California Health Care Foundation

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Issue Brief

The ABCs of APCDs: How States Are Using Claims Data to Understand and Improve Care

All-payer claims databases (APCDs) systematically collect administrative data, including medical, pharmacy, and dental claims, eligibility files, and provider (physician and facility) files. These claims are created when an insured patient receives care or fills a prescription, and include a record of what was provided, who provided it, how much was charged, and how much was paid. In capitated systems like Kaiser Permanente, these data are generated when a patient has an encounter with the care system. Data are submitted directly from health insurers, third-party administrators, and pharmacy benefit managers to a central point, often a state agency or its vendor.

Fourteen states currently have functioning APCDs, and another 10 are in various stages of development. In June 2018, Governor Jerry Brown signed AB 1810, which set aside $60 million in state funds for the creation of an APCD in California.

States have a long history of collecting, analyzing, and reporting health care data for assessing quality and system performance. Hospital discharge and financial databases, such as those maintained by the California Office of Statewide Health Planning and Development, have provided systemwide information on hospitals for decades. A statewide APCD could provide more broad information on the use and price of care across different settings. This information could be used by policymakers, health care providers, plans, employers, and academic researchers to understand regional variation in care delivery and price, monitor population health trends, and ensure patients have adequate access to care. Several states have created transparency tools for consumers using APCD data.

This issue brief provides examples of the ways APCDs are being used by selected states and illuminates issues of critical importance to California, including health care and prescription drug spending trends, opioid use and prescribing patterns, and the prevalence of chronic disease. It concludes with a short summary of key areas for consideration when developing a new APCD. More information on these issues and other use cases for APCDs can be found at www.apcdshowcase.org.

Tracking Spending Trends and Cost Drivers

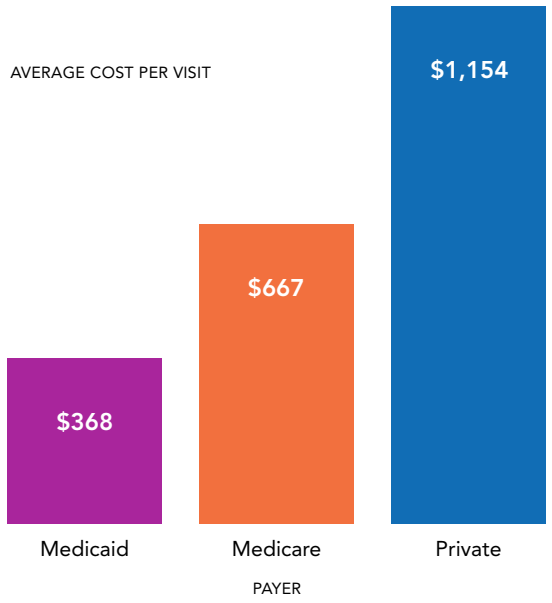
Numerous states are using their APCDs to understand statewide spending trends and health care cost drivers. Massachusetts's APCD is used by the state's Health Policy Commission to create an annual report that examines trends in health care spending for commercial payers by category of service (e.g., hospital outpatient, inpatient, and emergency department), type of episode (e.g., MRI, colonoscopy), and geographic area. These data are used each year to make policy recommendations about how to meet spending growth targets in Massachusetts.

Rhode Island used its APCD to uncover the top 15 symptoms of patients presenting to the state's emergency rooms, as well as the associated costs of potentially avoidable emergency room visits broken down by payer type (e.g., Medicaid, Medicare, private insurance) (see Figure 1). The analysis suggests there is $90 million in potential savings to the state in reducing avoidable emergency room visits.

Minnesota used its ACPD to produce a series of reports that focuses on the variation in prices for four common, high-volume hospital inpatient treatments. Researchers found two- to seven-fold differences in the prices for those procedures within hospitals for commercially insured patients. These differences persist after controlling for factors such as clinical complexity and length of stay. Such information could allow self-insured employers, health plans, and hospitals to further investigate and ultimately reduce variation in price.

Finally, the APCD in Virginia was used to study health care spending for "low-value services" as defined by the Choosing Wisely® initiative and other national initiatives that focus on preventing unnecessary medical tests and procedures. Researchers identified $586 million in unnecessary spending for 44 low-value services.

