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The Secret of Health Care Prices:
Why Transparency Is in the Public Interest

JULY 2019

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Contents

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Executive Summary

In 2018, California lawmakers sought to design and create a state Health Care Cost Transparency Database, an all-payer claims database (APCD), to collect information on the cost of health care in the state. The law tasks the Office of Statewide Health Planning and Development (OSHPD) with designing a database to best fit the needs of the state. Of specific interest for this project, California's APCD may collect information about amounts paid for health care services, including data about negotiated rates between insurance plans and providers. Many health care providers and payers seek to maintain the confidentiality of these paid amounts as trade secrets, claiming their secrecy provides a competitive advantage. Yet the public has begun to demand greater price transparency in health care. This report examines the legal and economic implications of collecting and releasing these paid amounts, reviews the practices of existing APCDs, and concludes with recommendations for California's policymakers about best practices to ensure the effective use of increased transparency to control costs and increase access to health care services.

Part I of this report reviews trade secret statutes and case law regarding the protection of negotiated prices as trade secrets. While some negotiated prices may constitute trade secrets in some circumstances, trade secret law is extremely fact specific, and no court has definitively ruled on the issue of whether negotiated rates can be protected as trade secrets. Furthermore, even if a court finds that certain price information constitutes a trade secret, that protection is not absolute. State freedom of information acts and free speech protections can allow disclosure of trade secrets when disclosure of that information is in the public interest. Specifically, Part I demonstrates that California can allow or require disclosure of information that is in the public interest, including negotiated rates for health care services, as long as the state articulates the conditions and policies for disclosure at the time of data collection and follows state and federal patient privacy statutes.

Part II of the report presents economic evidence about when disclosing negotiated rates is in the public interest. Part II begins by explaining theories forwarded by economists and antitrust enforcers about how disclosure of negotiated rates in health care markets could facilitate price collusion and drive price increases. The report then reviews evidence demonstrating that in rare circumstances, in other industries and in other countries, mandated transparency reports have allowed tacit collusion. To date, however, no state with an existing APCD has experienced competitive harm, and, in fact, a decade of public disclosure of negotiated rates in New Hampshire resulted in increased competition and reduced prices for health care services.[1] Part II concludes that while disclosure of negotiated health care rates in some markets could theoretically result in price collusion and increased prices, concerns over disclosure of negotiated rates for health care services in California are likely overstated and can be mitigated by proper safeguards. Furthermore, this part of the paper discusses why, with appropriate safeguards, the procompetitive effects of APCDs are likely to outweigh any anticompetitive harms.

Part III compiles and compares the current and planned price dissemination practices for 18 states with mandatory APCD data collection programs. The variation in legislation and regulation governing APCD data release is discussed, and this information is summarized in a chart that includes collection and disclosure requirements. This research shows that the state has the legal authority to collect and, in many cases, disclose negotiated rates. All states with active APCDs collect information about paid amounts and release reports of aggregated information, but a few states, including Maine and New Hampshire, disclose plan- and provider-specific median paid amounts for the most commonly used health care services on publicly accessible websites. This part of the report also offers best practices for California based on the experience of other states.

Drawing from this research, Part IV makes the following recommendations for California as the state seeks to create an APCD that furthers the legislative intent of increased transparency in health care pricing:

1. **OSHPD should provide all data submitters with clear information and policies regarding data release prior to data collection.** Data collected from other state agencies may be subject to confidentiality agreements and require amendments to the Knox-Keene Act and California Public Records Act.

2. **OSHPD should create a data release committee and declare that all information submitted to the APCD will be released in accordance with data release guidelines at the discretion of the data release committee.** To avoid any claim of trade secret misappropriation, OSHPD should inform data submitters that decisions regarding confidentiality and data release will be made by the data release committee to avoid the expectation that labeling data as confidential will prevent disclosure of that data.

3. **The data release committee should establish guidelines for data release that weigh competitive effects and public interest.** Specifically, the committee should release data only when the procompetitive effect of the data release or the public interest outweighs the anticompetitive effect.

4. **The data release committee should implement a tiered data release policy, which would base oversight and access to data on the data requested and the nature of the requester.** The committee should review requests for data containing negotiated payment amounts on the basis of the nature of the entity making the request, the justification for the request, the proposed usage of the data, the nature of the information requested, the requesting entity's technical and physical safeguards for maintaining the security of the data files, and whether the entity has misused data or violated prior data use agreements. For example, a tiered data release policy could include these provisions:

   - ***Tier 1:*** *Data release to the public.* OSHPD releases price reports and other consumer- or policy-relevant findings on a publicly available website. Some aggregated and/or anonymized data should also be available to the public.[2]
   - ***Tier 2:*** *Data release to academic or governmental entities.* The committee should presume data requests from academic or governmental agencies to be procompetitive. These requests should be limited to the minimum data sets necessary to conduct the proposed research and subject to a data use agreement (DUA) that would allow only anonymized or aggregated data to be included in published study results without committee approval.
   - ***Tier 3:*** *Data release to private entities or industry participants.* Industry participants and other private entities may request additional data from the APCD. The committee should consider comments from other industry participants and competitors before releasing data. Released data should be the minimum amount needed based on the reason for the request, and the requester should be required to demonstrate why the aggregated and anonymized data are insufficient for the requester's intended use.

   To streamline data review, the committee could consider allowing the committee chair to review Tier 2 requests or Tier 3 requests that do not include negotiated rates. The committee chair could then approve these requests or pass them on to the committee for further review.

