REPORT
DECEMBER 2020

STATE ALL-PAYER CLAIMS DATABASES
Tools for Improving Health Care Value

Part 2: The Uses and Benefits of State APCDs

Douglas McCarthy
Senior Research Advisor
The Commonwealth Fund

ABSTRACT

ISSUE: Many states and stakeholders are seeking to control the rising cost of health care and increase its value. All-payer claims databases (APCDs) facilitate such efforts by aggregating data on health care services paid for by health insurers and public programs, thereby offering a broad perspective on cost, utilization, and quality of care.

GOALS: Describe the uses and benefits of state-level APCDs as well as challenges to realizing their value, including data limitations and antitrust concerns.

METHODS: Interviews with staff and stakeholders of eight diverse state-level APCDs, supplemented by a review of documentary evidence.

KEY FINDINGS AND CONCLUSIONS: APCDs are used to: 1) report on health system spending, utilization, and performance; 2) enhance state policy and regulatory analysis; 3) inform the public about health care prices and quality; 4) enable value-based purchasing and health care improvement; 5) support public health monitoring and improvement; and 6) provide reliable data for health care research and evaluation. The benefits of state APCDs include raising awareness of the need for change; fueling data-informed policymaking; and generating knowledge for improvement. Fulfilling the purposes of an APCD requires cultivating relationships with stakeholders and learning how to effectively use data to meet their needs.

TOPLINES

- All-payer claims databases can help state health care purchasers "buy smart," raise awareness of the need for health system change, and fuel data-informed policymaking.
- To reap the benefits of an all-payer claims database, states need to cultivate relationships with stakeholders and learn how to use data to meet their needs.

The Commonwealth Fund

INTRODUCTION

States and health care stakeholders that wish to take effective action to control health care spending and ensure its value require systemic information on costs, utilization, and quality of services. To support this objective, 21 states have created or are implementing all-payer claims databases (APCDs). These aggregate health care payment data for state residents from commercial health insurers, some employee benefit plans, and the Medicaid and Medicare programs (Exhibit 1). Eleven other states have indicated strong interest in establishing APCDs, while voluntary efforts serve specific geographic areas or purposes in at least five states.[1]

This report, the second in a two-part series, synthesizes the experiences of eight state-level APCDs. The purpose is to inform states about what to consider when creating an APCD and to help them realize the potential of their APCD. Study sites were selected to exemplify diverse approaches and contexts for implementing an APCD as well as to highlight relatively advanced uses of data (see the section, "How This Study Was Conducted"). The first report describes how the states established their APCDs. This report describes the uses of APCDs, their benefits as perceived by stakeholders (Exhibit 2), and challenges that must be overcome to realize their value. It concludes with lessons learned, which could be useful for other states.

STATE APCD USE CASES: A GROWING USER BASE

The collective uses of state APCDs have increased as the usability and integrity of the data have improved and as stakeholders recognize more opportunities to apply the data.[2] States typically require that use of their APCDs will benefit residents of the state, as well as meeting other objectives specific to each state. A synthesis of the many applications of state APCD data by stakeholders in the study states suggests six overarching use cases (Exhibit 2).

Exhibit 1. State Activity on All-Payer Claims Databases

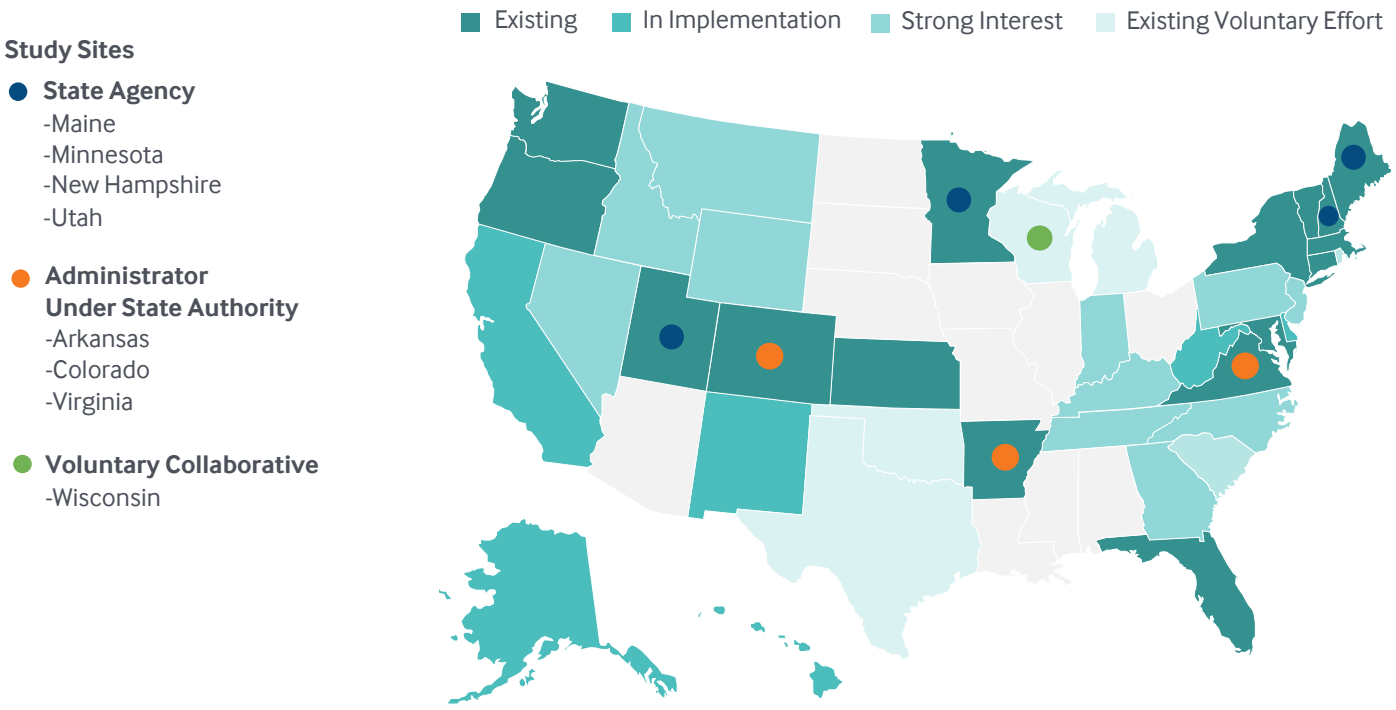


Exhibit 2. APCD Use Cases and Users of APCD Data and Analyses

Use Cases	Users						
	Policymakers	Purchasers	Providers	Insurers	Consumers	Researchers	Consultants
Reporting on health care spending, utilization, and performance	P	P	P	P	S	P	P
Enhancing state policy and regulatory analysis	P	S	S	S		S	S
Informing the public about health care prices and quality	S	P	S	S	P	S	S
Enabling value-based purchasing and health care improvement	P	P	P	P		S	P
Supporting public health monitoring and improvement	P	S	S	S		S	S
Providing reliable data for health care research and evaluation	S	S	S	S		P	S

Source: Author's analysis.
Note: P = Primary user. S = Secondary user. Policymakers includes state legislators, state agencies, and local officials. Purchasers includes public and private employers and coalitions. Providers includes hospitals, health systems, and health care practitioners. Insurers includes health and dental insurers. Consultants category may also include brokers and vendors.

Colorado and Maine attend to all six use cases; other states give priority to a subset of use cases and users, depending on their statutory or organizational mandate and resources (Appendix Exhibit A). Minnesota focuses on use cases one, two, and five; New Hampshire emphasizes use cases two, three, five, and six; and Wisconsin prioritizes use cases four and six. Each use case is described in turn below.

