Safety Coalition.

Donna Marshall, M.B.A.
Marshall has served as Executive Director of the Colorado Business Group on Health (CBGH) since 1996. Prior to joining CBGH, Marshall was Manager of Managed Care Services for the Colorado Department of Health Care Policy and Financing Medicaid Division, where she directed all activities associated with the Primary Care Physician Program, the Drug Utilization Review Program and health plan contracts including procurement, negotiation, rate setting, enrollment and systems implementation issues, oversight and conformance with state and Federal statutes and regulations.

Paul Melinkovich, M.D.
Melinkovich, a board certified pediatrician, has served as President of the Colorado Chapter of the American Academy of Pediatrics (AAP) and Chair of the Committee on Community Health of the national AAP. He is currently the President of Board of Directors of the National Assembly on School-Based Health Care, and serves

on the Colorado Board of Medical Services. He was a founding member of the Colorado Children's Campaign, the child advocacy organization for Colorado and served as their 2nd Board President. Melinkovich is also is a Professor of Pediatrics and Preventive Medicine at the University of Colorado.

Elizabeth Soberg
Soberg has more than 20 years of industry experience, including 13 years with UnitedHealth Group, to this significant leadership role. She is responsible for the health plan's business development, operations, community and regulatory relationships. During her tenure with UnitedHealth Group, Soberg has served in several key leadership roles within Uniprise, Specialized Care Services and UnitedHealthcare. She is an active board member with the Denver Chamber of Commerce, Colorado Regional Health Information Organization, Colorado Associations of Health Plans, and Mental Health America of Colorado, and is a member of Colorado Concern, Colorado Forum and Colorado Association of Commerce and Industry.

Kelly Stahlman
Stahlman is a consumer health policy advocate, committed to bringing the voice of persons with disabilities and their families to public policy throughout Colorado. Kelly and her husband Bruce have three sons, including high school twins with disabilities. She works for the Colorado Alliance for Health and Independence (CAHI), a disability care coordination organization. Stahlman has worked on behalf of children and families with disabilities as Public Policy Director for Family Voices Colorado, as a Family Coordinator for Tri-County Department of Health, and as a Service Coordinator for The Arapahoe County Early Childhood Network.

Steven Summer
Summer joined the Colorado Hospital Association in September of 2006. Prior to that, he spent 13 years with the West Virginia Hospital Association as President and CEO. He also worked with the Maryland Hospital Association as senior vice president from 1990 to 1993 and vice president for professional activities from 1976 to 1990. He served as a member of Colorado's Blue Ribbon Commission for Health Care Reform. He is a Fellow in the American College of Healthcare Executives.

Dick Thompson
Thompson is the Executive Director and CEO of Quality Health Network – commonly referred to as QHN - headquartered in Grand Junction, CO. Thompson's business background includes three decades of management experience in software technology and support organizations with special successes in "start up" organizations. A resident of Grand Junction for more than 25 years, he has been an active leader in many youth and philanthropic initiatives in the area. He also serves on a number of boards including the Colorado Regional Health Information Organization.

Barbara Yondorf, M.P.P.
Yondorf is president of Yondorf and Associates, a Denver-based health policy consulting firm. Yondorf and Associates researches policy issues, conducts feasibility studies, analyzes fiscal data, provides strategic planning services, facilitates meetings, drafts legislation and writes grant proposals. Barbara has written numerous reports, studies and white papers on health policy. Before starting her own company, she oversaw the health grant-making program at Rose Community Foundation. She has served in senior management positions at the Colorado Division of Insurance, National Conference of State Legislatures, and the former Colorado Department of Health. Yondorf also staffed the Colorado Legislature's Joint Budget Committee.

Karen Zink
Zink is a Women's Health Care Nurse Practitioner in Durango, Colorado. She is the owner of Southwest Women's Health, a clinic providing primary and gynecologic care for women throughout the Four Corners since 1989. Her nursing roles include staff nurse, critical care (ICU/ER), nurse educator, childbirth educator, Hospice volunteer, and nurse practitioner. She works full-time as an APN and serves as a clinical preceptor for nurse practitioner students.

