



CENTER FOR IMPROVING  
**VALUE** IN HEALTH CARE

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February 28, 2012

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

The Honorable Brandon Shaffer  
President, Colorado State Senate  
State Capitol  
200 E. Colfax  
Denver, CO 80203

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

Dear Governor Hickenlooper, President Shaffer and Speaker McNulty:

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 history of the creation of the APCD;
- Milestones achieved in 2011, including promulgation of rules for data submissions and the securing of sufficient funds to create the database;
- Planned activity for 2012, including data submission from health insurers and anticipated provision of initial reports;
- Privacy and security protections for the information in the APCD;
- Proposed reporting and analytics; and,
- Financial plan for sustaining the APCD.

The aggregated health insurance claims data in the APCD will illuminate, for the first time, statewide patterns of health care costs and utilization in Colorado and provide Coloradans with transparent information on the cost and quality of their health care. The 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 look forward to the opportunity to brief members of the Senate and House Health Committees March 1 regarding this report, and welcome the opportunity to answer any questions you may have.

For the Advisory Committee:

Handwritten signature of Lalit Bajaj in black ink, with the name 'BAJAJ' written in capital letters to the right of the signature.

Lalit Bajaj, MD  
Chair  
Associate Professor of Pediatrics  
Research Director  
The Children's Hospital

For the Administrator:

Handwritten signature of Philip B. Kalin in black ink, written in a cursive style.

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

cc: Senator John Morse, Majority Leader  
Senator Bill Cadman, Minority Leader  
Representative Amy Stephens, Majority Leader  
Representative Mark Ferrandino, Minority Leader  
Members, Senate Health & Human Services Committee  
Members, House Health & Environment Committee  
Lorez Meinhold, Policy Director, Office of the Governor  
Susan E. Birch, Executive Director, Dept. of Health Care Policy and Financing  
Henry Sobanet, Director, Office of State Planning and Budgeting  
Legislative Council Library (6 copies)  
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Colorado House of Representatives (1 copy)  
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HCPF Budget Library, HCPF Budget Division





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**VALUE** IN HEALTH CARE

# **Status of the Colorado All Payer Claims Database**

**Report to the Governor  
and the  
General Assembly  
from the**

**APCD ADVISORY COMMITTEE  
and the APCD ADMINISTRATOR  
March 1, 2012**

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

In 2011, the Colorado All Payer Claims Database (APCD)—a statewide repository of health claims information designed to facilitate analysis of Colorado health care costs and utilization—achieved all statutory and operational milestones required to begin full implementation:

- In late February 2011, the APCD Advisory Committee met the March 1, 2011 deadline to make its recommendations on the APCD to the Legislature and Governor.
- In late summer, the Department of Health Care Policy and Financing (HCPF) established the Administrative Rules that specify the process for claims data collection, including a data submission guide and a framework for reviewing applications for data release.
- The APCD administrator, the Center for Improving Value in Health Care (CIVHC) (appointed administrator by HCPF in 2010), secured sufficient funding to create the database.
- On November 22, 2011, the Executive Director of HCPF determined that sufficient funding was in place and notified the Reviser of Statutes to that effect.
- After completing a competitive procurement process, the Administrator contracted with a third-party vendor, Treo Solutions, to create the database.

Data submissions to the APCD will begin in late spring 2012, and we anticipate providing initial reports of population-based variations in health care costs and utilization in late 2012. This information will be available on a public-facing Web site. More detailed analysis of the aggregated data will be performed and made available as the database grows with the addition of Medicare and additional segments of the commercial market through 2013.

By the end of calendar 2013, CIVHC expects to be able to generate analyses from the APCD based on the claims experience of nearly two-thirds of Colorado's residents, approximately 90 percent of its insured population.

Protecting individuals' privacy and the security of all information in the APCD is of paramount importance to CIVHC. A key criterion in the selection of Treo Solutions to serve as the database vendor was its expertise in managing and protecting sensitive health care claims information, and 10-year track record of doing so without a breach.

The APCD must adhere to all provisions of the federal Health Insurance Portability and Accountability Act (HIPAA), which sets 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 security features include:

- 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 use a secure Web site to submit files; and

emphasizing privacy and security at every point in the data transfer, storage and analysis processes.

- All information submitted to the APCD is encrypted and de-identified through automatic computer programs, not by individuals.
- Names, Social Security numbers, and addresses are stripped and replaced with unique identifiers before reports are created.
- Reports and de-identified datasets replace date of birth with an age range and reduce zip codes to three digits.

The APCD is not a centralized electronic medical record or an application portal by which one may see an individual's personal health information. Reports of any data are aggregated to sufficient size to prevent someone from taking unidentified information and inferring the identity based on diagnosis or treatment type. This protection, combined with the additional de-identification strategies described above, is of particular value for Coloradans living in small communities.

The public APCD portal will provide broad snapshots about aggregate utilization and costs of health care services. The APCD can also generate more granular reports and analyses; such reports will be made available to qualified entities for specified purposes according to parameters and protocols that will be developed by a Data Release and Review Committee, to be established in 2012. In 2013, the APCD expects to begin providing information about providers' reported cost of a procedure, quality of care provided by different providers and employer-focused information and analysis to support value-based purchasing decisions. In 2014, the APCD will be able to provide in-depth reporting based on multiple years of data to support more complex and timely analysis of utilization, spending and quality.

Many individuals and organizations in the Colorado health care community have participated in this process to date and will continue to provide important guidance in the future. Leading the effort is the broadly representative, statutorily-created APCD Advisory Committee that initially met monthly and is now meeting quarterly to review the progress of development. Members also participated in subcommittee meetings to consider specific aspects of the rules and operations planning. Our process also benefited from collaborative, thoughtful feedback from the payer community including Colorado-based and national health plans that was ably coordinated by the Colorado Association of Health Plans. CIVHC expects to continue working with HCPF, the Division of Insurance and the Attorney General's Office in a collaborative and thoughtful approach to the evolution of the APCD.