Reporting on Health Care Spending, Utilization, and Performance

Study sites conduct analyses or sponsor research (to varying degrees depending on their budgets), examining patterns and trends in health care spending, utilization, and performance overall and by age group, type of insurance coverage, and geographic area. Recent public reports have examined topics such as price increases for prescription drugs, trends in prescription opioid drug use, and the use and distribution of telemedicine visits.

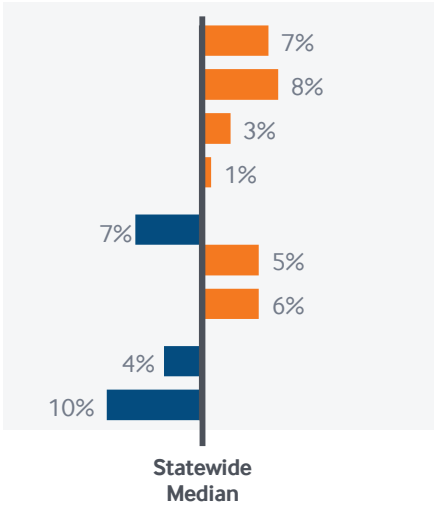
Total cost of care. Colorado and Utah participated in a multistate project led by the Network for Regional Health Improvement that calculated risk-adjusted total cost of care and total resource use for commercially insured populations.[3] By highlighting differences in the relative level and drivers of spending among states and regions within states (Exhibit 3), such an analysis can help policymakers and other stakeholders target their cost control efforts.[4] Both states distributed practice-level reports identifying actionable opportunities for physicians to improve their performance relative to their peers.[5]

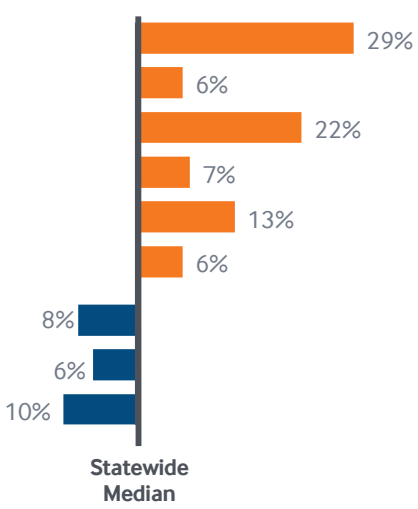
Preventable hospital use. The Minnesota Department of Health used its APCD to identify, for a one-year period, 1.3 million hospital and emergency department (ED) visits that were potentially preventable, and which represented $1.9 billion or 4.8 percent of total health care spending.[6]

Low-value care. Five study sites are using Milliman's Health Waste Calculator to quantify the frequency of — and potential savings from reducing — services that provide little or no clinical benefit to patients (Exhibit 4). In Virginia, low-cost services were delivered much more frequently and accounted for almost twice the aggregate cost of unnecessary high-cost services.[7] These insights are being used in collaborative efforts to guide improvement.[8]

Exhibit 3. Total Median Risk-Adjusted Per Member Per Month Commercial Cost by Colorado Region

	Cost PMPM
West	$584
East	$551
Greeley	$492
Fort Collins	$453
Grand Junction	$449
Denver	$444
Statewide Median $424	
Boulder	$412
Pueblo	$378
Colorado Springs	$335





Source: Center for Improving Value in Health Care. Notes: Total includes inpatient, outpatient, professional, and pharmacy. Statewide medians only reflect results for 163 adult primary care practices included in the 2016 Colorado APCD study.

Exhibit 4. Utilization and Spending for Low-Value Services by Payer and State in 2017

	Commercial			Medicaid		
	Low-Value Services per 1,000	Total Low-Value Spending	Low-Value Spending PMPM	Low-Value Services per 1,000	Total Low-Value Spending	Low-Value Spending PMPM
Maine	322	$54,356,000	$10.38	317	$9,630,000	$4.36
Colorado	419	$150,576,000	$10.39	339	$69,052,000	$4.98
Virginia	477	$219,343,000	$6.16	106	$45,055,000	$3.11

Source: VBID Health, Utilization and Spending on Low-Value Medical Care Across Four States, May 2020.
Notes: Washington State was included in the analysis but is not shown. Total Low-Value Spending includes both payer costs and member out-of-pocket costs. Low-Value Services per 1,000 = number of low-value serviced provided per 1,000 members in that sector. Low-Value Spending Per Member Per Month (PMPM) = total low-value spending divided by total member months of enrollment for that state. Claims from each APCD were run through the Milliman MedInsight Health Waste Calculator, a proprietary, algorithm-based software program designed to quantify low-value care use and spending by differentiating whether the use of a specific medical service was clinically necessary, likely low-value, or low-value. Low-value care was quantified by analyzing 47 clinical services deemed as low-value by sources such as the United States Preventive Services Task Force and the Choosing Wisely campaign.

Prescription Drug Spending. To help policymakers and payers identify targets for cost control, Maine recently enacted legislation requiring its APCD to report, by type of payer, the costliest drugs, the most frequently prescribed drugs, and the drugs with the highest year-over-year cost increases. A Minnesota analysis found that drugs administered in physicians' offices (and paid for under a medical benefit) tend to be high cost, high in cost growth, and account for nearly as much in total health care spending as prescription drugs filled at the pharmacy (and paid for under a pharmacy benefit).

Enhancing State Health Policy and Regulatory Analysis

State insurance departments, Medicaid agencies, attorneys general, and legislators are making increasing use of APCD data to enhance policymaking, regulatory oversight, and planning functions (Exhibit 5). Leaders in several states say that legislators are routinely requesting analyses of APCD data to answer questions about, for example, the frequency and cost of so-called "surprise" medical bills for out-of-network services. APCD data also can be used in a policy intervention. Legislation enacted in Colorado, for example, limits out-of-network billing to a percentile of the in-network allowed amount in the same geographic area based on commercial claims for the prior year.[9]

Exhibit 5. Example Uses of APCD Data for State Health Policy and Regulatory Analysis

Insurance regulators[10]	• Review the adequacy, fairness, and affordability of insurers' premium rates[11] • Assess health plan network adequacy (out-of-network use) • Determine reserve requirements for new insurance products • Analyze the feasibility of state risk-adjustment and reinsurance programs • Estimate the impact of changes in geographic rating areas (e.g., combining higher- and lower-cost rating areas or creating a single statewide rating area) • Evaluate how patient cost-sharing effects utilization of services • Quantify the timeliness of insurer claims payment • Implement "surprise-billing" legislation limiting out-of-network charges • Understand cost impact of COVID-related moratorium on elective services
Medicaid agencies	• Conduct comparative studies of utilization, cost, and quality of care • Determine the adequacy of reimbursement rates for attracting and retaining providers by way of comparison to commercial insurance rates • Assess expected and actual utilization and costs for expansion populations • Quantify the opportunity to impact spending for high-cost beneficiaries • Examine how a Medicaid accountable care program reduced rehospitalizations • Inform the creation of a "centers of excellence" program • Describe the frequency and total cost of low-value care • Identify opportunities to reduce pharmacy spending by examining top drugs by spending, volume, and specialty usage as well as generic substitution rates
Attorney General's office	• Conduct competitive market analysis for mergers and potential anticompetitive agreements in health care • Study competition between hospitals by assessing how far patients are willing to travel to receive inpatient and outpatient care • Assess competition between physician groups and between hospital outpatient departments and freestanding facilities
Legislative requests, mandates, or attention	• Evaluate options for implementing a public insurance option • Assess the impact of out-of-network billing practices • Calculate the percent of health care spending devoted to primary care • Quantify costs of emergency department visits for mental health conditions to demonstrate the opportunity for improving access to services • Measure trends in the costs of treating firearm-related injuries in the state • Assess potential savings from bulk purchases of vaccines • Identify possible violations of state regulation of pharmacy benefit managers by comparing payments reported by pharmacies to payments reported in claims

Source: Author's analysis of APCD websites and reports.