* Denotes ex-officio status

Appendix 5: APCD Stakeholder Outreach Groups and Priorities Summary

Below is a list of organizations the Administrator met with prior to the launch of the APCD to understand their needs and priorities related to cost and utilization data. Numbers in parenthesis indicates number of meetings held.

- Colorado Consumer Health Initiative
- Colorado Rural Health Center
- ClinicNET
- Colorado Center on Law and Policy
- Chronic Care Collaborative
- Multiple Sclerosis Society, CO-WY Chapter
- Colorado Cross Disability Coalition
- Colorado Department of Health Care Policy and Financing
- Colorado Department of Public Health and Environment
- Colorado Health Benefit Exchange
- Quality Health Network/Colorado Beacon Consortium
- Colorado Hospital Association (2)
- Colorado Medical Society
- Colorado Community Health Network, Colorado Community Managed Care Network, Colorado Associated Community Health Information Exchange (2)
- Lupus Foundation of Colorado
- Southeast Colorado Area Health Education Center
- Data Services for Healthcare Foundation (DASH)
- Pueblo Triple-Aim
- Colorado Nurses Association (2)
- Colorado Center for Nursing Excellence (2)
- Colorado Behavioral Health Council
- Colorado School of Public Health
- Colorado Health Care Association and Center for Assisted Living
- Colorado University Research Community
- Colorado Health Institute
- Colorado Foundation for Medical Care
- CIVHC Stakeholder Groups (6)
- Advocacy Denver
- Mental Health Partnership Group
- On Your Own Health

Stakeholder Group	APCD Analytic and Reporting Priorities	Multiple Mentions	Public Report V 1.0	Public Report V 2.0	Custom Report Available
Consumers	**Access**				
	Primary Care – Urban vs. Rural comparisons	Yes	X	X	X
	Reproductive Health Services – variation in access, cost, who pays				X
	Behavioral Health Services – does greater access to/utilization of services affect costs in other areas, e.g., ER/ED visits, potentially avoidable events?				X
	Utilization and Cost				
	High-cost, high volume procedures – imaging, joint replacement, blood tests	Yes	X	X	X
	Chronic Disease				
	COPD, etc. outcomes in guideline following vs. non-following groups	Yes		X	X
	Prescription Drugs				
	Do particular diagnoses drive prescribing behavior?				X
	Adherence to Drug Protocols – for treatment of chronic conditions, behavioral health diagnoses, in the elderly population			X	X
	Pediatric Prescribing – utilization of Ritalin and anti-depressants			X	X
	Autism – rates, prescription drug vs. other treatment			X	X
	Links between specific medications and other diagnoses (e.g., obesity)	Yes			X
	Do price tiers or copays affect compliance (payer by payer comparisons)?	Yes		X	X
	Payment and Delivery System Reform				
	How to capture the contribution of rural, safety net and free clinics?	Yes		X	X
	Compare Delivery Models – ACC, large, small and self-funded plans	Yes			X
	Evaluate effectiveness of wellness program				X
Quasi-Public Entities COHBE, CORHIO,	**Utilization and Cost**				
	Variation in utilization and allowed amts. for high cost, high use procedures	Yes	X	X	X
	Total Cost of Care – measures, trend analysis, forecasts	Yes	X	X	X