5. **The data release committee should establish a data use agreement that provides requirements for accessing data.** The DUA should require that the data be used only for the approved use, that the recipient keep all nonpublic data confidential unless nonconfidentiality is approved by the committee, and that the recipient of the data implement appropriate privacy and encryption protections. The DUA should establish civil monetary penalties for using the data in illegal ways, including misappropriation, intentional and unauthorized data

release, and price-fixing or collusion, and should exclude offending individuals, institutions, and companies from accessing APCD data for up to 10 years or more. The DUA should include procedural guidance for inadvertent data release and require data recipients to indemnify the state of California and OSHPD for any misuse or misappropriation of released APCD data.

6. **OSHPD or its designee should monitor annual claims data for anticompetitive behavior.** OSHPD should look for evidence of tacit collusion or price shadowing, especially in highly concentrated markets, and should remove data from public display if anticompetitive effects are found.

Introduction

In 2018, California lawmakers sought to enhance price transparency by passing Assembly Bill 1810 to create a Health Care Cost Transparency Database. By establishing an all-payer claims database (APCD), the legislature aimed to "provide greater transparency regarding health care costs, and . . . [to use the data] to inform policy decisions regarding the provision of quality health care, reduce disparities, and reduce health care costs . . . [and] to encourage health care service plans, health insurers, and providers to use such data to develop innovative approaches, services, and programs that may have the potential to deliver health care that is both cost effective and responsive to the needs of enrollees, including recognizing the diversity of California and the impact of social determinants of health."[3]

California's Office of Statewide Health Planning and Development (OSHPD), with guidance from the Healthcare Payments Data Program Review Committee, must design data collection and release policies to fulfill the legislature's intent. To assist in that design, this report examines the legal and economic implications of different data release strategies and reviews the current data release practices of existing APCDs to provide recommendations for policymakers. The research in the report shows that the state has the legal authority to collect and, in many cases, disclose negotiated rates. All states with active APCDs collect information about paid amounts and release reports of aggregated information, but a few states, including Maine and New Hampshire, disclose plan- and provider-specific median paid amounts for the most commonly used health care services on publicly accessible websites.

This report is divided into three parts, which can be read independently. Part I reviews trade secret statutes and case law and concludes that although some negotiated prices may constitute trade secrets in some circumstances, not all disclosures of negotiated prices will result in a misappropriation of trade secrets. Specifically, California can allow or require disclosure of information that is in the public interest, including negotiated rates for health care services, as long as the state articulates the conditions and policies for disclosure at the time of data collection and follows state and federal patient privacy statutes.

Some economists and antitrust enforcers, however, have theorized that disclosure of negotiated rates in health care markets could facilitate price collusion and drive price increases. Part II reviews these theories and the related evidence. To date, no state with an existing APCD has experienced competitive harm. In fact, a decade of public disclosure of negotiated rates in New Hampshire resulted in increased competition and reduced prices for health care services in that state.[4] As a result, competitive concerns over disclosure of negotiated rates in California may be overstated, but should still be protected against, especially in highly concentrated provider markets.

Part III of this report compiles and compares the current and planned price dissemination practices for 18 states with mandatory APCD data collection programs. This part of the paper discusses the variation in legislation and regulation governing APCD data release and summarizes the information in a chart that includes collection and disclosure requirements. Finally, Part IV presents recommendations and best practices for California as it designs and implements a Health Care Cost Transparency Database.

I. Legal Protection for Trade Secrets

Trade secret protection is a legal construct designed to benefit society by promoting innovation.[5] Throughout history, trade secret law has protected key business information, such as the Coca-Cola formula and the Google search algorithm, from theft and misappropriation to the detriment of the trade secrets' creators and inventors. Over time, trade secret protections have expanded to protect a much broader set of information, but the exact boundaries of these protections have not been clearly defined.[6] This section discusses state and federal statutes and case law related to the protection of negotiated prices as trade secrets. Trade secret law is highly fact specific, and, to date, no court has definitively held that negotiated rates between health care providers and insurers constitute trade secrets. Furthermore, even if a court finds that certain price information constitutes a trade secret, that protection is not absolute. This part of the report also explains how and when state freedom of information acts and free speech protections allow disclosure of trade secrets in the public interest.

Establishing Trade Secret Protection

Historically, trade secret law primarily arose from common law established in property, tort, and contract law cases.[7] Over time, however, trade secret protections have been codified in both state and federal statutes.

State Trade Secret Law

In 1979, the Uniform Law Commission (ULC) published the Uniform Trade Secrets Act (UTSA) to codify state trade secret protection. As of 2018, every state except New York and North Carolina had adopted some form of the UTSA.[8] According to the definition in the current UTSA, a **trade secret** is "information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (a) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (b) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy."[9]

Many states, however, modified the UTSA, so that trade secret law varies considerably among states.[10] Meaningful variations exist among state laws including in the definition of "trade secret"; what constitutes "reasonable measures" to prevent disclosure; what constitutes "readily ascertainable information"; the applicable statute of limitations; and the amount of damages available for trade secret misappropriation, including the availability of punitive damages.[11] Nonetheless, the foundations of the UTSA remain largely similar.

The UTSA also prohibits the misappropriation of trade secrets, which can occur in several ways. First, an individual can misappropriate a trade secret by acquiring information that the individual knows or has reason to know was obtained by improper means, which include theft, bribery, misrepresentation, breach of a duty to maintain secrecy, or espionage through electronic or other means.[12] Second, an individual can misappropriate a trade secret by (a) disclosing or using a trade secret obtained by improper means; or (b) disclosing or using a trade secret that the individual knew or had reason to know was derived from improper means, acquired under circumstances that gave rise to a duty to maintain the trade secret's secrecy or limit its use, or derived from or through a person who had a duty to maintain the trade secret's secrecy or limit its use.[13] These provisions form the foundations of modern-day trade secret protections. For APCDs and other state databases, therefore, the greatest risk for trade secret misappropriation claims arises when the state disseminates data that it acquired subject to a duty of confidentiality. In the data collection process, therefore, the state should make clear that the data submitter will not be able to assert confidentiality protections for any data submitted to the database.