## 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

The rising cost of health care and health insurance is a well-documented problem, both in our nation as a whole and within our own state. For example:

- Health care costs have wiped out Americans' real income gains over the past decade. Between 1999 and 2009, average monthly income for a family of four in this country rose by approximately 30 percent, or about \$1,910. Yet more than half of that—\$945—was eaten up by health care taxes, premiums and expenses. (“A Decade of Health Care Cost Growth has Wiped Out Real Income Gains for an Average US Family,” *Health Affairs*, Sept. 2011)
- The average annual employee contribution to health insurance coverage more than tripled between 2001 and 2010; the average contribution by employers more than doubled. (“Employer Health Benefits: 2011 Summary of Findings,” Kaiser Family Foundation and Health Research & Educational Trust, September, 2010)
- Colorado small business' health insurance premiums for 2012 coverage rose by 9.4 percent over 2011. While this was the first time in 11 years the decrease was less than 10 percent, it was still greater than the national average of 9 percent. (Lockton Companies LLC, 2012 Colorado Employer Benefits Survey Report, released Oct, 28, 2011)
- More Colorado residents than ever before have first-hand knowledge of higher health care costs as the proportion of Colorado residents enrolled in health savings account/high deductible health plans grew to 11% in 2011, the third highest state share in the nation. (“January 2011 Census Shows 11.4 Million People Covered by Health Savings Account/High-Deductible Health Plans (HSA/HDHPs),” AHIP Research Institute, June 2011)

We know the broad contours of the problem—but have little deeper insight into what, precisely, is driving these increases. Without that knowledge, we lack the tools to address the cost drivers and bend the health care cost curve.

That is where an All Payer Claims Database (APCD) comes in. An APCD provides a window into health care costs and utilization that no other dataset can match. 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.

The data sources currently used to inform health care analysis and policy-making (e.g., the national Medical Expenditure Panel Survey, hospital discharge information, Medicaid and Medicare, among others) are limited either by the population they include or the site 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.

Currently, nine states have functioning APCDs; four states, including Colorado, are in the process of implementing APCDs.

## **B. Uses of an APCD**

APCDs can support decision-making by individual consumers (through public Web portals) 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, etc.) by providing facility-by-facility 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.

## **C. 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:

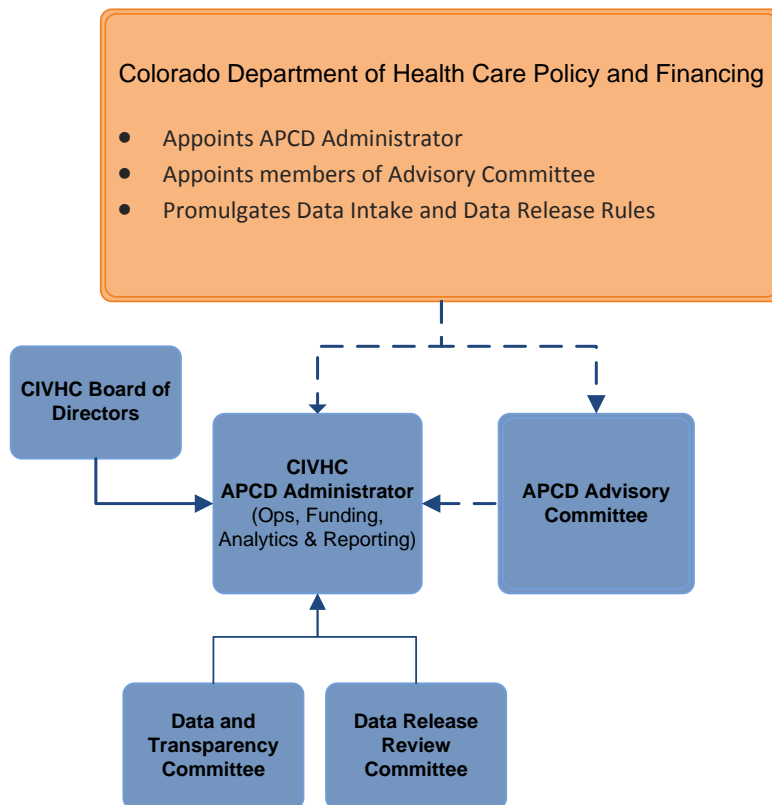
... make recommendations regarding the creation of the framework and implementation plan for a Colorado all-payer claims database for the purpose of facilitating the reporting of health care and health quality data that results in transparent and public reporting of safety, quality, cost, and efficiency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

**D. Oversight of the APCD**

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

Figure 1



- **HCPF.** HCPF provides the legal and regulatory framework for the operation of the APCD. Under the statute, HCPF is responsible for determining whether sufficient funding existed to create the APCD, and issuing rules describing what data may be collected and how reports may be released. The statute required both public and private payers submit data to the APCD.
- **APCD Advisory Committee.** CRS 25.5-1-204 specifies a large 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 continues to meet quarterly to provide guidance during the implementation phase.
- **Administrator.** The Executive Director of HCPF named the Center for Improving Value in Health Care (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 APCD Administrator, CIVHC is responsible for ensuring that the APCD collects and reports accurate information. The Administrator also oversees the operations of the contracted data management firm (Treo Solutions) as well as report development and production, stakeholder engagement and coordination with state health care policy efforts around payment reform, quality improvement, the Colorado Health Benefits Exchange and other issues.

- **CIVHC Board of Directors.** All of CIVHC's activities, including its role as APCD Administrator, are overseen by its Board of Directors. CIVHC's board comprises stakeholders from across the health care continuum: clinicians, hospitals, consumers, employers, behavioral health providers, health insurers, policy experts and public health leaders. The Board has the fiduciary responsibility to fulfill all the roles of the APCD Administrator, including compliance with data protection and security standards. Since CIVHC's appointment as APCD Administrator, the Board has provided valuable input on all aspects of the APCD, including direction about the focus, structure and operations of the APCD. In its capacity as fiduciary, the Board reviews the APCD's financial status and expenditures and overall performance.
- **Data and Transparency Workgroup.** While not specified in the statute, this existing CIVHC workgroup provides important guidance from providers, researchers, policy makers and payers about how to measure progress on Colorado's health care reform

agenda. In 2012, this group will review options for and help prioritize reports, including data for policymakers, researchers, businesses and other audiences.

- **Data Release Review Committee (DRRC).** The data submission rules promulgated by HCPF in 2011 (10 CCR 2505-1.200.5) requires the establishment of a committee to develop criteria governing the purposes for which APCD data may be used and the types of organizations that may have access to it. The rule requires that DRRC membership include one member each from a hospital organization, a physician organization, a payer organization and a non-physician provider organization. The DRRC will evaluate whether an applicant is qualified to safely and accurately analyze the data and whether the purpose of the project is intended to improve health care or public health outcomes for Coloradans.

The DRRC process is modeled on CMS and other states' procedures that allow carefully scrutinized applicants to use health care data for research, analysis and policy studies. An organization interested in obtaining access to a HIPPA-defined Limited Data Set will be required to complete an application that thoroughly documents the organization's qualifications, prior experience and expertise in managing a project under HIPAA rules. The application will require a description of the proposed project, the names and qualifications of individuals who will work on the project, the organization's experience with similar projects, and how the results of the analysis will be distributed. Applicants will also be required to submit a copy of the analysis or report prior to public release so that any provider comparisons can be reviewed for accuracy. Applicants must agree to the terms and conditions of a data use agreement that is modeled on those used by CMS when researchers are granted access to Medicare information.