Informing the Public About Health Care Prices and Quality

Colorado, Maine, and New Hampshire are among nine states that have created websites displaying average or median prices for common elective procedures, along with providers' quality of care.[12] These sites report on bundled prices for common episodes of care including services obtained before, during, and after a procedure.[13] Other study states offer more limited information. For example, Virginia publishes statewide and regional prices according to care setting, whether a hospital, ambulatory surgical center, or physician's office.[14]

One study found that New Hampshire's consumer shopping website (see Case Example: New Hampshire's HealthCost Transparency Website) had a procompetitive effect on prices of medical imaging procedures, as some consumers selected lower-cost providers, which led to providers reducing their prices.[15] Assuming an annual cost of $1 million to develop and operate the state's APCD and website, the estimated $44 million saved over five years by consumers and insurers on the cost of imaging procedures represents a substantial return on the state's investment. Additional research is needed to determine whether and to what degree this experience may be generalizable to other procedures and states.[16]

While the benefits of health care quality ratings are well known,[17] the efficacy of publishing health care prices remains uncertain.[18] One plausible concern is that disclosing prices in markets where competition is weak may lead lower-priced providers to raise their prices, an effect that has been observed in other sectors.[19] Another concern is that only a subset of health care services are "shoppable" and few consumers shop for those services, although a majority say they would like to do so.[20] Experts have recommended ways of increasing the likelihood that price transparency will have desired effects on consumer and provider behavior.[21]

CASE EXAMPLE: NEW HAMPSHIRE'S HEALTHCOST TRANSPARENCY WEBSITE

In 2007, the New Hampshire Insurance Department launched a HealthCost website, which uses data from the state's APCD to estimate prices paid to health care facilities for common medical tests and procedures. Users can learn the total cost of a procedure — including physician, lab, and facility fees — based on their insurance coverage, deductible, and co-insurance. The website now covers more than 100 medical tests and procedures and two dozen dental procedures. It also displays quality measures for the state's hospitals, such as patient experience and infection rates. The website's use has been growing (it reached up to 30,000 visitors in one recent month) through outreach to employers and links from social media and Google searches, according to state officials.

The existence of the website appears to have led to changes in market behaviors.[22] To estimate market effects, a researcher compared changes in the price of medical imaging procedures that were and were not posted on the website during the five years after its launch. Results imply that the website led to reductions of 4 percent in patients' out-of-pocket costs and 5 percent in insurers' total costs for X-rays, computed tomography, and magnetic resonance imaging services. Savings increased over time while price variation narrowed. Savings were twice as great for patients responsible for the full cost of the procedure under their deductible. These cost reductions translated to estimated savings of approximately $7.9 million for patients and $36 million for insurers over the five-year period.[23]

> ***Having an APCD is a huge resource for us. It helps us know where to look and what to do. Having good data allows us to avoid unintended consequences [of shifting costs from one sector to another]. ...Regional comparisons give us a treasure map on where to start in identifying market distortions...If we can make commercial insurance more affordable by removing market distortions, then there are better incentives for people on Medicaid when a pay raise puts them off enrollment.***
>
> **John Bartholomew**
> ***Colorado Department of Health Care Policy and Financing***

APCDs also can be used to help consumers make insurance purchasing decisions. Colorado's state insurance marketplace uses information about total annual health care costs and out-of-pocket expenses from the state's APCD in its Quick Cost and Plan Finder tool. It helps customers compare health plans for people with similar demographic characteristics, expected health care use, and prescription medication use.

Enabling Value-Based Care Delivery and Health Care Improvement

In Maine and Wisconsin, hospitals and health systems seeking to improve access to and quality of care and monitor their competitive market position are regular users of APCDs. Officials report that such monitoring has caused some hospitals to modify their referral patterns.

In several states, interest in using APCD data also has been growing among purchasers seeking to promote value-based care and form purchasing alliances; insurers evaluating opportunities to develop products that may promote more responsive or competitive markets; and consultants, brokers, and vendors for testing new payment models and developing services to improve delivery system performance and meet market needs (Exhibit 6).

CASE EXAMPLE: ANALYZING DELIVERY SYSTEM PERFORMANCE IN WISCONSIN

The Wisconsin Health Information Organization has honed its APCD data analytic tools over the years to meet the needs of its stakeholders, many of which are integrated delivery systems. Subscribers can benchmark the quality and efficiency of health care providers to identify opportunities for improving health system performance and market agility (prices are normalized to mask negotiated fee schedules). They can use the tools to answer questions such as: How does this system stack up against competitors? What is causing variation in quality of care and resource use? What doctors do I need to work with to improve quality and efficiency? Sophisticated data users can access the tools on a portal or download de-identified data directly into their own IT systems for custom analyses.

> ***One of my constituents had to have a colonoscopy, and they had to pay for it out of their pocket, and I told them to go on to CompareMaine to see what facilities get paid what, because maybe there's a cheaper option for them if they travel. And they found one, and it saved them thousands of dollars.***
>
> **Maine State Legislator**
> ***(as related by Karynlee Harrington, executive director, Maine Health Data Organization)***

Exhibit 6. Example Uses of APCD Data for Value-Based Purchasing and Improvement

Purchaser & Stakeholder Coalitions	• Assess cost drivers, provider prices, and out-migration of community services to support efforts to negotiate discounts or shift care to lower-cost local providers • Examine episode-of-care data to identify higher-quality and lower-cost providers for "centers of excellence" programs • Analyze pharmacy data to define the scope of cost reduction strategies such as generic drug substitution and specialty drug options • Create primary care practice reports that allow providers to benchmark the utilization and quality of care they provide in comparison to peers • Identify collaborative opportunities to reduce the provision of low-value care through benefit design, education, and incentives
Health and Dental Insurers	• Examine statewide medical cost structure, distribution of services, and utilization patterns to guide product and benefit designs to lower costs and meet needs • Assess the opportunity for entering the individual insurance market with a value-based reimbursement model • Research utilization of dental services for potential enhancement of access to services by the underserved population • Build networks of high-value providers by comparing providers' clinical performance relative to health care spending to achieve that performance
Health Care Providers and System	• Assess out-migration of rural hospital services to determine the opportunity for adding local services so that residents can receive care in the community. • Develop pricing bundles for an episode of care to lower health care costs without sacrificing quality of service. • Evaluate the benefits and risks of participating in an accountable care organization (ACO) and commercial payer contracts • Link Medicaid ACO enrollment data with APCD data (with patient consent) to identify those in need of outreach services that can help prevent ED visits • Provide data to support certificate-of-need applications, community health needs assessments, medical staff development, and facility and strategic planning • Assess the performance of potential referral providers to ensure that they offer high-quality care at a reasonable price
Consultants Brokers Vendors	• Understand the insurance and provider composition of various geographies to promote employer-provider connections and encourage a competitive market • Build high-value, low-cost physician networks by creating provider performance benchmarks to identify best performers and assess potential quality improvements and cost savings if providers can achieve the best performance • Create population-level benchmarks for cohorts based on geography, age, gender, and previous medical conditions for use in a mobile app that would allow users to know what they can expect to spend on health care

Source: Author's analysis of APCD websites and reports.