Figure 1. Cost of Potentially Avoidable Emergency Room Visits, Rhode Island, 2013–2014



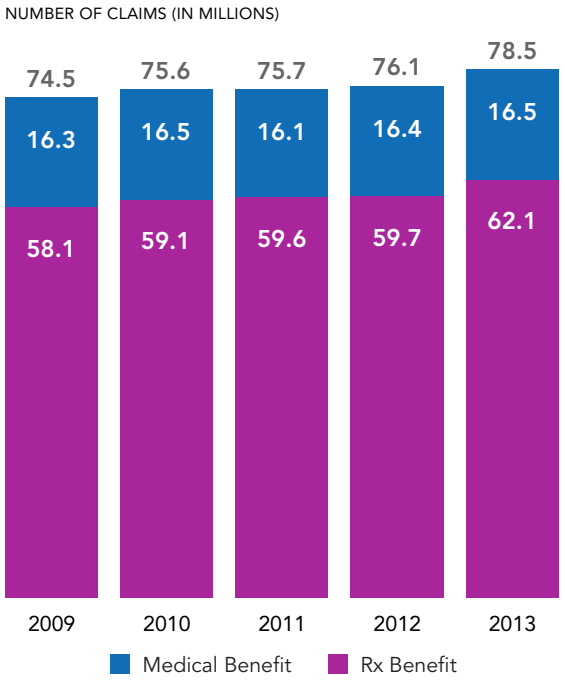
Source: *Potentially Preventable Emergency Room Visits*, Rhode Island Dept. of Health, health.ri.gov.

Understanding Prescription Drug Spending and Use

Minnesota's APCD has been used to analyze prescription drug spending by therapeutic category and setting, highlighting how spending on prescription drugs is split between medical and prescription drug benefit plans (see Figure 2). The research shows that more than a third of prescription drug spending in the state was covered through medical benefits, an often overlooked and opaque component of total health system spending.

Analysis of the Colorado APCD by the Center for Improving Value in Health Care (CIVHC) showed the increase in median price for EpiPen prescriptions for both commercial and Medicaid plans. The median amount paid for EpiPen prescriptions increased from just over $100 to $500 between 2009 and 2016. Having access to these data can help media, advocates, and others raise awareness of these price increases, and support initiatives to lower the costs for necessary drugs.

Figure 2. Spending on Prescription Drugs in Minnesota, 2009–2013



Source: *Prescription Drug Spending Trends in MN*, Minnesota Dept. of Health, Feb. 29, 2016, www.health.state.mn.us (PDF).

Uncovering Key Drivers of the Opioid Epidemic

State APCD systems in Virginia, Utah, and Minnesota have used data from their APCDs to track opioid prescription claims across geographic areas and patient characteristics to understand and address trends in the epidemic. One study in Utah analyzed the diagnoses for which people were prescribed opioids (see Table 1). The study showed that back pain was the most common condition for which chronic users were being prescribed new opioid medications, information that can be used to target physician outreach.

Table 1. Top Diagnosis Categories (CCS) at Initial Prescription for Chronic Users, Utah July 1, 2014, to June 30, 2015

	NUMBER / PERCENTAGE	
Spondylosis; intervertebral disc disorders; other back problems	323	27.2%
Other non-traumatic joint disorders	71	6.0%
Other connective tissue diseases	67	5.6%
Medical examination/evaluation	58	4.9%
Headache, including migraine	56	4.7%
Osteoarthritis	44	3.7%
Other nervous system disorders	42	3.5%
Essential hypertension	42	3.5%
Diabetes mellitus without complication	30	2.5%
Rheumatoid arthritis and related disease	26	2.2%

Source: *Utah Health Status Update: Initial Diagnosis of Opioid Naive Patients*, Utah Dept. of Health, Sept. 2017, ibis.health.utah.gov (PDF).

The Minnesota Department of Health used its APCD to provide the legislature with information on opioid prescribing patterns and to inform the development of new practice guidelines. The analysis focused on the use of high-dose opioid prescriptions and showed that back pain and chronic pain accounted for almost a third of high-dose opioid prescriptions in 2015, as shown in Table 2.

Table 2. Proportion of Prescriptions by Prior Procedure or Diagnosis, 2015

PROCEDURE OR DIAGNOSIS (WITHIN 90 DAYS)	TOTAL	HIGH-DOSE (90+ MME PER DAY)
Surgery	51.7%	50.7%
Injury	7.3%	5.7%
Back pain	9.4%	12.2%
Other acute pain	1.0%	1.0%
Other chronic pain	13.0%	18.2%
Long-term opioid use	1.0%	1.1%
Other medical visit	7.4%	4.0%
No medical visit	9.3%	7.1%

Source: Stefan Gildemeister, *Opioid Use in Minnesota: Analysis of Prescribing Patterns & Chronic Use* (presented at annual meeting of the National Association of Health Data Organizations, Oct. 2018), Minnesota Dept. of Health, Oct. 11, 2018, www.nahdo.org (PDF).