## II. Activity in 2011 and Next Steps in 2012

### A. Statutory milestones

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

- **Administrator:** Legal authority for APCD resides with HCPF, which named CIVHC as the Administrator in August 2010.
- **APCD Advisory Committee:** Beginning in September 2010, CIVHC convened this statutorily-required statewide stakeholder group to provide specific guidance on the APCD framework and approach. This committee provided its first report to the Governor and General Assembly in February 2011 in advance of the March 1, 2011 statutory deadline. The report provided a detailed description of the framework of the APCD, privacy and security recommendations, key data elements and a reporting approach based on a three-tiered reporting framework that will reflect deeper levels of detail as the database matures over several years. The Advisory Committee continues to meet quarterly under the leadership of Lalit Bajaj, MD.
- **Promulgation of Rules:** Beginning in February 2011, CIVHC led a process of weekly meetings with health plans and other stakeholders to create detailed specifications and timelines for data submission. Weekly meetings with health plans continued through April to refine the data submission guide that described the specific information these health plans would be required to submit to the APCD. Subsequently, health plans continued to provide input that was incorporated into the final version of the data submission guide that accompanied the rules. This input was incorporated into 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, the Division of Insurance and the Colorado Attorney General's office, paved the way for the final adoption of APCD rules by HCPF Executive Director Sue Birch on August 24, 2011 (see 10 CCR 2505-1.200.5). This action was needed to create the APCD no later than January 1, 2012.
- **Funding and Creation of the Database:** By statute, the HCPF Executive Director is required to notify the Reviser of Statutes when sufficient funding is 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, CIVHC has secured grants from Colorado foundations. CIVHC gratefully acknowledges the

Colorado Trust and the Colorado Health Foundation for their generous support during the initial development and now through the full implementation period.

## B. Advice and Input from the Stakeholder Community

Throughout 2011, CIVHC sought and received critically important input from diverse representatives of the Colorado provider, policy and health care purchaser communities about the uses, structure and operation of the APCD. Contributors participated in a wide range of venues and formats, formal and informal, including the following:

**APCD Advisory Committee** and two time-limited subcommittees, Data Structures and Privacy/Administration, advised on specific elements of the rules governing the APCD.

**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.

**Health providers**, including the Colorado Medical Society, the Colorado Hospital Association and others, provided thoughtful feedback on the potential uses of APCD products.

Colorado's **Health Information Exchanges, CORHIO and QHN**, are valued members of the CIVHC Board of Directors, the APCD Advisory Committee, the APCD Dataset Structures Subcommittee and the APCD Privacy Subcommittee.

**Consumer input** is provided via members of the APCD Advisory Committee, the Data and Transparency Committee, and through public comment. Additional consumer feedback will be obtained during the development of a consumer-facing interactive website.

In 2012, 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.

## C. Data Collection and Warehouse Vendor

The APCD Advisory Committee, with input from its subcommittees and local and national experts, developed warehousing, privacy/security and analytic/reporting requirements that are consistent with the intent of the statute. The APCD Administrator began the process of identifying a data management vendor with these capabilities through a preliminary Request for Information in early 2011 and a competitive procurement process in the fall of 2011. Key requirements included:

- Demonstrated expertise in privacy and security.
- Strong technical capabilities and relevant experience.

- The competitive cost of the proposed technology solution.
- The opportunity for the Colorado APCD to maintain ownership of intellectual capital.
- Vision for an evolving approach to developing reports that are consistent with the scope of the language in the APCD statute.

The competitive procurement process resulted in the selection of Treo Solutions as the vendor which best met the criteria outlined above.

Treo Solutions is a security-focused health care data management and analytics company. Its clients include:

- Twenty-six commercial payers
- Three state Medicaid programs
- Over 50 hospital systems
- Two nationally recognized medical home projects

Collectively, these entities represent more than 38 million people. In its 10 years of operation of managing this large volume of data and serving these many organizations around the country, Treo Solutions has never experienced a security breach.

Treo brings extensive claims warehouse, analytic and reporting expertise, as well as comprehensive experience in ensuring the privacy and security of health information. The company has worked extensively with payers and providers to develop data systems and tools that support in-depth analysis of cost and quality. Treo Solutions also holds a contract with the State of Colorado to operate the State Data Analysis Center (SDAC), and is responsible for data warehouse activities for Colorado's Medicaid program. (See Appendix 4 for background information on Treo's experience and client base.)

#### **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 initial data submission process. The APCD project team conducts monthly teleconference briefings to update all submitters and provide an open question and answer period. Informational documents are posted on the CIVHC Web site.

The data submission schedule is as follows:

- March 31, 2012: Test data submitted
- June 30, 2012: Historic claims data from January 1, 2009 through December 31, 2011
- August 15, 2012: Claims data from January 1, 2012 through June 30, 2012
- September 15, 2012: First monthly dataset is due; data submissions will flow from the health plans on a monthly basis thereafter.



By 2014, we anticipate collecting claims data for approximately 90 percent of the Colorado insured population, or 3.8 million of the total 4.2 million insured in the state. Figure 2 shows anticipated claims data submissions into the APCD.

It is important to note that the APCD will not incorporate “all” claims when it first becomes operational in 2012. Certain types of claims will flow into the APCD later, for a variety of reasons:

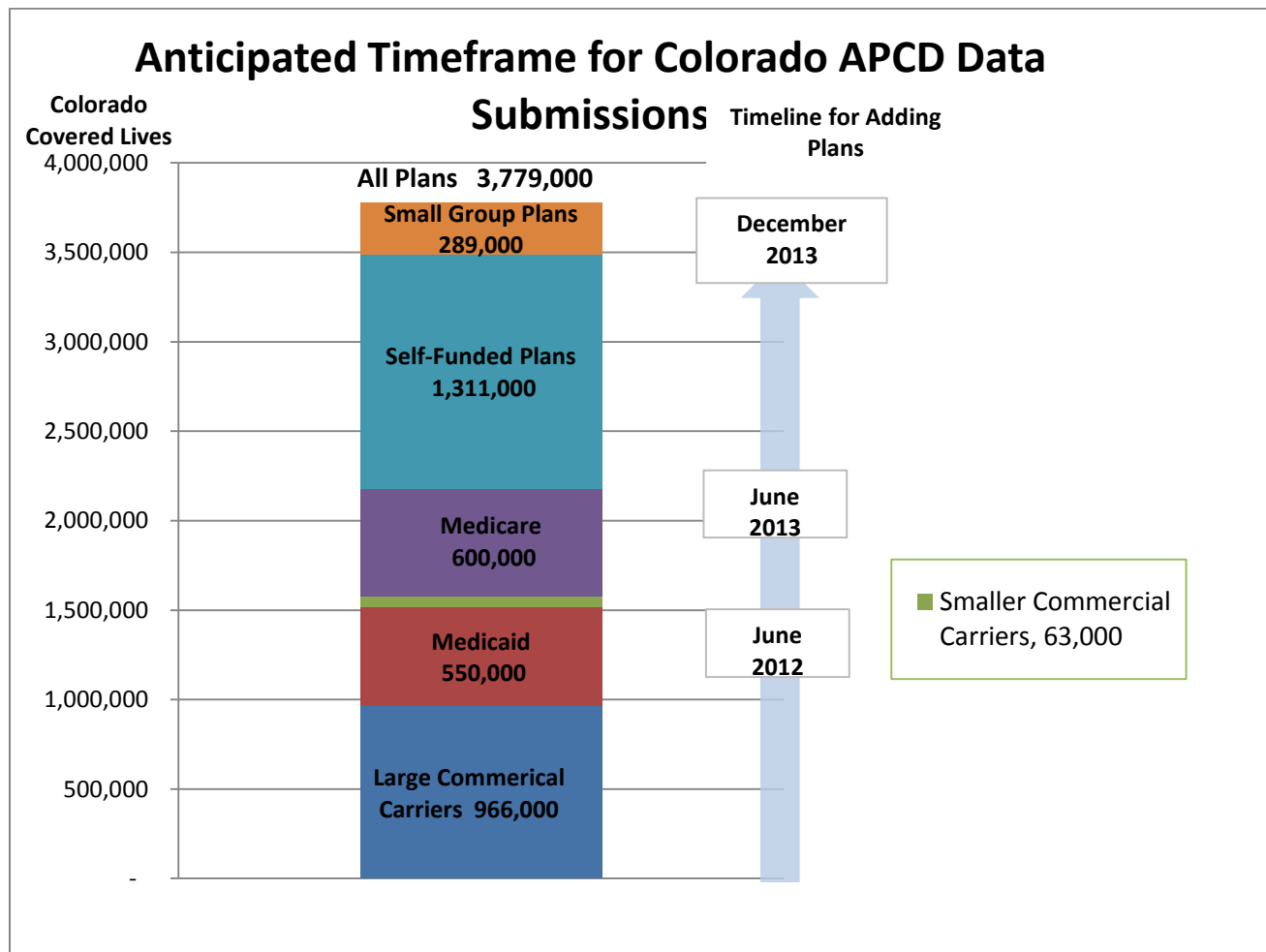
**Small group claims:** Current statute places limits on how mental health claims data from small group plans (i.e., insurance provided to businesses with 50 or fewer employees) can be shared. The specific uses do not include submission to an APCD. The practical impact of this is that health plans will not submit any 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 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. CIVHC 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 would not oppose the change. We anticipate being able to secure this data in 2013.

**Self-insured data:** Health plans and other third-party administrators do not own the data for the self-funded plans they administer, and thus face legal challenges to sharing it. However, 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, CIVHC is working with the employer community to solicit voluntary reporting. While we expect that the majority of large self-funded employers will be amenable to this, we believe that we could compel reporting if necessary without violating ERISA pre-emption of state regulation for self-funded plans, since data submission is unlikely to constitute regulation of the plans.

**Data from non-fee-for-service plans:** Plans such as Kaiser Foundation Health Plan of Colorado and Denver Health operate a 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 CIVHC 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 year. The purpose of the waiver is to allow plans to improve compliance over time. CIVHC expects to receive waiver requests from Kaiser and Denver Health for payment-related data elements. The request must include a description of the health plan’s proposed strategy and timeline for coming into compliance with the APCD rules.

**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 light of a recent increase in requests, CMS is currently considering how APCDs may access Medicare data. Past approvals for Medicare data for APCDs have taken two routes: Maine obtained the data through a state agency request to CMS; in contrast, Massachusetts obtained the data from CMS’s research data entity. The Colorado APCD project team is exploring available options, with the expectation that Medicare data will be incorporated into the APCD in mid-2013.

Figure 2



Note: Bar heights represent the number of individual covered lives.

### E. Privacy and Security

Maintaining the strongest possible protections for security and privacy of personal 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 Rules and requirements. All aspects of APCD data collection, 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 use 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 Collection and Warehouse Vendor, has never experienced a security breach in its 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 will never allow access to the files in the original form as submitted by health plans. Researchers and others will be able to use different files that have been transformed such that any protected health information appears in HIPAA-compliant formats. Reports available to the public will be similar to those in the “Dartmouth Atlas”

([http://www.dartmouthatlas.org/downloads/reports/PA\\_Spending\\_Report\\_0611.pdf](http://www.dartmouthatlas.org/downloads/reports/PA_Spending_Report_0611.pdf)): high level, aggregated information explaining how health care services are used for a particular population group.

Treo Solutions, 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 Treo operations, policies and procedures. The Colorado APCD also requires a third party security operations audit prior to data intake. Treo uses advanced encryption, biometrics and intrusion prevention and detection to secure its facilities.

**Data Security:** When health plans submit files to the APCD, the datasets will always be encrypted and sent over a secure connection (Secure File Transfer Protocol or SFTP) to the APCD database, currently operated by Treo Solutions. SFTP access will be limited to a pre-determined list of users and IP addresses (internet connections) reserved for the health plans submitting their data. When Treo Solutions receives a file, security protocols run automatically in a secure, access-restricted environment to confirm that the files contain the expected information before they are cleared for storage in the secured data warehouse.

The APCD Data Warehouse will be housed in a highly secure, state of the art 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.

- Equipment has been installed to eliminate commonly exploited vulnerabilities, including disabling USB and wireless connections.

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 for the project. Access is based on specific roles and security clearance.
- Electronic access is carefully monitored 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. Encrypted data can only be decrypted by the party receiving the data. 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	→→→→→→→→→→	5lZB3CeWebVUYm2u9b1+
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 will be removed and replaced with a unique identification number when data analysis occurs. Depending upon the type of data requested, birth date will be replaced with age or age range. Zip codes will be 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:** As noted earlier in this report, 10 CCR 2505-1.200.5 requires the APCD Administrator to establish a Data Release Review Committee to advise it regarding applications for data release. As established in HIPAA policies and practice, the APCD will provide the minimum data possible that will accomplish the research goal. An entity interested in obtaining data from the APCD will be asked to provide information about the purpose of the project, 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 includes justification for each data element that is needed for the project. The Committee will review the request and advise CIVHC 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 Data Release Review Committee will be appointed by the end of Q2 2012.