Stakeholder Group	APCD Analytic and Reporting Priorities	Multiple Mentions	Public Report V 1.0	Public Report V 2.0	Custom Report Available
QHN	Comparisons across payer and provider types	Yes	X	X	X
Department of Insurance	Development of Fee Schedules				X
	Analysis to support Risk Adjustment, Reinsurance, Risk Corridors				X
Providers and Provider Groups	**Utilization and Cost**				
	Readmissions, Nursing Home vs. Home/Community Health Care	Yes		X	X
	Analysis of Regional Variation – identify success stories, explore reasons	Yes	X	X	X
	Hospitals (small and medium) – analytics related to cost, quality and access		X	X	X
	Chronic Disease				
	Incidence/prevalence of CHF, COPD, Diabetes, Asthma, etc.	Yes	X	X	X
	Analyze standards of care, adherence to treatment protocols	Yes		X	X
	Analytics to inform efficiency improvement opportunities for Hospitals			X	X
	Payment and Delivery System Reform				
	Care coordination and payment reform modeling are priorities	Yes		X	X
	General				
	Identify a narrow set of standardized measures to apply across plans		X	X	X
	Create alignment between payer, provider and consumer information			X	X
	Establish baselines and build trust with Tier 1 reports	Yes	X		
	Long Term Care Analysis				
	Medicaid Acuity Data needed for Long Term Care/Transitions work	Yes		X	X
	Inform Long Term Care policy decisions	Yes		X	X
	Evaluate cost effectiveness of Home/Community vs. Facility based care	Yes			X
	Nurses				
	Identify contributions of APNs/Nurses based on NPI number			X	X
	Follow ANA recommendations on tracking of specific diseases, e.g., Diabetes			X	X
	Link with Nursing sensitive measures, e.g., NDNQI				X
	Hospital Discharge Disposition analysis – inform Care Coordination	Yes		X	X

Stakeholder Group	APCD Analytic and Reporting Priorities	Multiple Mentions	Public Report V 1.0	Public Report V 2.0	Custom Report Available
Public Health Public Policy CDPHE, HCPF	**Utilization**				
	Admissions, ER/ED Use, High Cost Imaging	Yes	X	X	X
	Compare Medicaid and Commercial Populations	Yes	X	X	X
	Public Health				
	Identify Benefits (Avoided Costs) of Public Health Programs, e.g.,Obesity, Diabetes, Tobacco, Hospital Acquired Infections, etc.				X
	General				
	Analyses that consider socioeconomic disparities	Yes		X	X
	Links to vital statistics and external sources of quality measures	Yes		X	X
	Analysis of Churn	Yes		X	X
Non-Clinical Research and Policy Analysis CHI, CFMC, CU School of Public Health	**Utilization and Cost**				
	Look at employer level data – cluster according to group number, create sub-groups by type of industry, analyze patterns of utilization, injury and illness			X	X
	Look back at employer offered plans, how is this changing, who has dropped?	Yes		X	X
	Effectiveness of wellness programs – large commercial insurers	Yes			X
	Demographic and socioeconomic variation important for a complete picture	Yes		X	X
	Prescription Drugs				
	Focus on drug classes of high interest, utilization and cost, e.g., anti-psychotics (paliperidone), prescription opioids – significant Public Health value	Yes		X	X
	Best Practices/Standard of Care				
	Use mapping to identify diffusion of innovation and adoption of best practices over time – physician practice as the unit of analysis	Yes		X	X
	Cost				
	Consumer Reports Top Diagnostic Services Being Overused in Colorado	Yes		X	X

Stakeholder Group	APCD Analytic and Reporting Priorities	Multiple Mentions	Public Report V 1.0	Public Report V 2.0	Custom Report Available
Health Plans	The payers declined to participate as a stakeholder group. Based on informal feedback, CIVHC anticipates particular interest in comparative analysis of allowed amounts			X	X
Purchasers (Employers)	Analysis of cost effective benefit plan design	Yes			X
	Analysis of relative cost performance of different health insurance plans	Yes			X
	Provide comparative provider cost and quality information to employees	Yes		X	X
CIVHC Stakeholder Groups, e.g., CIVHC Connect, Care Transitions, Payment Reform, Palliative Care	Analysis of Churn into and out of Medicaid	Yes		X	X
	Utilization and Cost				
	Cross payer and provider analyses of potentially preventable events, ambulatory sensitive admissions, etc.	Yes	X	X	X
	Access				
	Retrospective analysis of primary care after hospital admission/ER visit Identify informal/virtual care networks – what docs are feeding the hospitals?			X	X
	Payment and Delivery System Reform				
	Care patterns for diagnoses with "grim" prognoses, re-hospitalization, live discharge from Hospice, etc.				X
	Medicare expenditures last 6-months of life	Yes		X	X
	Overutilization – Chemo administered last 6-months of life				X
	Cost and Utilization related to Palliative and Hospice Care	Yes		X	X