California Trade Secret Protection

California adopted the California Uniform Trade Secret Act (CUTSA) in 1984 and modified the UTSA in ways that may both broaden and narrow the scope of trade secret protection for negotiated reimbursement

rates between health care providers and insurers. The CUTSA defined a trade secret as follows: "information, including a formula, pattern, compilation, program, device, method, technique or process, that: (a) [d]erives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from disclosure or use; and (b) [i]s the subject of efforts that are reasonable under the circumstances to maintain its secrecy."[14] Notably, the California law deviates from the UTSA's definition of trade secret by not exempting from trade secret protection information that is "readily ascertainable by proper means." This change implies that information could constitute a trade secret even if others could obtain the same information through proper means.[15] As a result, the California law protects a broader swath of information than the UTSA does.

The California law also deviates from the UTSA in the definition of "improper means." The CUTSA states specifically that "reverse engineering or independent derivation alone shall not be considered improper means."[16] Certain forms of reverse engineering or independent derivation may be considered so difficult that information obtained that way is not considered "readily ascertainable", and therefore this information may be offered trade secret protection under the UTSA, but not under the CUTSA. In particular, because California does not consider reverse engineering alone to be "improper means," in situations in which reverse-engineered information is not readily ascertainable, the scope of trade secret protection in California may be narrower than under the UTSA. This distinction may prove relevant to negotiated rates between health care providers and insurers. Specifically, one may not consider a full hospital price list obtained from numerous Explanation of Benefits forms sent to patients to be readily ascertainable; however, if someone actually did create such a list independently, use or disclosure of that list would not be considered a misappropriation of trade secrets.

Federal Trade Secret Protection

In 2016, amid growing fears of international trade secret theft, Congress enacted the Defend Trade Secrets Act of 2016 (DTSA)[17] to fortify perceived weaknesses in some state trade secret protections by crafting a cohesive federal intellectual property policy. The DTSA defines **trade secrets** as "all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically, or in writing if — (A) the owner thereof has taken reasonable measures to keep such information secret; and (B) the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, another person who can obtain economic value from the disclosure or use of the information."[18]

With one exception,[19] the DTSA explicitly states that it does not preempt state trade secret law, but rather serves to make available an alternative venue for trade secret holders to seek remedies for trade secret misappropriation. As a result, the DTSA essentially creates a national minimum standard for what constitutes a trade secret, while states are allowed to adopt broader definitions.

The creation of the DTSA therefore offers plaintiffs the opportunity to shop for both jurisdiction and law in trade secret cases. For instance, plaintiffs in California can bring a claim for misappropriation of trade secrets in federal court for violation of the DTSA, or in state court for violation of the CUTSA.[20] If someone disclosed information that met California's definition of a trade secret but did not meet the DTSA's definition because the information was reasonably ascertainable by proper means, the owner of the trade secret could still file a claim against that person in California, as long as the business or defendant was located there or harm was suffered there.[21] The DTSA shifts the balance of

power to the trade secret owner, who can now choose between federal law and any applicable state laws when deciding where to pursue a case; often, the trade secret owner will select the venue where greater damages are available or more favorable case law applies.

Prices as Trade Secrets

Even a critical reading of the trade secret statutes leaves ambiguity about whether negotiated prices can be trade secrets. While insurers and providers claim there is economic value in negotiated fee schedules and that reasonable measures are taken to maintain their secrecy, the validity of these claims remains largely untested. In fact, the research for this report did not uncover a single case in which a court directly ruled that negotiated payment rates between insurers and providers constitute trade secrets. Nonetheless, the general assumption of confidentiality in negotiated rates may lead courts in future cases to determine that these rates are trade secrets. Trade secret determinations depend heavily on the particular facts in any given case; therefore, even a clear determination in one case that negotiated payment rates between providers and insurers constitute a trade secret would not settle the issue for all future cases.

Courts that have examined this issue indirectly have done little to unmuddy the waters. In certain cases, while not reaching the issue of whether prices constitute a trade secret, courts have been willing to use protective orders to maintain the secrecy of negotiated price information to overcome provider resistance to discovery. For example, in *Children's Hospital v. Blue Cross of California*, Children's Hospital argued that its contracted rates with other health insurance plans were not discoverable because disclosure of these rates would disclose proprietary financial information and trade secrets.[22] The court held that the hospital's concerns could be "handled through appropriate protective orders" (i.e., the information could be submitted under seal) and remanded the case for retrial without conducting an analysis of whether these prices amounted to trade secrets.[23]

Other courts have opined on whether negotiated rates constitute trade secrets but have not made formal determinations because other laws, commonly state public record acts, clearly established a duty to disclose. For instance, the Pennsylvania Supreme Court, in *Com., Dep't of Pub. Welfare v. Eiseman*, expressed doubt that negotiated rates between managed care organizations that administered the state Medicaid program and dental providers met the definition of a trade secret under the UTSA and Pennsylvania's state trade secret law, stating "[i]nitially, we observe that contractual payment rates are not a close fit with the concept of a 'trade secret,' as it is substantially debatable whether such rates are in the nature of a 'formula, drawing, pattern, compilation including a customer list, program, device, method, technique, or process.'"[24] The Pennsylvania Supreme Court, however, held that even if those lists were trade secrets, Pennsylvania's Right to Know Law exempts financial records of public agencies from trade secret protection.[25]