Estimating the Prevalence and Cost of Chronic Disease

APCDs have been valuable sources of information to describe important public health issues, including prevalence reports for chronic conditions. In Colorado, CIVHC analyzed data from its APCD to provide estimates of the population with diagnoses of hypertension and diabetes (see Figure 3) in Medicaid, Medicare, and commercially insured populations. The report also showed the change in disease prevalence over time.

Virginia also released a summary review of chronic condition prevalence and cost in the state (Figure 4), finding the overall cost for people with at least one of the state's five most prevalent chronic conditions (see sidebar) was four times higher than for those without. Such information could be useful in targeting public health campaigns around certain conditions and geographic areas.

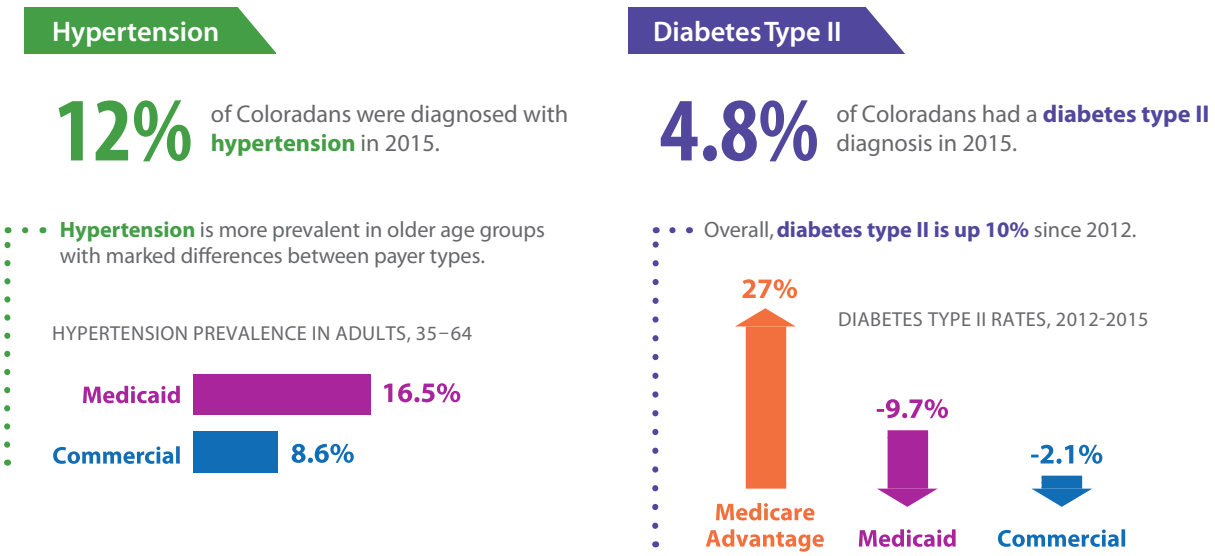
Top Chronic Conditions, Virginia, 2015*

- Hypertension
- Asthma
- Diabetes without coronary artery disease
- Chronic musculoskeletal disorders
- Gastrointestinal disorders

*Accounted for more than 50% of individuals with a chronic condition.

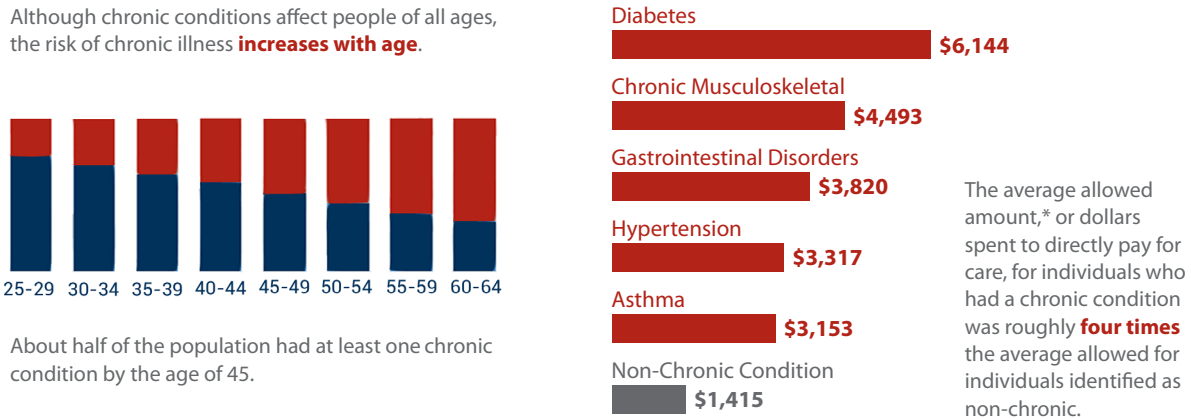
Source: *Chronic Conditions in Virginia*, Virginia Health Information, www.vhi.org (PDF).