Appendix 6: Data Release Review Committee Members

Name	Title & Organization	Representation
Jonathan Mathieu	Director of Data & Research, CIVHC	Committee Chair
Alma Jackson	Associate Professor, Loretto Heights School of Nursing, Regis University	Non-Physician Provider
Scott Anderson	Vice President, Professional Activities, Colorado Hospital Association	Hospital
Ako Quammie	Director of Information Systems, Integrated Physicians Network	Physician Provider
Mark Miller	Senior Manager of Business Intelligence, Kaiser Permanente	Payer (nonprofit)
Matthew Frankel	Blue Cross Blue Shield/Anthem/Wellpoint	Payer
Rene Horton	Business Analysis Section Manager, CO Department of Health Care Policy and Financing	Public Payer
Nathan Wilkes	Owner/Principal Consultant, Headstorms, Inc.	Consumer Perspective
Bob Semro	Health Policy Analyst, The Bell Policy Center	Consumer Perspective
Amy Downs	Senior Director for Policy and Analysis, Colorado Health Institute	Non-Academic Research Perspective
Kavita Nair	Associate Professor, Pharmaceutical Sciences Program, University of Colorado	Academic Research Perspective

Appendix 7: Privacy, Security and Data Release Fact Guide

Colorado All Payer Claims Database
Privacy, Security and Data Release Fact Guide

CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

All Payer Claims Database: Background

The Colorado All Payer Claims Database (APCD) collects health insurance claims from public and private payers into a secure database. Created by legislation in 2010 and administered by the Center for Improving Value in Health Care (CIVHC), the APCD is Colorado's most comprehensive source for information about health care spending and utilization in Colorado. As of January 2013, the APCD includes health insurance claims from Medicaid and the eight largest health plans for the individual and large group fully-insured markets. These claims represent more than 2.5 million Colorado residents, or over 50 percent of the insured population in the state. By the end of 2014, the APCD is projected to include claims information for remaining segments of the commercial market as well as Medicare, eventually reflecting the vast majority of insured Coloradans.

APCD Security and Data Availability: Summary

In accordance with Department of Health Care Policy and Finance (HCPF) rules (10 CCR 2505-5-1.200.5), CIVHC is required to ensure the APCD follows all HIPAA privacy and security regulations to protect patient information. Claims information in the APCD is encrypted, both in transmission and while stored, and resides on secure servers which undergo systematic ongoing testing for security. Only high-level aggregated information is available on the public APCD website (www.cohealthdata.org); **no** individual or personal information may be seen on the APCD site.

Limited and controlled release of APCD data is allowable under the established HCPF rules, provided Health Insurance Portability and Accountability Act (HIPAA) privacy and security rules are strictly enforced and the purpose of the data request meets the goals of the Triple Aim for Colorado: better health, better care and lower costs. The rules require that a multi-stakeholder Data Release Review Committee (DRRC) review data requests and advise the Administrator whether such requests meet these criteria and will contribute to better health for Coloradans.

APCD Security and Data Availability: Detailed Q&A

Who decides who can get information from the APCD? What rules do they use?