Similarly, the North Carolina Court of Appeals considered whether negotiated prices in public hospital agreements with health maintenance organizations (HMOs) constitute trade secrets in *Wilmington Star-News, Inc. v. New Hanover Regional Medical Center, Inc.*[26] In Wilmington Star, the court noted that, at the time of the opinion in 1997, "[n]o decisions in North Carolina have concluded that a negotiated price list is a trade secret within the meaning of [trade secrets as defined in North Carolina law,] G.S. 66-152(3)."[27] The court then used the six factors listed in the Second Restatement of Torts to consider whether the negotiated pricing lists in the case could be trade secrets.[28] In contrast to the court in *Eiseman*, the court in *Wilmington Star* concluded that "a reasonable trier of fact could conclude that the price lists were trade secrets."[29] Although this conclusion would have been sufficient to have the court consider whether the negotiated price lists constituted trade secrets, the court did not do so, because it held that the North Carolina's Public Records Act required disclosure of the price lists irrespective of their trade secret status.[30]

The case law demonstrates that trade secret protection for negotiated hospital prices remains largely undefined, with many courts deciding these cases on other grounds. As a result, it remains uncertain whether and under what circumstances negotiated rates between providers and insurers constitute trade secrets, and a court's decision will depend largely on the facts of any particular case.

The Duty to Keep Confidential and the Risk of Misappropriation

Furthermore, trade secrets laws do not prohibit the disclosure of all trade secrets; instead, they prohibit the "misappropriation" of trade secrets. The UTSA definition of "misappropriation" includes "disclosure or use of a trade secret of another without express or implied consent by a person who . . . at the time of disclosure or use, knew or had reason to know that his knowledge of the trade secret was . . . acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use."[31] As a result, an entity (such as a state APCD) must not disclose information that it expressly or impliedly agreed to keep confidential. For example, in *Emergency Care Research Inst. v. Guidant Corp.*, a medical device manufacturer, Guidant, argued that a nonprofit health services research company that acquired and published price lists for medical devices from hospitals misappropriated trade secrets by obtaining the confidential prices Guidant charged hospitals.[32] The court held that trade secret protection depended on Guidant's efforts to require hospital purchasers to keep prices confidential.[33]

Contractual agreements or statutory provisions requiring a state APCD to keep information confidential create a duty to do so, which can make disclosure of such information a misappropriation of trade secrets. Even in the absence of direct contractual or statutory language ensuring the confidentiality of particular information, courts have also supported the creation of an "implied duty of confidentiality" when statutory or contractual language suggests such a duty.[34] As a result, state APCDs must be very specific at the time of data collection regarding confidentiality and the specific guidelines for data release.

To avoid claims of misappropriation, California also should take precautions when linking any data from outside sources to the APCD. In certain circumstances, California has already agreed to protect the confidentiality of negotiated rates between health care providers and payers; these rates must be distinguished and kept separate from APCD data submitted to the Office of Statewide Health Planning and Development (OSHPD). Specifically, with respect to rate review information submitted to the California Department of Managed Health Care (DMHC), the Knox-Keene Act states that "[t]he contracted rates between a health care service plan and a provider shall be deemed confidential information that shall not be made public by the department and are exempt from disclosure under the California Public Records Act."[35]

Furthermore, the California Public Records Act (CPRA) contains provisions that keep certain contracts between the Department of Health Care Services and providers of inpatient health care services confidential for one year, except for any portion of the contract that contains the rates of payment, which is kept confidential for four years.[36] For these reasons, California should not directly deposit in the APCD information collected by other agencies or for other purposes, because releasing that information, with its presumption of confidentiality, may risk claims of trade secret misappropriation. Instead OSHPD should directly collect the information, stating clearly how and when data will be released and that confidentiality determinations will be made solely by the data release committee.

Although sections of the Knox-Keene Act and the CPRA allow negotiated rates to be kept confidential, these laws did not have the purpose of promoting price transparency to improve health care markets, so legislators did not consider the procompetitive potential of an APCD when drafting the laws. Even if negotiated rates between providers and insurers constitute a trade secret, trade secret protection is not absolute. States can disclose information gathered by a state entity via the state public records act or if disclosure serves a public purpose.

Public Interest in Prices

State courts have noted that "[t]he UTSA contains no specific exemption of trade secrets from public disclosure laws."[37] As a result, state freedom of information statutes or public records acts can require public access to information otherwise considered a trade secret.[38] In addition, the decisions in *Eiseman* and *Wilmington Starr* demonstrate that states can pass laws to enable state agencies to disclose information that might otherwise be considered a trade secret. As a result, states have begun to specify instances that warrant disclosure of trade secrets either through public records requests or public interest exemptions to trade secret protection.

Currently, California has a public interest exemption to the CPRA that allows the state to refuse to disclose information that the CPRA would ordinarily require be disclosed, if "on the facts of the particular case, the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record."[39] This provision grants the state the ability to refuse to disclose any information submitted when disclosure of the information would harm the public interest. This provision would serve to protect against the kind of competitive harms health care providers, insurers, and antitrust enforcers warn may arise from APCD disclosure of negotiated health care rates.