Two types of data, as defined by HIPAA, will be available to qualified applicants:

- “Public Use” data is completely de-identified, which means that no HIPAA-defined protected data will be provided at the individual or claims line level. 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.”
- “Limited Data Sets” under HIPAA rules may contain certain data elements that are excluded from de-identified files. Limited Data Sets may not include name, street address, or SSN. 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, the Colorado APCD will collect only eight of the HIPAA-protected health data elements. The Public Use 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 Public Use nor the Limited Data Sets will ever include a patient’s name, street address, or Social Security number.

Table 1

**How the Colorado APCD Public Use and Limited Data Set Data Treat The 18 HIPAA Protected Data Elements**

Data Element	Public Use Data	Limited Data
1. Names	Not available	Not available
2. All geographical identifiers smaller than a state	First 3 digits of zip code <sup>1</sup>	5 digits
3. Dates directly related to an individual <sup>2</sup>	MMYY	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

<sup>1</sup> 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 data.

<sup>2</sup> The public use data will contain age ranges, for example, 40-45 years of age. Limited use data may include month and year of birth or age on date of service.

Data Element	Public Use Data	Limited Data
10. Account numbers	Not available	Not available
11. Certificate/license numbers <sup>3</sup>	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 complex and nuanced reports. In the fall of 2012, the APCD expects to issue "Tier 1" reports and data that will provide population-based snapshots of health care utilization and costs. These reports will illustrate the variations in major categories of disease by geography and age groups, and will be available on a public Web site. Potential Tier 1 reports include:

- Utilization of health care services per 1,000 residents (e.g. imaging, emergency department, inpatient hospital, etc.).
- Days spent in hospital and associated expenditures during the last six months of life.
- Percentage change in per capita expenditures for health services.
- 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).
- Proportion of inpatient hospital admissions identified above that result in re-admissions within 30 days.

<sup>3</sup> Member certificate/license numbers are not collected. Physicians' license numbers are collected.

- Expenditures associated with hospital re-admissions within 30 days.
- Per capita expenditures associated with emergency department use.

In 2013, the APCD will provide "Tier 2" quality and value data of interest to consumers, providers, purchasers and researchers, such as:

Providers' reported cost of a procedure (nhhealthcost.org).

Quality of care provided by different providers (myhealthcareoptions.gov).

Employer-focused information and analysis to support value-based purchasing decisions. (

<http://www.wbgh.org/pressrelease.cfm?ID=155>

Examples of such reports available from APCDs in other states may be found in Appendix 5.

In 2014, the third year of operation, the APCD will be able to deliver advanced analytics ("Tier 3" reports) 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 populations. In addition, the analytics are expected to align with disease registries and vital statistics, and support analysis to 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's web portal and a web application.
- **Custom reports** through a formal data request and release process.
- **Datasets** that allow specific analysis.
- **Memberships and subscriptions** that provide 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 standards.

## G. Financial Plan for Sustaining Operations

As noted earlier, no state funds were allocated to support Colorado's APCD. CIVHC, as the APCD Administrator, was therefore required to raise the necessary funds to build and sustain the database. CRS 25.5-1-204 requires that, prior to January 1, 2012, the HCPF Executive Director must determine that sufficient funds are available to create the APCD. This step was completed in November 2011 (see Appendix 6 for the formal notification to the Reviser of Statutes).

Through 2011, CIVHC received funding from the following sources to create the APCD:

The Colorado Trust (\$178,000)

The Colorado Health Foundation (\$935,840)

Operations of the APCD will initially be funded through additional grants. In the fall of 2011, CIVHC submitted a joint grant request to the Colorado Trust and The Colorado Health Foundation for funding through 2015. This funding will support the process of bringing health plans on board and creating the infrastructure needed to develop custom reports and analytic tools. The Colorado Trust approved its portion of the funding in December, 2011 and The Colorado Health Foundation will make its decision in March, 2012. Approval of both foundations is required and anticipated. Going forward, revenue derived from providing customized reports and data sets is expected to generate sufficient income to sustain the ongoing operation of the APCD.



## Appendix 1: Statute Enacting 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: Members of the APCD Advisory Committee, February 2012

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 (Chair)	Associate Professor of Pediatrics, Physician, University of Colorado/The Children's Hospital ; MPH	Academia with experience in health care data and cost efficiency research
Vinita Biddle*	Benefits Strategist, Department of Personnel and Administration	Department of Personnel and Administration
<b>Vacant</b>		Non-profit health insurers
Duane Choate	President/Chief Executive Officer, Oncure Medical Corp	Large employers that purchase group health insurance for employees
Jo Donlin*	Director of External Affairs,	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
Sherri Hammond*	Chief Data Officer, Governor's Office of Information Technology	Governor's Office of Information Technology
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*	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
<b>Vacant</b>		Small employers that purchase group health insurance for employees
Bob Semro	Policy Associate, Colorado Consumer Health Initiative	Consumer health care advocates
Carolyn Shepherd	Physician, Clinical 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	Program Integrity Manager, Delta Dental of Colorado,	Dental insurers

\*Ex Officio



## Appendix 3: CIVHC Overview

### Improving Value in Colorado's Health Care System

CENTER FOR IMPROVING  
**VALUE** IN HEALTH CARE

Colorado is at a health care crossroad. We're spending more for our medical care and getting less in return. It's a path we can't sustain. The time has come to make fundamental changes to ensure we get the best value for each dollar we spend on health care – now and for future generations.

The Center for Improving Value in Health Care (CIVHC) is central to bringing about these changes. We're convening diverse groups of stakeholders across the state and pooling their perspectives and talents to create a stronger, more efficient health care system. Our goals are bold: to find new ways to improve the quality of medical care, contain costs, curb rising insurance premiums and create a strong, sustainable health care system. And because you can't manage what you don't measure, we're developing an innovative way to gather and report data on how well we're meeting our goals.

#### What is CIVHC?

Colorado comprises a diverse statewide constituency of health care consumers, providers, health plans, businesses and policy makers. Too often, these stakeholders operate in separate circles. As a nonpartisan and independent organization, CIVHC provides synergy and leadership to pull these key players together. Our mission is to foster creative initiatives for containing costs, improving the health and patient experience of Coloradans, and developing and sharing the vital data we need to ensure we receive the best health care value possible.