The APCD governance rules promulgated by HCPF require that the DRRC develop protocols for the release of APCD data. The DRRC comprises health care data and analytical experts representing a variety of organizations and stakeholder perspectives. The rules require that the DRRC shall review the request and advise the Administrator on whether release of the data is consistent with the statutory purpose of the APCD, will contribute to efforts to improve health care for Colorado residents, complies with the requirements of HIPAA and will employ appropriate analytical methods. Requests must meet all these criteria in order to be approved. Approved data requests then require the

requestor to enter into a very strict Data Use Agreement. Additionally, the APCD Administrator is required to report annually to HCPF listing data requests, their use and how they met HIPAA requirements.

What kind of information can organizations get from the APCD?
By rule, the APCD Administrator is permitted to provide or "release" data at varying levels of detail and specificity. All releases of APCD data must meet all HIPAA privacy and security guidelines and are subject to review and advisement from the DRRC, which requires that the intended use supports reaching the Colorado Triple Aim of better health, better care, and lower costs. For example, public and private entities may request information on costs associated with treatment of a specific diagnosis or disease by region or county, variation in cost of procedures by facilities, and utilization of high cost services such as MRIs for a defined population.

Are there limitations on the data that organizations can get from the APCD?
Yes, APCD data releases are subject to both HIPAA restrictions and state legal and regulatory restrictions to protect privacy:

1. In keeping with the "minimum necessary" standard established under HIPAA, applicants must demonstrate need and provide justification for each data element requested. The DRRC will recommend and the APCD Administrator will release only those data elements which are specifically necessary to accomplish the applicant's intended use.
2. Protected Health Information (PHI) may only be released in limited circumstances for public health, health care operations and pre-approved research purposes, and can never be shared publicly as a result of a research project or program.
3. For research-related requests, applicants may be required to show written approval from an Institutional Review Board or a Privacy Board as part of the Application.
4. As part of the Data Use Agreement, all Applicants must provide written assurances that:
    - Data will be used only for the purpose stated in the Application.
    - No attempt will be made to use any data supplied to ascertain the identity of specific insured individuals or patients, or to report data at a level of detail that could permit a reader to ascertain the identify of specific insured individuals or patients, nor will downstream linkages to outside data sources occur without specific authorization from the APCD Administrator.
    - Restricted data elements such as PHI will not be released except as specifically approved in the original Application and Data Use Agreement.
    - The Applicant will obtain these assurances in writing from any recipient of data or agent that processes data on behalf of the Applicant.
    - The data will not be re-released in any format to anyone except personnel identified and approved in the original Application and Data Use Agreement.

What information is required in order to submit a data request?
According to both APCD statute and HCPF rules, all data release applications must be submitted in writing and describe in detail:

- The purpose of the project and intended use of the data.
- Methodologies to be employed.
- Type of data and specific data elements requested along with justification.
- Qualifications of the research entity requesting the data.
- The specific Privacy and Security measures that will be employed to protect the data.
- Description of how the results will be used, disseminated or published.

The DRRC reviews the data release applications and advises the Administrator on approval or denial.

What kind of organizations can get information from the APCD?
Both public and private entities may receive APCD reports subject to review and advisement of the request by the DRRC. Organizations that have requested information from the APCD so far include university researchers, divisions of Colorado state government and private firms developing new pricing models for health care services.

What can APCD data be used for? Are there any restrictions on the purposes for which it may be used?
Data requests may only be used to inform projects or support programs that support the achievement of one or more of the categories of the Triple Aim for Colorado: better population health, better quality of care and patient experience, and lower cost of health care. Data cannot be used to directly market to individuals for market gain of an individual or organization. For example, a data request identifying all diabetic patients for purposes of target marketing a new diabetic drug does not meet the intended use criteria. Personal health information can never be shared publicly as a result of a research project or program.

Can an organization charge others for information it gets from the APCD?
Under an approved request, use of the released data is limited to the specific purpose as described in the original application. Further use of the data for a purpose not reflected in the original application would require a new request that fully complies with the privacy and security requirements of HIPAA.