On the other hand, the CPRA does not include a public interest exemption that would allow the state to disclose otherwise protected information in the name of the public interest. Yet California courts have created such an exemption in instances where the First Amendment interests of the public outweigh the quasi-property rights of the business holding the information. In *O'Grady v. Superior Court*, the court held that that California trade secret law was intended to promote innovation but was not absolute when disclosure of information benefited the public.[40] Specifically, the court held that the reporter's shield law protected a news website that published confidential marketing materials, even if those materials were obtained by an employee who passed trade secrets to the website. The court stated, "It is true that trade secrets law reflects a judgment that providing legal protections for commercial secrets may provide a net public benefit. But the Legislature's general recognition of a property-like right in such information cannot blind courts to the more fundamental judgment, embodied in the state and federal guarantees of expressional freedom, that free and open disclosure of ideas and information serves the public good. When two public interests collide, it is no answer to simply point to one and ignore the other. . . . [W]hatever is given to trade secrets law is taken away from the freedom of speech. In the abstract, at least, it seems plain that where both cannot be accommodated, it is the statutory quasi-property right that must give way, not the deeply rooted constitutional right to share and acquire information."[41] While this case concerns the right of a newspaper to publish information, the case identifies the limits to trade secret protection when disclosure is in the public interest.

In summary, trade secret law is highly fact specific, and courts have not definitively stated that negotiated rates between health care providers and insurers constitute trade secrets. Furthermore, even if a court finds that certain price information constitutes a trade secret, protection of the trade secret is not absolute. States can allow or require disclosure of information in the public interest as long as they articulate the conditions and policies for disclosure at the time of data collection. California has the authority to collect and disclose negotiated rates for health care services as long as the state follows state and federal patient privacy statutes. With that knowledge, California should seek to determine when the public benefit of disclosure of negotiated rates outweighs any anticompetitive harms.

II. Economic Concerns About Transparency for Negotiated Rates

Standard economic theory reasons that price transparency benefits the public interest by allowing consumers to compare prices, by increasing competition, and by lowering overall spending.[42] Following this logic, disclosure of health care prices through an all-payer claims database (APCD) should serve the public interest by improving the market, leading to lower and more uniform prices. Some experts, however, have expressed concern that additional price transparency could lead to price increases in some health care markets.

The Potential for Anticompetitive Pricing

In theory, disclosure of negotiated provider rates in markets with high levels of health care provider concentration[43] and weak consumer response to disclosure of health care pricing data[44] may facilitate provider collusion by enabling a provider receiving a lower rate than a competitor (often a dominant provider) to "shadow price" the higher-cost peer, raising prices and expenditures overall.[45] For example, economists Cutler and Dafny describe a hypothetical situation in which a well-regarded hospital contracts with two insurers and offers a lower price to Insurer 1 because otherwise Insurer 1 would steer patients to a different institution: "If the hospital must publicly reveal both prices, it will be less likely to offer the low price to Insurer 1, because Insurer 2 would then pressure the hospital to lower its price as well."[46] In this case, disclosure of negotiated rates publicly or to a competitor "would create a perverse incentive for the hospital to raise prices (on average), and as a result, its rivals could do the same."[47] Cutler and Dafny acknowledge that the ability to raise prices in response to price transparency requires sufficient market leverage by the buyer (to steer patients) or the supplier (to demand the price increase), but these situations are common in highly concentrated health care markets.

In a companion paper, Sinaiko and Rosenthal also acknowledge the potential for shadow pricing or increased costs following the advent of price transparency, but these authors express doubt that the increased prices would persist over time. The authors note that "[i]n reasonably competitive provider markets, purchasers and health plans should be able to use price information to pressure providers to lower their prices or to improve the efficacy of tiered networks or other similar efforts."[48]

Evidence of Price Increases Following Increased Transparency

Until very recently, little empirical evidence existed on the impact of greater price transparency in health care, so researchers and federal regulators relied on evidence from other markets to predict how price transparency initiatives would affect prices for health care services. Specifically, many experts have cited the experience of Danish antitrust authorities, who in 1993 began publishing invoice prices for concrete because the highly concentrated supplier market allowed companies to charge widely varying prices to buyers that lacked market power.[49] In the year following the disclosures, prices in one region rose 15% to 20% as the concrete sellers raised the prices to the highest rate for all buyers.

More recently, economists Byrne and de Roos have described how a government website that posted daily prices for gasoline allowed Australian gas companies to engage in "tacit collusion" by signaling future price increases and raising prices in concert without direct communication.[50] Over a period of six years, a dominant firm, BP, used price signaling to "coordinate market prices, soften price competition, and enhance retail margins."[51] Rather than offering a cautionary example, however, Byrne and de Roos argue that their "study highlights the value of detailed data for informing antitrust investigations into conduct." While transparency may offer a chance for price collaboration in specific markets, transparency may also be the best tool for identifying and validating suspected anticompetitive conduct that might otherwise go unnoticed. Similarly, in discussing price transparency the Maine

Health Data Organization (MDHO) acknowledged both a concern about concerted price increases and also the potential for the state's APCD to identify price shadowing, stating that "[e]ven without overt price-fixing or illegal conduct price transparency may lead to price uniformity at the highest level. . . . Ironically, [though] any tacit collusion would likely appear in the MHDO data."[52]

These examples demonstrate the potential for price transparency to be exploited by oligopolistic suppliers in order to increase prices.[53] These examples, however, are atypical of health care price transparency efforts and may have minimal correlation with US health care markets. First, the quality of health care services, unlike concrete and gasoline, is highly differentiated, and providers compete on dimensions other than cost. Second, health care consumers often have strong loyalty to their existing providers and are less price sensitive. Third, the costs of health care services are typically negotiated on an annual basis, rather than daily (like gasoline) or at the time of the sale (like concrete), making rival price matching or tacit collusion much more difficult. Fourth, annual health care price negotiations are often informed by a range of factors, including experience of the group, changes in coverage benefits, and legal changes making the kind of direct signaling done by BP in the Australian example much more difficult to detect and mimic. Nonetheless, APCDs that release negotiated health care claims data should weigh these concerns about price collusion and overall rate increases in their data release decisions.