CASE EXAMPLE: USING REFERENCE-BASED PRICES IN COLORADO

The Colorado APCD contributed data to a multistate study conducted by the RAND Corporation that compared payments to hospitals by private health plans to the rates that Medicare would pay for the same services at those facilities.[24] A county-level analysis by the Center for Improving Value in Health Care found that hospital payments ranged from just above Medicare rates (115%) to nearly six times Medicare payments (576%) across the state.[25] Purchasing coalitions are using these data to assess the reasonableness of prices paid to hospitals and develop strategies to increase affordability. In western Colorado, the Peak Health Alliance negotiated a local hospital fee schedule based on the premise that lower prices would allow residents to receive more of their care in the community. Health insurers used the negotiated fees in customized insurance plans offering average savings of 20 percent for residents of Summit County in 2020.[26] This data-driven approach would not have been feasible without the data available through the APCD.

Supporting Public Health Monitoring and Improvement

Several states' health departments are active users of APCDs, for purposes such as:

- Estimating the prevalence and cost of care attributable to treated chronic conditions and the potential impact of preventing or delaying the onset of chronic disease (Exhibit 7);
- Measuring rates of chronic care management and cancer screenings (overall and by payer) and identifying providers with low rates for inclusion in quality improvement programs;
- Assessing the completeness of a state's immunization registry and obtaining an accurate count of the number of immunization providers in the state.

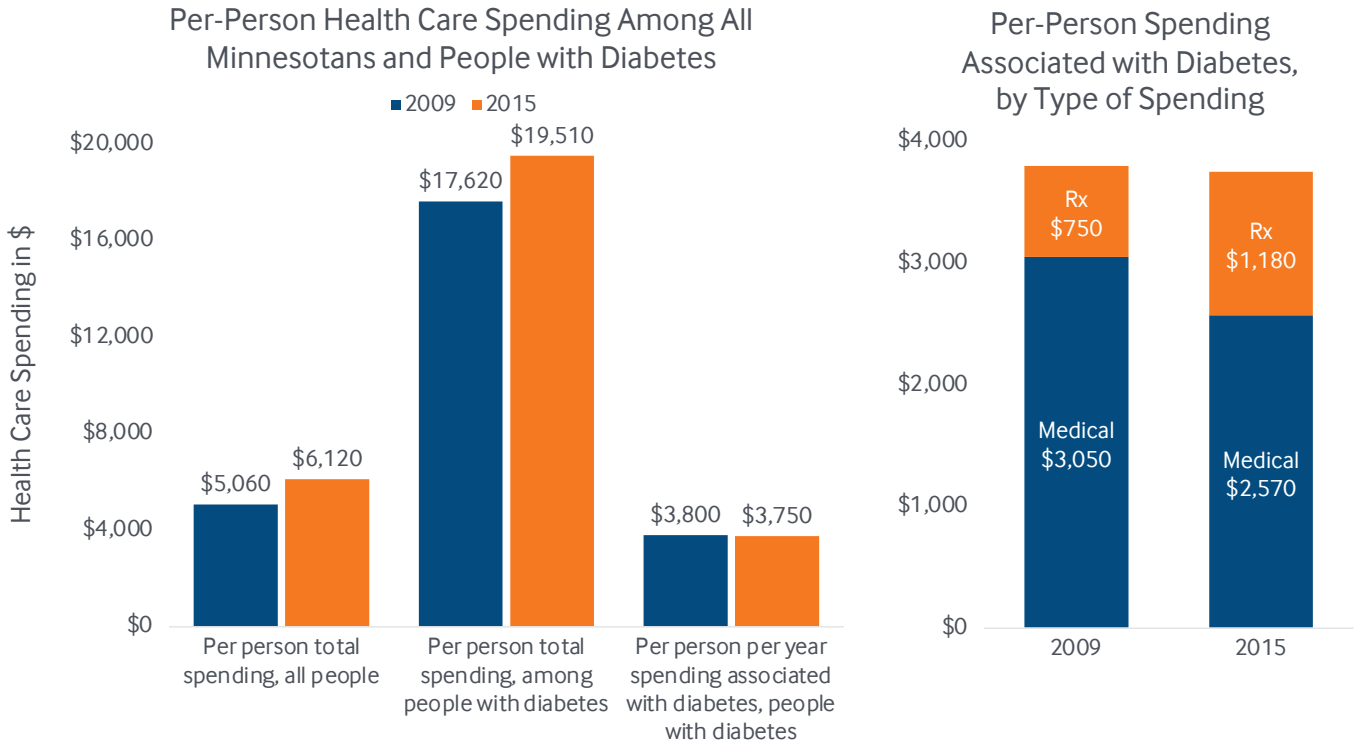
Local health departments are also potential users of APCDs, for community health needs assessments.[27] Colorado's Center for Improving Value in Health Care developed a template that local public health departments can use to create county health profiles that are based on public data, including cost and quality of care and chronic condition data from the APCD.

Several study sites are stepping up attention to public health in response to the COVID-19 pandemic.[28]

> ***"The Colorado APCD has been an essential tool for Peak Health Alliance, providing custom analyses which guide Peak's negotiations and ultimately lead to Peak's achievement in reducing the price of health insurance premiums for thousands of Coloradans."***
>
> **Tamara Pogue,**
>
> ***CEO, Peak Health Alliance***

Colorado and Wisconsin tapped their APCDs to report on populations at risk of serious illness from COVID-19, which may help officials address the current pandemic and plan for future outbreaks. Wisconsin's Medicaid agency used this information to conduct outreach to high-risk beneficiaries. Some states are reporting on the epidemiology of COVID-19 testing and treatment and associated changes in the use of health care and telemedicine during the pandemic.[29]

Exhibit 7. Diabetes-Attributable Health Care Spending in Minnesota



Source: Minnesota Department of Health, Treated Chronic Disease Prevalence and Costs in Minnesota. Mathematica Policy Research analysis of the Minnesota APCD and other data.

Providing Reliable Data For Health Care Research and Evaluation

State APCDs offer an attractive source of multipayer data for studies of changes in health care coverage or financing when it is important to place findings in the context of the state policy or market environment (Appendix Exhibit B). APCD data are useful to compare the differential effects of policies or interventions across payer types, such as evaluations of the impact of multipayer primary care medical home and accountable care initiatives.[30] Researchers also may benefit from the contextual knowledge that APCD staff can offer about payers and providers in a state. A project led by the National Bureau of Economic Research developed a Uniform Data Structure file format to allow standardized measurements and produce comparable findings across state APCDs.[31]

BENEFITS OF STATE APCDS

Stakeholders report that they find value in using APCD data and analyses for a range of purposes and needs that can ultimately help drive health system change. Looking across these varied use cases, there are three overarching benefits of state APCDs:

1. ***Raising stakeholder awareness and engagement:*** Public reports and initiatives supported by state APCD data can help educate key stakeholders about the needs and opportunities to improve health care system performance. Access to health care cost and quality information can empower consumers and employers to play a more active role in purchasing coverage and choosing where to get care. Public attention to variations in care and spending within a state can change stakeholder behavior.
2. ***Fueling data-informed policymaking***: State officials say that APCD data can help answer policy questions.

Analyses using APCD data have helped officials and legislators and their constituents understand cost drivers, access patterns, and quality of care so that they can make fact-based decisions to improve coverage, financing, and regulation of the health care system across the public and private sectors.

3. ***Generating knowledge for improvement***: Research using state APCD data creates new knowledge about specific treatments, provider practices, facilities, delivery systems or networks, payers, and geographic regions. Evaluations of interventions and programs using APCD data provide an evidence-based feedback loop for improving and refining approaches.

CHALLENGES TO REALIZING THE VALUE OF STATE APCDS

If We Build It, Will They Come?