CIVHC was founded in 2008 following release of the bipartisan, landmark report by the Colorado Blue Ribbon Commission for Health Care Reform. We're using the groundwork laid in that report as a blueprint for reforming Colorado's health care system.

#### What is CIVHC's Mission?

We call our mission "Triple Aim + I," and it's based on four principles:

- Improving the health of Colorado's population.
- Enhancing patients' health care experience, including quality, access and reliability.
- Controlling the per-capita cost of care.
- Using data and analytics to support improvements to the health care market.

CIVHC can't achieve its mission in the current fragmented health care system. So we're focusing on transforming that system by encouraging integrated approaches to delivery and paying for health care that promote coordination and reward outcomes, not merely volume. Most important: To meet our ambitious Triple Aim + I mission, these changes will be made hand-in-hand, without sacrificing gains in one area at the expense of another. After all, we cannot improve value if we improve a Coloradan's health without also controlling the costs of delivering health care.

#### CIVHC's Key Initiatives

Our vision for achieving Triple Aim by 2018 is sweeping:

Health care in Colorado will be provided largely in integrated systems and networks –  
paid for through global payments –  
with patients, providers and the public health system working together as full partners.

To achieve this ambitious goal, CIVHC is undertaking several inter-related initiatives.

***Transform Colorado's health care payment system***

Because both people and systems react to incentives, CIVHC believes that health care delivery redesign begins with payment changes. Accordingly, the path toward our 2018 goal begins with building upon the many care coordination approaches already underway in Colorado. CIVHC is working with payers and providers to expand the use of patient-centered medical homes and create new health neighborhoods of primary care providers and specialists. But those strategies alone won't get us far enough. So CIVHC, in collaboration with stakeholders from across the spectrum, is crafting bundled payment strategies for a list of surgical procedures and chronic conditions. Bundling aligns incentives across providers to foster greater coordination and control costs. We aim to begin implementing bundled payments in 2012.

***Improve how care is delivered in Colorado***

In order to achieve our 2018 goal of delivering a high percentage of Coloradan's care in integrated systems and networks, each participant in our health care system must collaborate in new and more effective ways. CIVHC is convening stakeholders from across the state and fostering new initiatives that will improve the coordination of care in Colorado.

As part of our mission, CIVHC is:

***Supporting efforts to improve care transitions to ensure better coordination and continuity of care.*** CIVHC is convening health care providers and consumers to locate where hospital readmissions and emergency room utilization rates are highest, identify best practices in communities, standardizing metrics to evaluate efforts, and exploring payment methodologies that will incentivize providers to improve care transitions.

***Coordinating stakeholder initiatives to increase access to quality palliative care.*** CIVHC's task force is overseeing a study to measure the impact of palliative care programs on improving quality of care and reducing costs, and examining strategies to expand quality, accessible palliative care programs across the state.

All these strategies create a "system of care" approach that will lead us toward better integration of both payment and delivery.

To learn more about how CIVHC is leading the way in improving the quality and value of Colorado's health care system, visit us at [www.civhc.org](http://www.civhc.org).

CIVHC | Center for Improving Value in Health Care  
950 S. Cherry St., Suite 1515  
Denver, CO 80246  
(720) 583-2095

## Appendix 4: Treo Solutions, Inc. Overview

Treo Solutions – The Healthcare Transformation Company – is based in Troy, NY, with offices in Kansas City and Colorado. Since 2002, Treo has been working with payers and providers in the design, execution, and management of payment programs and the analytics that support population-based models of care.

Treo Solutions helps dozens of healthcare delivery systems and payers across the country to improve efficiencies, design strategies for population management, and develop systems of accountable care. For example, Treo has provided data warehouse and analytic services for the New York State Department of Health for the past six years. The company has been a foundational resource to New York in support of the transformation of its Medicaid payment methodologies. In 2011, Treo was selected by Colorado’s Department of Health Care Policy and Financing to provide data analytics and consulting for Colorado’s statewide Medicaid accountable care initiative. Treo is also a strategic payment transformation partner for health plans of all types—large Blue Cross Blue Shield plans, smaller regional plans, and commercial and government payers. Treo’s expertise includes all lines of business – commercial, Medicaid, and Medicare. Our depth of experience with state Medicaid programs in New York, North Carolina, and Colorado is unparalleled.

Over its 10-year history, especially within the past 18 months Treo has assisted numerous clients, such as integrated delivery systems and Pioneer ACOs, to develop accountable care programs. This work has included the development of population- and value-based purchasing contracts as well as the supporting analytics for those agreements. Treo’s government and commercial payer clients represent more than 38 million covered lives, providing the benchmark data used for comparative analyses.

As health plan and provider executives begin the process of developing alliances to create accountable care or total cost-of-care programs, they must make a number of fundamental decisions that will likely impact the success of the endeavor. The process involves a series of choices, assumptions, and (in some cases) hope that the decisions are right; Treo offers the analytical platform that supports decision making. Treo takes hope out of the planning process.

Answering fundamental questions like the ones below requires clear, transparent access to claims data from multiple parties.

- Which providers should I target as potential accountable care partners?
- What criteria should I use to assess providers?
- What models should I use as a starting point?
- What factors are most important to consider as I balance the needs of providers, members, employers, and the plan?
- What is the impact of current and planned regulatory changes, such as health information exchanges and medical loss ratios?



- How can I effectively realign payment with the right incentives to achieve the right outcomes?
- How can I manage the new flow of information required between the respective parties?

### **Highlights of Treo Experience**

Some key highlights of Treo Solutions' experience and engagements include:

**New York State:** Treo Solutions has partnered with the New York State Department of Health (NYSDOH) on its Medicaid payment transformation for the past six years. During this period, NYS Medicaid has engaged in comprehensive reform of the inpatient and outpatient payment systems, resulting in a nearly \$600 million shift from hospital inpatient rates to outpatient rates for hospital clinics, community clinics, and physicians. Today, Treo is exploring accountable care/total cost-of-care program options with NYSDOH. Treo Solutions' analytics provide overall program performance for the more than 300,000 inpatient admissions and 5.5 million outpatient visits for the NY Medicaid Fee-For-Service population across approximately 200 facilities.

**Northeast Metro Area Academic Medical Center:** A large academic medical center, now a Pioneer ACO, engaged Treo Solutions to help build a county-wide accountable healthcare network. Treo is employing its Platform for Accountable Care to help the medical center move successfully along its journey to accountable care. A population risk assessment to help gauge the burden of illness for county residents; a readmission risk model that is used at the point-of-admission to prioritize the readmission risk of all patients admitted daily; and analytical tools and dashboards that enable the Accountable Care Network to improve care management and assume financial accountability for their most at-risk patient populations are being developed by Treo Solutions.