Federal Trade Commission and Department of Justice Antitrust Enforcement Policy Statement 6

In Statement 6 of the 1996 Antitrust Enforcement Policy in Health Care, the Federal Trade Commission (FTC) and the Department of Justice (DOJ) ("the Agencies") provided guidance on the use of surveys to allow health care providers to exchange price data.[54] The Agencies immediately acknowledged the "significant benefits" of such surveys for both health care consumers and providers, who "can use information derived from price and compensation surveys to price their services more competitively."[55] The Agencies also noted that the price survey information could help purchasers make more informed decisions when buying health care services.[56]

The Antitrust Safety Zone

The Agencies did, however, express some concern that "[w]ithout appropriate safeguards" price information exchanges among competing providers could facilitate collusion or reduce price competition.[57] As a result, the Agencies identified an "antitrust safety zone" and agreed not to challenge the exchange of price and cost information among competing health care providers "absent extraordinary circumstances," if the following conditions were met:

- The survey was managed by a third party (e.g., a purchaser, a government agency, or an academic institution);
- The data provided were more than three months old; and
- At least five providers reported data on each disseminated statistic, no individual provider's data represented more than 25% of each statistic, and disclosed information was sufficiently aggregated to avoid identification of any particular provider.[58]

The Agencies stated that they designed these conditions to ensure that the exchange of cost or price data would not be used by competing providers to engage in price collusion. The conditions "represent a careful balancing of a provider's individual interest in obtaining information useful in adjusting the prices it charges . . . against the risk that the exchange of such information may permit competing providers to communicate with each other regarding a mutually acceptable level of prices."[59]

Exchanges of information that do not meet these conditions may still be lawful even though the exchanges fall outside of the antitrust safety zone. The Agencies stated that they will evaluate exchanges of price and

cost information that fall outside the safety zone "to determine whether the information exchange may have an anticompetitive effect that outweighs any procompetitive justification for the exchange."[60] For instance, the Agencies noted that "[d]epending on the circumstances, *public, non-provider initiated surveys may not raise competitive concerns*" and may provide information that purchasers can use for procompetitive purposes.[61] Importantly, the Agencies clearly distinguished between exchanges of future prices for provider services, which "are very likely to be anticompetitive,"[62] and exchanges of current or prior prices. Despite the fact that Statement 6 is more than 20 years old and in need of updating to reflect modern health care markets, the statement remains the best guidance state APCDs have to guide their disclosure practices.

The Example of Minnesota

In 2014, Minnesota revised the Minnesota Government Data Practices Act (MGDPA) by reclassifying health plan provider contracts with state agencies as "public data."[63] In response to a request, the FTC's Office of Policy Planning "recognize[d] the laudable goals of the MGDPA, including improving government accountability via increased transparency with respect to the use of public funds in government contracting," but also warned that "greater price transparency in concentrated health care markets may impede, rather than enhance, the ability of the Health Plans in Minnesota to selectively contract with health care providers and to negotiate lower reimbursement rates."[64] Because Minnesota did not host a consumer-facing webpage and did not disclose the information in a consumer-friendly way, few procompetitive effects existed to outweigh the anticompetitive risks. As a result, the FTC urged Minnesota to consider focusing its transparency efforts on the types of information important to consumers, while cautioning against public disclosure of negotiated fee schedules in Minnesota's highly concentrated provider markets.

The Example of California

In contrast to the Minnesota example, the DOJ Antitrust Division supported a database created by the Pacific Business Group on Health, the California Public Employees Retirement System, and the California Health Care Coalition. The database was created to collect claims data from hospitals and provide de-identified hospital rate indexes to member organizations, which would inform employers about how their negotiated prices compared with the average prices. The DOJ concluded that this type of disclosure "is not likely to produce any anticompetitive effects. . . . Rather, the most likely effect of [the database] is that greater information about the relative costs and utilization rates of hospitals in California will lead payors and employers to make more informed decisions when purchasing hospital services."[65]

These examples demonstrate that while acknowledging a risk of tacit collusion from complete transparency of all contracted information in highly concentrated markets, the Agencies often find procompetitive benefits in transparency initiatives and data releases that enable consumers and payers to comparison shop for higher-value health care. State APCDs also often use this balancing of pro- and anticompetitive effects to inform data release decisions.

The Example of Colorado

Colorado requested legal advice to analyze the implications of Statement 6 for the release of negotiated rates by the Center for Improving Value in Health Care (CIVHC), the entity that administers the Colorado APCD.[66] CIVHC's attorney found that "[m]ost reports and analytic data sets generated based on APCD data would fall within the antitrust Safety Zone because they can be designed to meet all three conditions [of Statement 6]."[67] Conditions 1 and 2 are easily satisfied by state APCDs. For their own reporting and data dissemination, APCDs can largely satisfy condition 3 through use of price aggregation, medians, or averages. CIVHC's legal analysis also argues that reports or data sets that fall outside the safe harbor because they fail to sufficiently de-identify the provider "would generally be lawful and are highly unlikely to be challenged by the Agencies because they will have little or no anticompetitive effect and may have substantial procompetitive benefits."[68] This argument is also persuasive in California.