The uptake of an APCD involves a convergence of factors: a perceived need for data by stakeholders coupled with an awareness of the APCD as a possible data source, the fitness of the data to meet the particular need, and the ability to analyze or interpret and effectively apply the data. Study sites have learned that stakeholders benefit from education on the uses to which APCD data can be put and how it can augment their existing sources of data. This effort may be more effectual when timed to coincide with an initiative or opportunity to act on the data.

To support the use of APCD data by external stakeholders, some states sponsor user groups and maintain a log of data issues and resolutions.[32] Less experienced users typically prefer to receive standard data tables or reports, which an APCD administrator must have the resources to produce even if paid for through user fees.

Four of five consumers surveyed think it is important for states to provide comparative information on health care prices, but only one of five residents of a state with a medical shopping website knew of it.[33] States such as New Hampshire are learning how to make their websites user friendly and encourage their use.[34] Maine's "Right to Shop" law requires health insurers to offer incentives for members to select lower-cost, higher-quality providers, which may be facilitated by — and lead to greater use of — the state's transparency website.[35]

Data Limitations and Completeness

APCDs are complex databases that require a learning curve to master. Health care claims data originate in payment for services and so have limitations when used for research and analysis.[36] Several APCD leaders noted the importance of efforts to ensure the integrity and credibility of their analytic efforts (see Part 1 for the role of advisory committees in this regard).[37] State officials caution that reports using APCD data should document data limitations to help assure appropriate interpretations.

> ***"The [APCD] has really helped our research team. In fact, we just got a highly competitive grant to help 125 primary care practices throughout Virginia do a better job of screening and counseling for unhealthy alcohol use. This study could help up to 1.25 million Virginians. We are using the APCD as a counseling and tracking tool for practices. The grant reviewers specifically commented on the value of having this data. ..."***
>
> **Alex Krist, MD, MPH**
> ***Professor, Family Medicine and Population Health, Virginia Commonwealth University***

One key limitation is missing data. For example, federal regulations restrict the submission of some substance abuse treatment data to APCDs.[38] Another is the Supreme Court's decision exempting self-insured ERISA plans from state APCD submission requirements.[39] However, APCDs can still lawfully receive claims data from some self-insured plans.[40] Administrators estimate that their APCDs represent the majority (50% to 90%) of their states' insured residents. While state APCDs can report on health care spending for commercially insured residents, some states collect additional data to report on total statewide health care spending trends.[41] Policymakers have proposed creating a national or federated approach to address data gaps for all states, but such a project would likely face its own limitations.[42]

CASE EXAMPLE: MINNESOTA'S TOTAL HEALTH CARE SPENDING ESTIMATES

The Minnesota Department of Health periodically synthesizes summary data collected from a variety of health care payers (including those that do not contribute claims data to the APCD) to report on total health care spending trends in the state.[43] Because these summary data are inadequate for in-depth analyses, the state uses its APCD in a complementary fashion to examine spending drivers by type of service, geographic area, or demographics. "The APCD is both a tool to dive down much deeper, but also to help triangulate whether aggregated numbers are precise enough to tell the story," says Stefan Gildemeister, the Department of Health's chief economist.

Antitrust and Market Competition

A review by scholars at the University of California Hastings College of Law found that APCDs generally fall within a "safe harbor" under federal antitrust guidelines when they report the average or median price paid for a service by multiple payers.[44] Most states require public disclosure of APCD data uses while offering stakeholders equal opportunity to make approved use of the data. APCD administrators rely on advisory bodies to help determine appropriate data uses that may advance a data requester's interests while also improving the functioning of the health care system or market. Ultimately, broader regulatory rules determine the nature and benefits of market competition in a state.

INSIGHTS AND LESSONS LEARNED

Fulfilling the purposes of an APCD requires continuous learning and adaptive management. Study states have taken a range of approaches to meet stakeholders' information needs. While states have learned from one another, shared knowledge is more easily translated in the technical than the policy context.[45] States' varied experiences in pursuing a transparency agenda, for example, shaped distinct courses even among geographic neighbors, sometimes requiring that they change direction in response to changes in the policy environment.[46]

Realizing the potential of an APCD requires building relationships to understand and meet needs. Several leaders emphasized the importance of spending time with new and existing state legislators and legislative staff, particularly those serving on committees with jurisdiction over health and budget matters. This interaction provides an opportunity to learn about their

> ***"It has been surprising just how much of a need there is for data from the APCD for a wide variety of projects, even after explaining all of the potential limitations."***
>
> **Michael Lundberg**
> ***CEO, Virginia Health Information***

needs and interests and to describe how the APCD can be used to answer specific policy questions. In many states, APCD staff or officials regularly interact with stakeholders and organizations that have an interest in using APCD data.[47] APCD staff also need to maintain good working relationships with insurers that submit data and with providers that are the subject of public disclosure.[48]

CONCLUSION

State APCDs continue to demonstrate their relevance. Data from APCDs can inform state policy and support health care stakeholders as they try to "buy smart" and improve health system performance. States can use APCD data and analyses to meet the need for fiscally responsible spending on public programs and to guide changes in the health care system brought on by the COVID-19 pandemic.

HOW THIS STUDY WAS CONDUCTED

Data Collection and Analysis: We conducted semistructured interviews with APCD leaders in each state and with select stakeholders (e.g., legislator, employer, Medicaid official) in some states. Interviews were recorded (with permission) and transcribed. Data derived from interviews and documentary sources were organized in cross-case displays for topical content analysis.[49] Findings were validated and refined based on a comparison with other published literature and through review by interviewees.

Site Selection: Based on a literature scan and expert advice, we selected eight U.S. states (Exhibit 1) whose APCDs are characterized by diverse approaches and contexts. The APCDs, which have been in operation for four to 17 years, were also selected to highlight relatively advanced uses of data. We excluded some states that are the subject of other research (Massachusetts, Rhode Island), that only recently implemented an APCD (Delaware), or that have a unique policy context (all-payer rate setting in Maryland). The states we chose represent New England, the Midwest, the South, and the West.

Contextual Environments: Study states represent a variety of markets and public policies. Collectively, they tend to perform better than average among all states on rankings of health system performance (median 12; range 3 to 47), small group insurance market competition (median 16; range 1 to 36), and ensuring that information is available to the public (median 13; range 1 to 37), as well as on an assessment of health care price transparency laws (median grade C; range A to F). All but Wisconsin have expanded Medicaid under the Affordable Care Act. These factors suggest that most study states are amenable to adopting health reforms and policies to promote health system improvement, which may have influenced the creation of an APCD.

State Ranking or Grade	Ark.	Colo.	Maine	Minn.	N.H.	Utah	Va.	Wisc.	Average	Median
Health System Performance (1)	47	9	12	3	10	11	29	12	17	12
Insurance Market Competition (2)	26	12	17	14	32	36	5	1	18	16
Ensuring Data Is Available for Use (3)	17	1	4	10	37	11	14	35	16	13
Healthcare Price Transparency (4)	D	B	A	C	A	D	C	F	C	C
Expanded Medicaid Under ACA (5)	Y	Y	Y	Y	Y	Y	Y	N	Y	Y

Sources: (1) The Commonwealth Fund, *Scorecard on State Health System Performance* (2019) (1=highest performing state). (2) Kaiser Family Foundation, State Health Facts: Small Group Insurance Market Competition, Rank on Herfindahl-Hirschman Index (1=most competitive market). (3) Center for Data Innovation, *The Best States for Data Innovation* (2017). The rank is a composite of 9 indicators (1=best at making data available for public use). (4) Catalyst for Payment Reform and the Source on Healthcare Price and Competition, "2020 Report Card on State Price Transparency Laws," 2020. (5) The Commonwealth Fund, *Medicaid Expansion Status*, 2019.