**Central US Metropolitan Health Plan:** Treo is a partner with a metropolitan health plan in conducting assessments of potential accountable care partners (large integrated delivery systems consisting of multiple hospitals, ambulatory care centers and physician practices). Treo developed the rules around potential shared savings pools for providers that achieve best practice standards for Potentially Preventable Events. Treo has provided the framework for and actively participated in health plan/hospital CEO level discussions regarding the goals, objectives, and measures required for accountable care models. With the health plan, Treo has created the payment model for the initial pilot of medical home practices, and has developed sustainable and manageable payment model for rollout to 50 practices and 400 physicians.

**North Carolina:** Treo provides the data, analysis, performance measurement, and ad hoc analytics needed to support a statewide Medicaid patient-centered medical home model (PCMH) for 1.1 million members. Through in-depth analyses of claims data, Treo provides cost and quality performance measures of medical home members compared to non-PCMH

members. Treo is also leading discussions regarding payment realignment methodologies with executives and physicians from state agencies, hospitals, the hospital association, and health plans.

**Colorado:** As the Statewide Data Analytics Contractor for Colorado's Accountable Care Collaborative, Treo is developing the data model, analytics, reporting methodologies, performance measures, attribution models, shared savings targets, and strategic direction on payment alignment for the state Medicaid program.

**Multistate Commercial Health Plan:** Treo Solutions developed inpatient and outpatient facility payment transformation program designed to reduce payment variation and realign payment with facility costs and quality performance. Treo developed the weights and rates related to payment to support strategic plan initiatives. Treo developed a methodology for incorporating performance on Potentially Preventable Readmissions into future rate adjustments. One key element of this work has been modeling a medical home payment model to support improved management of chronically ill members. In addition, Treo conducted Accountable Care Feasibility Assessments of several major health systems.

**Upper Midwest Health Plan:** In work with a health plan in the Upper Midwest, Treo has developed an accountable care model for statewide implementation, incorporating a total cost of care approach for all network providers, including urban, suburban and rural hospitals, as well as physician practices. This program will include implementation of Treo Dashboards and reports for all network members, with the goal of establishing Treo's total cost of care approach as the basis for all future payment methodologies. In addition, Treo has conducted accountable care feasibility studies for the largest hospitals in this region.

## Appendix 5: Notification of Sufficient Funding to Create the APCD



### COLORADO DEPARTMENT OF HEALTH CARE POLICY & FINANCING

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John W. Nickerlooper, Governor • Susan E. Birch MBA, BSN, RN, Executive Director

November 22, 2011

Ms. Jennifer G. Gilroy  
 Reviser of Statutes  
 Colorado Office of Legislative Legal Services  
[Jennifer.gilroy@state.co.us](mailto:Jennifer.gilroy@state.co.us)

**Re: Notification Pursuant to 25.5-1-204(10) CRS 2010**

Dear Ms. Gilroy:

In my capacity as Executive Director of the Colorado Department of Health Care Policy & Financing, I am providing the following notification pursuant to 25.5-1-204(10) CRS 2010:

Sufficient funding has been received through gifts, grants and donations to create the All Payer Claims Database.

Sincerely,

Susan E. Birch MBA, BSN, RN  
 Executive Director

## Appendix 6: APCD Reporting in Other States

### Public Facing Reports Using Aggregate Data:

The Dartmouth Atlas

Jonathan S. Skinner, PhD, Daniel J. Gottlieb, MS, Donald Carmichael, MDiv

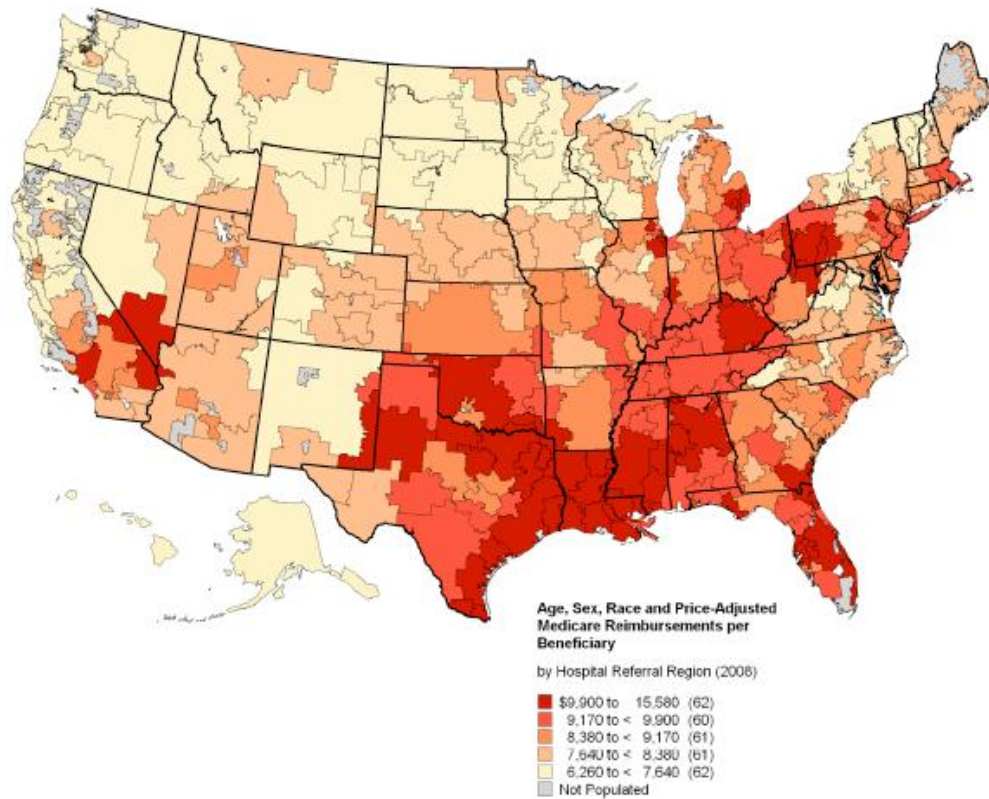
*Editor:* Kristen K. Bronner, MA, *A New Series of Medicare Expenditure*

*Measures by Hospital Referral Region:*

2003-2008, June 21, 2011, accessed at

[http://www.dartmouthatlas.org/downloads/reports/PA\\_Spending\\_Report\\_0611.pdf](http://www.dartmouthatlas.org/downloads/reports/PA_Spending_Report_0611.pdf)

Map 1. Price-adjusted Medicare expenditures per beneficiary by hospital referral region (2008)