The Role of a Data Release Committee

Concerns regarding provider and price identification arise in highly concentrated markets that do not have sufficient provider numbers to conceal identity and when the requested disclosure includes raw data on provider- and payer-specific pricing information. In these instances, a data release committee can provide valuable analysis and review of the potential pro- and anticompetitive effects of a particular data release request, including receiving input from the Agencies regarding the potential impact. Furthermore, the CIVHC analysis found that APCD reports would be unlikely to cause anticompetitive harms that outweigh procompetitive benefits unless "competitor recipients of the reports used the information to enter into price-fixing agreements."[69] If anticompetitive harms do occur, state action immunity[70] and indemnity clauses in data use agreements will shield state agencies from liability. Overall, state APCDs should be able to issue reports and analysis designed to remain within the safety zone, and then institute policies and guidelines for use by a data release committee in balancing the pro- and anticompetitive implications of releases that fall outside the safety zone.

Evidence of Procompetitive Effects from Disclosure of Negotiated Prices

Overall, the history of data releases by APCDs supports the notion that responsible data release policies can stem anticompetitive harm while harnessing the potential procompetitive benefits of releasing price data, including negotiated reimbursement rates. Recent evidence from some of the oldest APCDs suggests that disclosure of negotiated rates can increase competition and reduce costs.

The Example of New Hampshire

In particular, in 2007 New Hampshire created HealthCost, a publicly accessible website that lists provider- and insurer-specific median amounts paid for common health care services to encourage patients to comparison shop for care. An initial analysis of health care prices in 2009 showed that HealthCost had almost no impact on prices or price variation across providers.[71] Few patients price shopped for care, and many payers had difficulty using the information effectively in negotiations.[72] Nonetheless, over the next decade, HealthCost proved influential in reducing prices.[73]

Specifically, recent economic analysis by Zach Brown found that HealthCost reduced the price of medical imaging procedures in New Hampshire, saving individuals $7.9 million and insurers $36 million over five years.[74] These savings resulted from both a small number of patients choosing lower-cost providers and also a "significant reduction in negotiated prices" as providers lowered their prices to maintain market share.[75] Perhaps most encouragingly, the price decreases were largest in regions with the most highly concentrated markets (those with a Herfindahl-Hirschman Index above the fourth quartile).[76] Brown's study found that "price transparency put the most downward pressure on prices in markets where price cost margins were likely the highest,"[77] suggesting that even patients who do not price shop can benefit from the increased competition from public databases. During the first year HealthCost listed prices, Brown found almost no effect, but prices dropped significantly after three years or longer. This delayed price response likely results from supply-side effects, such as provider price reduction and changes in health plan design, which take longer to materialize because of annual contracting cycles.

In addition to increasing competition for shoppable services like medical imaging, HealthCost highlighted wide geographic variations in provider prices, especially for hospital outpatient departments.[78] As a result, "the balance of plan-provider negotiating power began shifting significantly . . . [as the database] highlight[ed] wide variation in hospital prices."[79] Analysts credit the state APCD for providing evidence of high-outlier prices at one hospital system in the state. The intense public scrutiny that followed allowed one of the state's largest insurers to demand significantly lower rates with that facility. "As one market observer suggested, 'The sunshine effect [of price transparency] . . . changed the ground rules [of plan-provider contracting]. . . . There's recognition now that contractual negotiations are going to be somewhat in the public eye, in a way they never were in the past.'"[80]

Experts also credit HealthCost with catalyzing the shift to new benefit designs to reward higher-value care, including tiered copayments.[81] In response to the tiered copayments, many hospitals offered laboratory services at facilities with lower pricing structures than the hospitals' outpatient departments and negotiated lower payment rates for some services to qualify at the lowest cost tier. Perhaps most importantly, public price transparency has "helped inject competition into the rural critical-access hospital market. These hospitals have long held geographic monopolies, and until the new benefit designs incentivized consumers to travel to minimize out-of-pocket costs, there had been little reason for the hospitals to compete on price."[82]

The Example of Maine

While experts have most carefully studied the results from New Hampshire's APCD, the state's experience is consistent with results in other states. According to Karynlee Harrington, director of the Maine Health Data Organization (MHDO), Maine has released raw claims data with negotiated rates to numerous stakeholders, including competitors, for more than 10 years.[83] MDHO reports that "[t]o date, there is no evidence that the release of MHDO claims data has resulted in an anticompetitive market. In fact, quite the opposite, . . . transparency is what fosters a competitive market."[84]

Increased Price Competition

Overall, this research suggests that although theoretically providers may be able to use price transparency to leverage competitors' negotiated rates and demand higher reimbursement rates, that concern has not materialized in the health care context. Rather, such transparency-driven price collusion has occurred only in isolated incidents in very different foreign markets. The extensive and detailed research on prices in New Hampshire, however, shows that transparency may be one of the few meaningful ways to increase price competition in these areas. Therefore, California should develop guidelines for public release of insurer- and provider-specific rates, with appropriate limitations, monitoring, and penalties for misuse.