APPENDIX EXHIBIT A

STATE	DATA RELEASES						USERS OF APCD DATA OR ANALYSES										
	Public			Fee-Based			Government						External				
	Consumer Price Transparency Website	Research Reports/Snapshots	Public Use Files (Deidentified)	Standard Analytic Reports/Tables	Custom Reports/Analysis/Data Mart	Research Datasets	State and Local Health Agencies	State Insurance Agency	State Medicaid Agency	State Employee Benefit Plan	State Attorney General	State Legislature	Consumers	Payers and Providers	Purchasers/Stakeholder Coalitions	Consultants/Brokers/Vendors	External Researchers
Arkansas	*	X			X	X	X	X	X	X		X	X		X	X	X
Colorado	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Maine	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Minnesota		X	X				X					X					
New Hampshire	X	X	X			X	X	X	X		X	X	X	X			X
Utah	*	X			X	X	X	X	X			X	X	X	X	X	X
Virginia	*	X		X	X	X	X	X	X	X		X	X	X	X		X
Wisconsin	*	X		X	X		X		X	X				X	X		X
COUNT	**3**	**8**	**4**	**4**	**6**	**6**	**8**	**6**	**7**	**5**	**2**	**7**	**6**	**6**	**6**	**4**	**7**

Source: Author's analysis. * Notes on Consumer Price Transparency: Arkansas pricing data are available from a third party (mymedicalshopper.com); Utah's website is under development; Virginia publishes median prices by care setting only (not by provider); Wisconsin recently discontinued its consumer medical shopping website.

APPENDIX EXHIBIT B

Topic	Example Findings of Research and Evaluation Using APCD Data
Hospital Price Variation	Staff of the Federal Trade Commission used Colorado APCD data to analyze variation in complexity-adjusted hospital prices paid by commercial health insurers for five procedures. They uncovered significant variation in the prices paid by different insurers for the same service in the same hospital, and even greater variation in prices across hospitals. The researchers estimated that insurers would spend 10 percent to 20 percent less for these procedures if they paid the lowest price that each hospital received.[50]
Effect of Medicaid Expansion	Using data from the Colorado and Utah APCDs, researchers compared the experiences of Medicaid beneficiaries in Colorado, which expanded Medicaid under the Affordable Care Act, and Utah, which did not. They found that beneficiaries in Colorado gained an additional two months of coverage and were 16 percentage points less likely to experience a coverage disruption in a given year compared to beneficiaries in Utah.[51] During this period, new mothers in Utah were more likely to lose their Medicaid coverage and they had fewer outpatient visits paid by Medicaid during the six months after childbirth compared to new mothers in Colorado.[52]
Coverage of Preventive Care	Researchers examined Maine APCD data for commercially insured and Medicare beneficiaries aged 50 to 75 before and after passage of the Affordable Care Act, which eliminated patient cost-sharing for preventive care. This change in coverage reduced median out-of-pocket payments by $94 in rural areas and $63 in urban areas, which led to a 40 percent relative reduction in the disparity in colonoscopy rates between urban and rural areas.[53]
Opioid Use	Using the Virginia APCD, researchers found that new long-term opioid prescription-filling behavior is common after orthopedic surgical procedures in patients who were not taking opioids preoperatively.[54] Research using New Hampshire APCD data found that, among adults with office visits for noncancer low-back pain, those who visited a chiropractor were 55 percent less likely to fill a prescription for an opioid analgesic compared with those who did not receive chiropractic services.[55]
Clinical Cost and Outcomes	Researchers used data from the Maine APCD to examine the cost and outcomes of total hip replacement. They found that newer muscle-sparing and minimally invasive surgical techniques were more effective than traditional methods and can reduce costs in combination with centralization or regionalization of services.[56]
Social Service Interventions	Analysis of medically tailored meal delivery using data from the Colorado APCD showed reductions of 13 percent in 30-day hospital readmissions and 24 percent in total medical costs for those with three chronic conditions.[57]
Use of Telemedicine	Using Minnesota APCD data, researchers found that telemedicine visits increased more than sevenfold from 2010 to 2015. In metropolitan areas, telemedicine visits were primarily direct-to-consumer services provided by midlevel providers and covered by commercial insurance. In nonmetropolitan areas, telemedicine was used primarily for services delivered by physicians to publicly insured populations.[58]

NOTES

1. APCD Council, Interactive State Report Map, accessed May 1, 2020.
2. APCD Council, APCD Showcase Case Studies (University of New Hampshire, n.d.).
3. Funding was provided by the Robert Wood Johnson Foundation; see: Network for Regional Healthcare Improvement, "Healthcare Affordability: Data Is the Spark, Collaboration Is the Fuel," Nov. 8, 2018.
4. For example, the analysis showed that Colorado could save $141 million annually if total costs were reduced to the multistate average; see: Center for Improving Value in Health Care, "Colorado's Health Care Costs Continue to Rise Above Other States (CIVHC, Nov. 8, 2018).
5. Utah's reports were disseminated by the Utah Partnership for Value-Driven Healthcare, which offered clinics practical guidance on how to use the information for improvement.
6. Minnesota Department of Health, *Novel MDH Study Yields First Statewide Estimate of Potentially Preventable Health Care Events* (MDH, July 23, 2015).
7. John N. Mafi et al., "Low-Cost, High-Volume Health Services Contribute the Most to Unnecessary Health Spending," *Health Affairs* 36, no. 10 (2017): 1701–4.
8. For example, the state of Virginia created a task force of employers to act on the data as part of an initiative led by the Virginia Center for Health Innovation in collaboration with health systems and networks; see: Virginia Center for Health Innovation, *Employer Task Force Launched to Focus on Reducing Low-Value Health Services* (VCHI, July 9, 2019); Virginia Center for Health Innovation, Virginia Receives a $2.2M Grant to Tackle the Overuse of Unnecessary Health Care (VCHI, March 13, 2019).
9. Center for Improving Value in Health Care, *HB 19-1174 Out-of-Network Bill: Colorado All Payer Claims Database Frequently Asked Questions* (CIVHC, Feb. 2020).
10. Julia Lerche and Ross Winkelman, *Applicability of All-Payer Claims Databases for Rate Review and Other Regulatory Functions* (State Health Reform Assistance Network, June 2014).
11. Many states review insurer premium rate filings to ensure they are adequate to meet the need for services and are not unfairly discriminatory in application. Colorado recently enacted legislation to include affordability as a criterion in rate reviews, although its implementation has been delayed during the COVID-19 pandemic.
12. See National Conference of State Legislatures, *Transparency of Health Costs: State Actions* (NCSL, n.d.). The state price transparency websites described here should not be conflated with a recent federal regulation requiring hospitals to post their billed charges, or with President Trump's Executive Order (not yet implemented) that would require hospitals to disclose their negotiated payment rates — a step that the health care industry opposes.
13. Bundled prices for episodes of care are reported for a subset of procedures on these websites. For example, the Colorado Shop-for-Care website reports episode prices for 22 relatively expensive procedures while reporting facility-only prices for imaging procedures; the CompareMaine website reports on episodes of care for 12 surgical procedures.
14. In response to a legislative mandate, Utah's state auditor is developing a transparency website using data from the state's APCD. The Wisconsin Health Information Organization recently discontinued its consumer shopping website due to lack of use and loss of state funding. The group continues to publish ratings of the quality and efficiency of primary care practices — an application that is more aligned with the organization's future direction.

15. Zach Y. Brown, "Equilibrium Effects of Health Care Price Information," *Review of Economics and Statistics* 101, no. 4 (Oct. 2019): 699–712. In a related analysis, the author estimated that wider uptake of a public website would produce greater "supply-side" effects whereby providers are induced to reduce their prices over time. See: Zach Y. Brown, *An Empirical Model of Price Transparency and Markups in Health Care* (University of Michigan, 2018).