Is there any circumstance in which a private company or individual could get personal, identifiable health information out of the APCD?
HIPAA allows the release of certain, limited data fields for very narrow purposes: public health activity, health care operations, and research activity. The DRRC will review every request for APCD data reports to ensure that no information is released that goes beyond HIPAA rules and the Administrator will deny any request for data or reports that would violate HIPAA or state law and rule.

Could a company get a report from the APCD identifying all the people in a given zip code who have a certain diagnosis or have been prescribed a certain drug?
There is no circumstance we can envision in which a company could obtain this data without first directly obtaining patient authorization to do so. The company would then have to meet all other data release requirements including showing how this information would improve health, care or lower costs. Similar to HIPAA laws that govern providers or payers, release of specific names of patients can only occur in the most unusual public health circumstances or under research protocols that under HIPAA laws require patient authorization or Institutional Review Board research approval.

What happens if an entity misuses APCD data or uses it for a purpose other than that for which the entity applied?
An approved applicant must sign and enter into a Data Use Agreement or contract with the APCD Administrator and agree to the following:

- Restrictions on data disclosure and prohibitions on re-release of the data.
- Prior approval from the APCD Administrator subject to DRRC guidelines is required to publicly release any reports based on the data. The APCD Administrator will carefully review all materials intended for publication or dissemination to determine whether the privacy rights of any individual would be violated by the release of the information.
- Violation of the terms of the Data Use Agreement constitutes a breach of contract and may:
  a. Require the immediate surrender and return of all APCD data.

b. Result in denial of future access to APCD data.
c. Lead to civil action by the Administrator for breach of contract.
d. Result in a complaint filed with the U. S. Department of Health & Human Services, Office for Civil Rights, as well as civil and criminal action and penalties.
e. State Attorneys General are also empowered under the HITECH Act to take civil action regarding certain HIPAA violations.

How is the APCD Administrator held accountable for the use of APCD data?
The APCD Administrator is required to provide HCPF with an annual report on or before April 1 of each year that includes:

1. Any policies established or revised pursuant to state and federal medical privacy laws, including HIPAA.
2. The number of requests for data and reports from the APCD, whether the request was by a state agency or private entity, the purpose of the project, a list of the requests for which the DRRC advised the Administrator that the release was consistent with rule and HIPAA, and a list of the requests not approved.
3. For each request approved, the Administrator must provide the HIPAA regulation pursuant to which the use or disclosure was approved, and whether a data use agreement or limited data set data use agreement was executed for the use or disclosure.
4. A description of any data breaches, actions taken to provide notifications, if applicable, and actions taken to prevent a recurrence.

How do you protect the information in the APCD?
The safety and privacy of personal information is a foundational principle of how the Colorado APCD is designed and operated. Not only is data encrypted and protected but personal information will never appear in any public APCD data output or report.

Data Security: When carriers submit files to the APCD, the datasets are always encrypted and sent over a secure connection to Treo Solutions, the APCD Data Manager. This connection is limited to a pre-determined list of users and IP addresses (internet connections) reserved for the carriers submitting the data. The servers holding APCD data are "hardened" to prevent downloading data to a laptop, USB drive, disc or other device. It is not possible to get remote access to the APCD (e.g., from a Treo employee's home computer). Further, Treo Solutions conducts quarterly "penetration" (hacker) testing of the APCD to detect potential areas of vulnerability.

Elimination of personal identifiers: As data are loaded into the warehouse, all personal information is automatically removed from the record and replaced with a separate, unique identification number that does not incorporate any personal information. Additionally, birth date is replaced with age category and zip codes are reduced to the first 3 digits (or 000 if from a zip code with fewer than 20,000 people).