NH Health Cost: Consumer Facing Cost Estimator  
 Nhhealthcost.org



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- [Health Costs for Employers](#)
- [FAQs and Methodology](#)
- [Resources](#)
- [Contact Us](#)

Sunday, Februar

- Pricing of Health Care Services
  - A Deeper Explanation
- Health Costs for Insured Patients
- Health Costs for Uninsured Patients

**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	<a href="#">DARTMOUTH-HITCHCOCK (CONCORD)</a> 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 OBCYN	\$54	\$0	\$54	HIGH	LOW	603.624.8491
LONDONDERRY FAMILY PRACTICE	\$55	\$0	\$55	HIGH	VERY HIGH	<a href="#">LONDONDERRY FAMILY PRACTICE</a> 603.537.1300

MY HEALTH CARE OPTIONS (<http://hcqcc.hcf.state.ma.us/>)  
 Consumer Facing Cost and Quality Comparisons

Influenza Vaccination  
 Patient Safety  
 Serious Reportable Events  
 Surgical Care

**Patient Experience**  
 Patient Experience

**Bone and Joint Care**  
 Back Procedure  
 Hip Fracture  
 Hip Replacement  
 Knee Replacement

**Cardiovascular Disease**  
 Angioplasty  
 Bypass Surgery  
 Cardiac Screening Tests  
 Heart Attack  
 Heart Failure  
 Heart Valve Surgery  
 Stroke

**Digestive System**  
 Gall Bladder  
 Intestinal Surgery  
 Weight-loss Surgery

**Obstetrics**  
 Cesarean Section  
 Normal Newborn  
 Ultrasound  
 Vaginal Delivery

**Outpatient Diagnostic**  
 CT Scan  
 MRI  
 X-Ray

**Outpatient Radiation**  
 Radiation Treatment

**Respiratory**  
 COPD  
**Pneumonia**

**Women's Health**  
 Mammogram

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

## Appendix 7: Recent National APCD Activity

### APCDs in Action

Across the country, APCDs have driven policy and market improvements. The following examples demonstrate the power of these analytic engines:

**Wisconsin Health Information Organization**, a voluntary initiative that collects commercial and Medicaid claims data for 68% of the population, used its APCD for health care delivery improvement initiatives. For example, four specialty study groups utilized APCD data to observe variation in procedure codes, identify cost drivers in each, and identify best practices and voluntary move to standardized care patterns. The APCD was also used to highlight variation in diabetes, hypertension and asthma and pregnancy care and create process improvement programs to raise performance statewide.

**Finger Lakes Health System Agency**, a nine-county regional initiative in New York, utilized its APCD to track outpatient care and readmission rates in an effort to decrease readmissions and avoidable ED use. The data enabled the community to identify areas for primary care interventions, such as education, caching and improved access.

**Massachusetts Division of Health Care Finance and Policy**, which has broad legislative authority to collect health care data, utilized the APCD for statutorily required analysis, including an annual study regarding health care cost trends in the state. The APCD helped the Division identify significant variation in private payer prices paid to hospitals for certain procedures despite consistency in the quality of care received during those procedures. By facilitating transparency within the Massachusetts health care delivery system, the APCD has enhanced public and private understanding related to cost, medical service utilization, health care quality and comparative effectiveness.

Whether state wide or regional, legislatively mandated or voluntary in nature, APCD data and analytics can provide a powerful window into the value of the health care provided. Colorado has much to gain from its APCD, and will be in a strong position to conduct deep analysis for performance measurement, quality improvement, and cost reduction efforts.

### Related National and Federal Activity

The Colorado APCD closely monitors the experience of other states' APCDs to identify best practices and to identify opportunities for support and collaboration.

**Alignment of APCDs and Health Information Exchanges:** The Maine Health Data Organization, a quasi-state agency, received a grant from the Maine Health Access Foundation (MeHAF) to link Maine's statewide health information exchange (HIE) with Maine's all-payer claims database. Maine policy experts expect that linking the data contained in the HIE to the claims

database will allow providers and researchers to compare trends in health care treatment with corresponding cost data. Researchers expect this project will also provide data for clinical effectiveness reviews. Colorado's APCD is currently exploring similar strategies with both the Quality Health Network (QHN), serving the Western Slope, and the Colorado Regional Health Information Organization (CORHIO), serving the Front Range. Additionally, CIVHC is working with CORHIO on other technology aimed at avoiding duplication of efforts in regard to protecting privacy through unique identifiers.

**New State APCDs:** During 2011, West Virginia and New York State passed legislation that allows development of an APCD in those states while Louisiana is planning to implement a voluntary system. These three states join 13 other states that already have, or are about to implement, either a mandatory or a voluntary APCD. In addition, at least five states are actively considering how to move forward with either a mandatory or a voluntary reporting system.

**Data coding standards:** The APCD Council, a national nonprofit organization based at the University of New Hampshire, is facilitating conversations among state APCDs, national independent standards organizations and health insurers to develop common code sets and formats for information that is commonly reported on health care claims. The purpose of this effort is twofold: first, to reduce the initial investment needed to develop an APCD and second, to reduce the cost to health plans. CIVHC is aligned with this effort and is closely following emerging recommendations.

**Centers for Medicare and Medicaid Services:** To date, CMS has not provided federal funding for the specific purpose of developing, implementing and operating an APCD. CMS sees the opportunity to leverage such data for the operation and administration of Health Benefit Exchanges under the Affordable Care Act. Reports derived from the APCD could address certain federal ACA requirements, including those related to risk adjustment, reinsurance and rate review. Given that states may elect to have an entity other than the Exchange perform the rate review, reinsurance, and risk adjustment functions, a state may determine that an existing APCD can meet this requirement. States can apply for grant funding to support this activity. The Colorado APCD will work closely with the Division of Insurance and the Colorado Health Benefit Exchange (COHBE) to fully explore any funding opportunities.

CMS is also supporting the development of a compendium of state-specific APCD data submission requirements in an on-line, searchable data layout inventory. This library will support new APCD efforts going forward and could reduce variation among data specifications through an information exchange. Finally, CMS continues to explore the potential for creating a multi-state APCD. Three states – Maine, Vermont and New Hampshire – contracted with the same data management vendor. The datasets and processing rules used among the three states were similar enough to allow regional analysis of cost and utilization for certain procedures.

CMS is also the federal entity that determines how Medicare data may be distributed. Medicare cost and utilization data are extremely important components of total health care spending. CMS data release policy currently precludes CIVHC from obtaining Medicare data at a useful



level of detail. During 2012, CIVHC will continue to work with other states and national data organizations to continue advocating for appropriately configured Medicare data for inclusion in the APCD.