16. The effects of a public website may differ from the effects of employers' price transparency tools. Studies of the latter generally find that payments are lower for some services received by those who used a price comparison tool compared to those who did not. However, few people used the tools and there was no observed reduction in overall spending in the time periods measured (which may not have been long enough to detect supply-side effects on prices). See: Christopher Whaley et al., "Association Between Availability of Health Service Prices and Payments for These Services," *JAMA* 312, no. 16 (2014): 1670–76; Sunita Desai et al., "Association Between Availability of a Price Transparency Tool and Outpatient Spending," *JAMA* 315, no. 17 (2016): 1874–81; Anna D. Sinaiko, Karen E. Joynt, and Meredith B. Rosenthal, "Association Between Viewing Health Care Price Information and Choice of Health Care Facility," *JAMA Internal Medicine* 176, no. 12 (Dec. 2016): 1868–70; Sunita Desai et al., "Offering a Price Transparency Tool Did Not Reduce Overall Spending Among California Public Employees and Retirees," *Health Affairs* 36, no. 8 (Aug. 2017): 1401–7.

17. Judith H. Hibbard, Jean Stockard, and Martin Tusler, "Hospital Performance Reports: Impact on Quality, Market Share, and Reputation," *Health Affairs* 24, no. 4 (2005): 1150–60.

18. Ateev Mehrotra, Michael E. Chernew, and Anna D. Sinaiko, "Promise and Reality of Price Transparency," *New England Journal of Medicine* 378, no. 14 (April 5, 2018): 1348-54; David Blumenthal, Lovisa Gustafsson, and Shanoor Seervai, "Price Transparency in Health Care Is Coming to the U.S. — But Will It Matter?" *Harvard Business Review* (July 3, 2019).

19. David Cutler and Leemore Dafny, "Designing Transparency Systems for Medical Care Prices," *New England Journal of Medicine* 364, no. 10 (2011): 894-5; D. Andrew Austin and Jane G. Gravelle, *CRS Report for Congress: Does Price Transparency Improve Market Efficiency? Implications of Empirical Evidence in Other Markets for the Health Sector* (Congressional Research Service, April 29, 2008).

20. Amanda Frost and David Newman, *Spending on Shoppable Services in Health Care* (Health Care Cost Institute, 2016); Ateev Mehrotra et al., "Americans Support Price Shopping for Health Care, But Few Actually Seek Out Price Information," *Health Affairs* 36, no. 8 (2017): 1392–1400.

21. Ateev Mehrotra et al., "Consumers' and Providers' Responses to Public Cost Reports, and How to Raise the Likelihood of Achieving Desired Results," *Health Affairs* 31, no. 4 (2012): 843–51; Lovisa Gustafsson and Shawn Bishop, *Hospital Price Transparency: Making It Useful for Patients* (The Commonwealth Fund, Feb. 12, 2019).

22. In 2010, based in part on the cost of procedures revealed by the HealthCost website, the health insurer Anthem engaged in hardline negotiations with a high-cost hospital. Media attention to price variations reportedly led to public and employer support for Anthem's position, leading the hospital to agree to a reduction in its rates. See: Ha Tu and Rebecca Gourevitch, *Moving Markets: Lessons from New Hampshire's Health Care Price Transparency Experiment* (California Health Care Foundation, April 7, 2014).

23. Zach Y. Brown, "Equilibrium Effects of Health Care Price Information," *Review of Economics and Statistics* (Sept. 2019).

24. Chapin White and Christopher Whaley, *Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely: Findings from an Employer-Led Transparency Initiative* (RAND Corporation, 2019).

25. Center for Improving Value in Health Care, *Regional Price Information as a Percent of Medicare Now Available* (CIVHC, Sept. 9, 2019).

26. Colorado Health Institute, *Peak Health Alliance: Summit in Sight* (CHI, Nov. 11, 2019). Colorado instituted a state-based reinsurance program for the individual insurance market in 2020. Taking into account the effect of reinsurance, the total premium savings for Summit County residents purchasing Peak Health Alliance plans amounted to 39 percent to 47 percent; see: Colorado Department of Regulatory Agencies, *Summit County Residents' Individual Health Insurance Plans to See up to 47% Decrease in 2020 over 2019 Plans*.

27. For example, the New Hampshire Health Web Reporting and Query System included a Healthcare Claims Indicator Report Module that drew data from the APCD for officials to use in community health needs assessments; see: Association of State and Territorial Health Officers, *Case Study: New Hampshire's All-Payer Claims Database* (ASTHO, n.d.).

28. Tanya Bernstein and Mary Jo Condon, *Fighting COVID — Using Claims Data for Tracking, Insights and Directing State Responses* (Freedman Healthcare, July 22, 2020).

29. For example, see: Center for Improving Value in Health Care, *Potential Impact of COVID-19 Temporary Cessation of Elective Procedures* (CIVHC, July 22, 2020); Utah Office of Health Care Statistics, *Preliminary COVID-19 Healthcare Trends: A Snapshot from Utah's All Payer Claims Database* (OHCS, Aug. 25, 2020).

30. For example, see: State Health Access Data Assistance Center, *Evaluation of the Minnesota Accountable Health Model: Final Report* (Minnesota Department of Human Services, Sept. 2017).

31. Maria de Jesus Diaz-Perez et al., "Producing Comparable Cost and Quality Results from All-Payer Claims Databases," *American Journal of Managed Care* 25, no. 5 (May 1, 2019): e138-e144.

32. For example: University of Colorado researchers sponsor bimonthly APCD user group meetings, in collaboration with the Center for Improving Value in Health Care, at which stakeholders can get updates about the APCD and share their experiences on how to make effective use of the data.

33. David Schleifer, Rebecca Silliman, and Chloe Rinehart, *Still Searching: How People Use Health Care Price Information in the United States* (Public Agenda, April 6, 2017).

34. New Hampshire officials report that most of the new traffic to the HealthCost website is from organic Google searches on health insurance questions, for which the website offers frequently asked questions. The website often appears as the top search response and visitors often then look to compare price estimates for medical procedures.

35. Roslyn Murray, Suzanne Delbanco, and Jaime S. King, *Promoting Health Care Transparency via State Legislative Efforts* (JAMA Health Forum, March 9, 2020).

36. Gerald F. Riley, "Administrative and Claims Records as Sources of Health Care Cost Data," *Medical Care* 47, no. 7 Supplement 1 (2009): S51-S55.

37. A summary of state approaches to assure APCD credibility can be found in: California Office of Statewide Health Planning and Development, *Health Care Payments Data Program: Report to the Legislature* (OSHPD, March 9, 2020): 139.

38. National Association of Health Data Organizations and the APCD Council, *Confidentiality of Substance Use Disorder (SUD) Patient Records: Final Rule Guidance for State Health Data Organizations* (NAHDO, 2017).

39. United States Supreme Court, *Gobeille v. Liberty Mutual Insurance Co., Inc*.

40. States can require data submission from the third-party administrators (TPAs) of self-insured public employers not subject to ERISA including cities, counties, schools, and state employee benefit plans. Several APCDs collaborate with employer groups to encourage voluntary submission of claims data by the TPAs of ERISA plans.

41. Massachusetts projects statewide spending using aggregate trend data reported by insurers, which is available sooner than claims data. This approach is workable because a small number of dominant insurers also serve as third-party administrators for many self-insured plans in the state; see: Lisa Waugh and Douglas McCarthy, *How the Massachusetts Health Policy Commission Is Fostering a Statewide Commitment to Contain Health Care Spending Growth* (Commonwealth Fund, March 2020).