Figure 3. Chronic Condition Insights, Colorado, 2015



Source: *Chronic Conditions in CO*, Center for Improving Value in Health Care, www.civhc.org (PDF).

Figure 4. Top Chronic Condition Prevalence in Virginia, 2015



*Displayed using standardized proxy reimbursement amount.

Source: *Chronic Conditions in Virginia*, Virginia Health Information, www.vhi.org (PDF).

Designing for Success: Six Key Areas

Throughout the past 15 years of APCD development, states have identified six key components for conceptualizing and implementing a database that can produce useful information for policymakers, public health officials, health care providers, plans, consumers, and other stakeholders. Summarized below, these components include engagement, governance, funding, technical build, analysis and application development, and continuous feedback.

More information on each component is accessible in the APCD Development Manual available at www.apcdcouncil.org. Each component of the development cycle is interdependent on the others and all need to be considered to ensure success.

- **Stakeholder engagement** is the foundational step in the development of an APCD. It is critical for articulating and communicating the purpose of the APCD. Stakeholders typically are key users of the system, and their buy-in and support is important throughout the entire development cycle. Establishing a shared vision and purpose for the system informs the requirements and guides decisions around other key components. States can cultivate a strong community to support APCD development through this inclusive and deliberative process, which requires continual feedback to grow the system over time.
- **Governance** covers the legal framework, including authorizing legislation, and designates the oversight entity and oversight structure (e.g., advisory board or governing commission). These components form the foundational structure of the APCD and have bearing on all aspects of the technical build and use of the APCD. Governance structures can drive or limit the functionality of the other components. The final governance parameters (in legislation, rules, and policies) will reflect the state's intended use of the data, political environment, oversight of the system, and assurances for privacy and data use.
- **Funding** for initial development and sustainable operations of the APCD has an important impact on the approach to the technical infrastructure and scope of analytics. States use various funding mechanisms for initial and ongoing system support. Diversification of revenue sources is recommended for long-term sustainability. Because there is value to the systemwide, cross-payer data that are captured in an APCD across multiple state agencies (e.g., health departments, insurance departments, Medicaid), states have been successful in leveraging funds across state and federal agencies to support the system.
- The **technical build** is the data infrastructure of the system. It begins with data submission requirements and includes the data intake and quality control / data management protocols that are used to validate and aggregate the data. The technical build phase of APCD development results in the operational and quality assurance protocols for receiving and processing the data that will be used for analytics and applications. Because many states use a vendor for these functions, it is important to issue a clear and complete request for proposals to assure intended results and functionality of the system.
- **Analysis and application development** decisions are driven by stakeholder information needs and are tied to the governance and oversight structure of the APCD. By focusing on analytic utility, a broad range of options exist for the state to make the data available, including releasing reports, creating online analysis tools, and developing analytic data sets for external users. A comprehensive analytic plan with a transparent and open process for providing data at various levels of detail for key users can help assure that APCD data are used appropriately.
- **Continuous feedback** is critical to improve each component of the data development cycle and to add value to the information the system generates. States that have invested in building strong stakeholder processes have forums to deliberate the many challenges faced during each phase of system development and deployment. As APCD programs and systems mature, stakeholders provide input for enhancements that drive the ultimate value of the information produced.

Conclusion

A statewide APCD reporting system provides unique opportunities to examine the performance of the health care system, providing a wide-angle lens on patterns of care, costs, and covered populations that includes multiple payers and types of providers. Having this type of independent, systemwide data helps uncover information, such as the underlying drivers of health care costs, understanding the prevalence and impact of public health issues like chronic disease, and informing policies around opioid prescribing guidelines. Using a six-part framework for conceptualizing and implementing a statewide APCD can lead to the creation and implementation of a database that produces useful information for all of California's important health care stakeholders.

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About the APCD Council

The APCD Council is a learning collaborative of government, private, nonprofit, and academic organizations focused on improving the development and deployment of state-based all-payer claims databases (APCDs). The APCD Council is convened and coordinated by the Institute for Health Policy and Practice at the University of New Hampshire and the National Association of Health Data Organizations. The council's work focuses on shared learning among APCD stakeholders, early-stage technical assistance to states, and catalyzing states to achieve mutual goals. For more information, visit www.apcdcouncil.org.

About the Foundation

The California Health Care Foundation is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. We work to ensure that people have access to the care they need, when they need it, at a price they can afford.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patient-centered health care system.

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