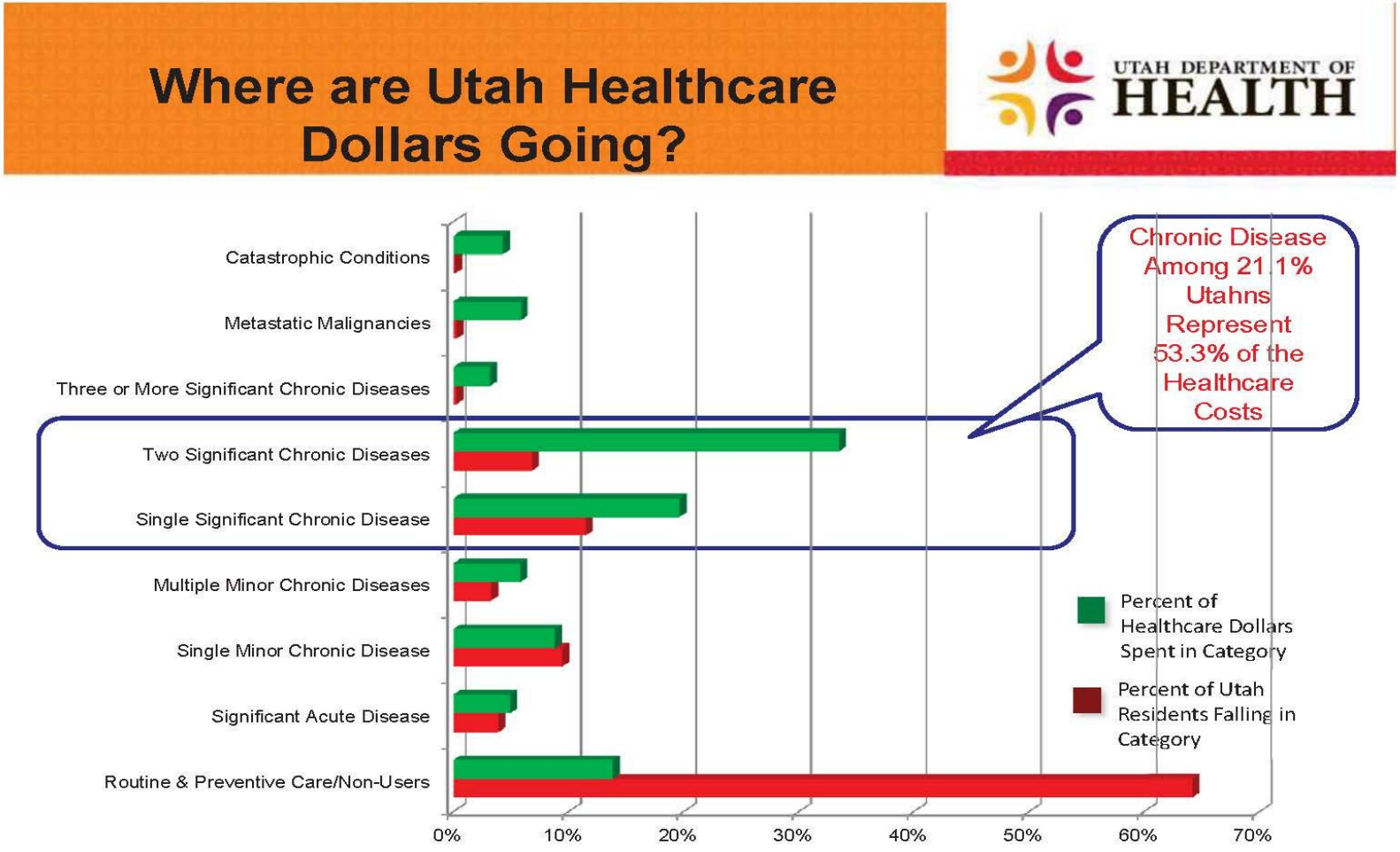
Controls on how the database is used for analysis and research: Simply stated: your personal information will never appear in any public APCD data output or report. All requests for APCD data must detail the purpose of the project, the methodology, the qualifications of the research entity and, by executing a data use agreement, comply with the requirements of HIPAA. The DRRC reviews the request and advises the Administrator whether release of the data is consistent with the statutory purpose of the APCD, contributes to efforts to improve health care for Colorado residents and complies with the requirements of HIPAA.