42. One such proposal was included in the *Lower Health Care Costs Act of 2019* (S. 1895) approved by the Senate Health, Education, and Labor Committee on June 26, 2019; it has not received further consideration in Congress. For an in-depth analysis of the potential value of a national APCD, see: Matthew Fiedler and Christen Linke Young, *Federal Policy Options to Realize the Potential of APCDs* (USC-Brookings Schaeffer Initiative for Health Policy, Oct. 2020).

43. Minnesota Department of Health, Minnesota Health Care Spending: 2015 and 2016 Estimates and Ten-Year Projections (Report to the Minnesota Legislature, Feb. 2019).

44. Katherine L. Gudiksen, Samuel M. Chang, and Jaime S. King, *The Secret of Health Care Prices: Why Transparency Is in the Public Interest* (California Health Care Foundation, July 2019).

45. For example, officials in New Hampshire, the first state to develop a medical shopping website, shared its methodology and computer code with counterparts in Maine.

46. For example, the Minnesota legislature created the state's APCD to report on provider performance but repurposed it for research due to industry and privacy concerns. Purchasers say they appreciate the expertise the state has developed and hope to see broader use to support value-based purchasing.

47. For example, the Virginia Center for Health Innovation, a collaborative of public and private stakeholders that seeks to accelerate the adoption of value-driven care, partners with Virginia Health Information to fund analyses of low-value care and apply the results for improvement. Similarly, the Maine Health Data Organization collaborates with the Maine Health Quality Forum to develop and operate its CompareMaine consumer shopping website. These symbiotic relationships allows each organization to focus and excel in its area of expertise.

48. Several states offer convenings with data submitters to discuss and identify opportunities to improve data submission. Based on feedback from providers, Colorado's Center for Improving Value in Health Care established a process for previewing transparency data with stakeholders before releasing it to the public.

49. Mathew B. Miles and A. Michael Huberman, "Cross-Case Displays: Exploring and Describing," Chapter 7 in: *Qualitative Data Analysis*, 2nd Ed. (Sage Publications, 1994).

50. Matthew Panhans, Ted Rosenbaum, and Nathan E. Wilson, "Prices for Medical Services Vary Within Hospitals, but Vary More Across Them," *Medical Care Research and Review*, June 19, 2019.

51. Sarah H. Gordon et al., "The Impact of Medicaid Expansion on Continuous Enrollment: A Two-State Analysis," *Journal of General Internal Medicine* 34, no. 9 (Sept. 2019): 1919–24.

52. Sarah H. Gordon et al., "Effects of Medicaid Expansion on Postpartum Coverage and Outpatient Utilization," *Health Affairs* 39, no. 1 (Jan. 2020): 77–84.

53. Annie Haakenstad et al., "Rural-Urban Disparities in Colonoscopies After the Elimination of Patient Cost-Sharing by the Affordable Care Act," *Preventive Medicine* 129 (Dec. 2019): 105877.

54. Noah J. Orfield, "New Long-Term Opioid Prescription-Filling Behavior Arising in the 15 Months After Orthopaedic Surgery," *Journal of Bone and Joint Surgery* 102, no. 4 (Feb. 19, 2020): 332–9.

55. James M. Whedon et al., "Association Between Utilization of Chiropractic Services for Treatment of Low-Back Pain and Use of Prescription Opioids," *Journal of Alternative and Complementary Medicine* 24, no. 6 (June 1, 2018): 552-6.

56. Jonathan P. Goldstein et al., "The Cost and Outcome Effectiveness of Total Hip Replacement: Technique Choice and Volume-Output Effects Matter," *Applied Health Economics and Health Policy* 14, no. 6 (Dec. 2016): 703–18.

57. Project Angel Heart, *Small Intervention, Big Impact: Health Care Cost Reductions Related to Medically Tailored Nutrition* (PAH, June 2018).

58. Yu Jiani et al., "Population-Level Estimates of Telemedicine Service Provision Using an All-Payer Claims Database," *Health Affairs* 37, no. 12 (Dec. 2018): 1931-9.

ABOUT THE AUTHOR

Douglas McCarthy, M.B.A., is senior research advisor for the Commonwealth Fund and president of Issues Research, Inc., in Durango, Colorado. He has supported the Commonwealth Fund's work on a high-performance health system since 2002 through the development of chartbooks and scorecards on health system performance and case study research on promising practices and innovations in health care delivery. Mr. McCarthy's 30-year career has spanned roles in government, corporate, and nonprofit organizations, including the Institute for Healthcare Improvement and UnitedHealth Group's Center for Health Care Policy and Evaluation. He was a public policy fellow at the University of Minnesota's Humphrey School of Public Affairs and a leadership fellow of the Denver-based Regional Institute for Health and Environmental Leadership. Mr. McCarthy serves on the boards of Colorado's Center for Improving Value in Health Care and the Peak Health Alliance.

Editorial support was provided by Paul Berk.

ACKNOWLEDGMENTS

The author thanks Lovisa Gustafsson, vice president of the Controlling Health Care Costs program at the Commonwealth Fund, for guidance on the project, and the Communications staff for editing and production. The author is grateful to the following organizations and individuals for sharing information and insights for the reports:

Arkansas Center for Health Improvement: Joseph Thompson, M.D., president & CEO; and Craig Wilson, J.D., director of Health Policy

Arkansas Insurance Department: Allen Kerr, former commissioner; and Lesia Carter, assistant director and APCD liaison

Center for Improving Value in Health Care (Colorado): Ana English, CEO & president; Cari Frank, vice president of Communication and Marketing; and Kristin Paulson, J.D., vice president of Innovation and Compliance

Colorado Department of Health Care Policy & Financing: John Bartholomew, chief financial officer

Freedman Healthcare: Linda Green, executive vice president; and Jonathan Mathieu, Ph.D., senior consultant

Maine Health Data Organization: Karynlee Harrington, executive director

Minnesota Department of Health: Stefan Gildemeister, Ph.D., director, Health Economics Program; and Karl Fernstrom, manager, Health Data Services Center

Minnesota Health Action Group: Deb Krause, vice president

Minnesota Legislature: Scott Jensen, state senator

National Association of Health Data Organizations: Norman Thurston, Ph.D., executive director; and Denise Love, consultant

New Hampshire Department of Health and Human Services: Mary Fields, CHIS project manager and business systems analyst

New Hampshire Insurance Department: Tyler Brannen, Ph.D., director of Health Economics; and Maureen Mustard, director of Healthcare Analytics

University of New Hampshire, Institute for Health Policy and Practice: Jo Porter, director and cochair, APCD Council; and Ashley Wilder, project director

Utah Department of Health, Office of Health Care Statistics: Carl Letamendi, Ph.D., bureau director; and Sterling Petersen, analytics lead

Virginia Health Information: Michael Lundberg, CEO; and Kyle Russell, director of Strategy and Analytics

Wisconsin Health Information Organization: Dana Richardson, CEO; and Jim Auron, director of Customer Solutions

For more information about this case study, please contact:
Douglas McCarthy
Senior Research Advisor
The Commonwealth Fund
dm@cmwf.org

See the first brief in this series for insights and lessons learned about how states establish APCDs and equip them to meet their intended uses.

See the companion state profiles for more information on each state's APCD.

The Commonwealth Fund

Affordable, quality health care. For everyone.

About the Commonwealth Fund
The mission of the Commonwealth Fund is to promote a high-performing health care system that achieves better access, improved quality, and greater efficiency, particularly for society's most vulnerable, including low-income people, the uninsured, and people of color. Support for this research was provided by the Commonwealth Fund. The views presented here are those of the author and not necessarily those of the Commonwealth Fund or its directors, officers, or staff.