What would a hacker see if he got into the database?
Encrypted information as illustrated above. All information in the APCD is encrypted during transmission from the health plans and while it is "at rest" in the database. To mitigate encryption key compromise, each submitter is identified prior to submission by Internet protocol (IP) address. These IP addresses are unique, and transmission is only allowed from these sources. Additionally, each submitter is provided with a unique encryption key, which encrypts the data while in transit. Once the data is decrypted and processed, the source data at rest is encrypted using advanced encryption standard (AES 256 bit) and protected.

Could an employer or a law enforcement agency requisition information about an individual from the APCD?
Based on the APCD statute and HCPF rules, the APCD must adhere to federal privacy laws, specifically HIPAA, regarding data disclosures, just as your insurance company must do with respect to claims information. The APCD statute and rules provide no special protection from law enforcement, and there are HIPAA exceptions that, under some circumstances, allow for data disclosures (e.g., certain law enforcement purposes, certain judicial proceedings). Any data that was released under such circumstances would, however, require that HIPAA's privacy standards be met.

Appendix 8: APCD Reporting in Other States

Utah Department of Health
Percentage of health care dollars spent by disease category and population



New Hampshire Health Cost: Nhhealthcost.org
Consumer Facing Cost Estimator

Detailed estimates for Basic Office Visit, 50-65 yrs old

Procedure: Basic Office Visit, 50-65 yrs old
Insurance Plan: Anthem - NH, Preferred Provider Organization (PPO)
Within: 1000 miles of 0380
Deductible and Coinsurance Amount: $100.00 / 0%

Lead Provider Name	Estimate of What you Will Pay	Estimate of What Insurance Will Pay	Estimate of Combined Payments	Precision of the Cost Estimate	Typical Patient Complexity	Contact Info
MICHAEL MURPHY	$49	$0	$49	MEDIUM	LOW	603.624.6978
DARTMOUTH-HITCHCOCK (CONCORD)	$53	$0	$53	LOW	MEDIUM	DARTMOUTH-HITCHCOCK (CONCORD) 603.226.2200
MICHAEL ROMANOWSKY	$53	$0	$53	HIGH	MEDIUM	603.329.4046
MARK ARONSON	$54	$0	$54	LOW	LOW	603.527.2969
MT. WASHINGTON VALLEY HEALTHCARE (NORTH CONWAY)	$54	$0	$54	HIGH	MEDIUM	
SOUTHERN NH OBGYN	$54	$0	$54	HIGH	LOW	603.624.8491
LONDONDERRY FAMILY PRACTICE	$55	$0	$55	HIGH	VERY HIGH	LONDONDERRY FAMILY PRACTICE 603.537.1300

My Health Care Options, Massachusetts (http://hcqcc.hcf.state.ma.us/)
Consumer Facing Cost and Quality Comparisons3

Diagnostic classification: Pneumonia (APR-DRG 139)

Summarized Report | View Detailed Report | View Statewide Procedure Costs

Quality of Recommended Care
(more)

	Saint Vincent Hospital	UMass Memorial Medical Center - Memorial Campus
Quality Rating	★★★	★★
Statistical Significance	Above State Average Quality	Not Different from State Average Quality

Quality of Care - Mortality
(more)

	Saint Vincent Hospital	UMass Memorial Medical Center - Memorial Campus
Quality Rating	★★	★★
Statistical Significance	Not Different than U.S. National Rate	Not Different than U.S. National Rate

Quality of Care - Readmissions
(more)

	Saint Vincent Hospital	UMass Memorial Medical Center - Memorial Campus
Quality Rating	★	★★
Statistical Significance	Worse than U.S. National Rate	Not Different than U.S. National Rate

Cost of Care
(more)

	Saint Vincent Hospital	UMass Memorial Medical Center - Memorial Campus
Cost Rating	$$	$$
Statistical Significance	Not Different from Median State Cost	Not Different from Median State Cost