III. Collection and Dissemination Policies of States with Mandatory APCD Programs

State all-payer claims databases (APCDs) vary in data collection and release procedures.[85] Generally, states have combated trade secret and anticompetitive concerns through strict data release procedures that limit the scope of data disclosures. Specifically, states have employed data release agreements and data release committees to analyze and protect confidential information. As explained in Parts I and II of this report, the risk of misappropriation of trade secrets is minimal for states that have clear release policies and, to date, release of data from an APCD has not been shown to increase health care prices. To assist California in designing an APCD that maximizes the procompetitive effects of price transparency, this paper offers recommendations for best practices based on analysis of the current practices of 18 states with mandatory APCD data collection programs.[86]

Financial Information Commonly Collected

State APCDs collect many data elements relating to price and payment (see Table 1, page 16). Many states collect data based on the common data layout (CDL) developed by the APCD Council.[87] Uniformity in state data collection, including use of the CDL, may minimize the administrative burden on data submitters with claims data from multiple states. California should consider adopting similar collection practices as a baseline for uniformity, and then expanding upon the CDL baseline as needed. Many state APCDs collect more financial data elements than they release.[88] Among these data elements, all state APCDs except

Table 1. Financial Data Most Commonly Collected by APCDs

	AR	CO	CT	DE	HI	ME	MD	MA	MN	NH	OR	RI	UT	VT	WA
Paid amount (plan)	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Allowed amount	✔		✔		✔		✔	✔		✔	✔				
Capitation / Prepaid amount (fee-for-service equivalent amount)	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Charge amount	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cost sharing (copay, coinsurance, deductible)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Dispensing fee amount	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Ingredient cost / List price	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Postage amount (for pharmacy)	✔	✔	✔	✔	✔	✔		✔		✔		✔	✔	✔	✔

Notes: This table includes financial information collected by at least three-quarters of state APCDs. The table excludes Florida, Kansas, and New York because those states do not have a data submission manual available online.

for those in Minnesota and Maryland collect and release the following five elements:

1. **Paid amount.** The amount the insurer or health plan paid the provider (in addition, nine states release allowed amount: the maximum amount the insurer would pay for that service)
2. **Charge amount.** The total charges billed for the service
3. **Cost sharing of the consumer.** The amount of copay, coinsurance, and deductible the consumer paid
4. **Dispensing fee amount.** The amount charged for dispensing a prescription
5. **Ingredient cost / list price.** The amount charged for the drug that was dispensed

Public Release of Data

While APCD data collection is relatively uniform, states vary in their data release policies. Most states provide access to APCD data through a price transparency website or online data sets. Publicly available information typically includes aggregated price information by service and zip code. Maine and New Hampshire release the most comprehensive information on public websites, including median payment and estimated total cost, respectively, by procedure, insurance carrier, provider, zip code, and plan type (individual and group). Washington publicly releases the range and average price of a service by zip code.[89] Even Minnesota, despite stating that it will keep all information nonpublic, offers public data sets upon request that include the aggregate amount paid for a specific claim (by the plan and the member) by age group (e.g., under 18 years old), procedure, and zip code.

Such public release of data has significant benefits for health care consumers. The experience of New Hampshire described in Part II of this report demonstrates how a consumer-facing price transparency website can facilitate price reductions. Further, the FTC's response to the Minnesota Government Data Practices Act emphasizes the importance of consumer-facing initiatives that establish procompetitive benefits that surpass the potential for anticompetive harms when creating state health care price transparency tools.[90] Because of the benefits that result from public disclosure, California should consider creating a similar price transparency website that details median prices by payer, provider, service, and zip code, as well as patient out-of-pocket expenses specific to the patient, plan, procedure, and provider.

Restrictions on Data Requests

In addition to the publicly accessible data, all states allow entities to request additional data. Nonetheless, to prevent the potential for anticompetitive use of the data discussed in Part II,[91] states have adopted appropriate safeguards to ensure that when releasing data sets with information not available on a public website, the procompetitive benefits of the release outweigh the anticompetitive concerns.[92] Specifically, to prevent potential anticompetitive use of the data, all states, to varying degrees, limit data release to specific data elements, entities, or purposes.

Limited Disclosure of Data Elements

Many states allow disclosure of most of the financial data elements the states collect (see Table 2). Specifically, Colorado, Utah, Washington, and Vermont allow the release of all financial data elements submitted. Maine allows release of all the financial data elements submitted except for the charge amount — the amount the provider charges the payer for the service — to prevent the calculation of charge/paid ratio. Rhode Island, in contrast, allows the release of all submitted financial data elements as well as calculating, for release, the allowed amount — the maximum amount that a carrier will pay to a provider for a particular procedure or service.

Disclosure for Limited Purposes

Some states, however, restrict data releases to specific purposes. For example, Washington requires data requesters to assert a public benefit justification, which may include the promotion of competition. Delaware allows access to "pricing information and other sensitive financial data elements" for the purposes of improving public health via a data release process.[93] On the other hand, New Hampshire releases data only for the purpose of research.[94]

Disclosure to Limited Parties

Other states limit who can request data from the APCD. For example, in Colorado, only a "state agency or private entity engaged in efforts to improve health care quality, value or public health outcomes for Colorado residents" may request custom data.[95] Washington has a more complex scheme, releasing different levels of data elements to different categories of users: (a) researchers, (b) government agencies, (c) other agencies and entities, and (d) the public.[96] Such a tiering scheme allows the release of "proprietary financial information" only to researchers with institutional review board (IRB) approval, federal agencies, Washington state agencies, and local governments.[97]

Table 2. Data Elements Most Commonly Available for Release by APCDs

	AR	CO	CT	DE	ME	MD	MA	MN	NH	OR	RI	UT	VT	WA
Paid amount (plan)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Allowed amount	✔	✔	✔			✔	✔		✔	✔	✔		✔	
Capitation / Prepaid amount (fee-for-service equivalent amount)	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔
Charge amount	✔	✔	✔	✔		✔	✔		✔	✔	✔	✔	✔	✔
Cost sharing (copay, coinsurance, deductible)	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔
Dispensing fee amount	✔	✔		✔	✔		✔		✔	✔	✔	✔	✔	✔
Ingredient cost / List price	✔	✔		✔	✔		✔		✔	✔	✔	✔	✔	✔
Postage amount (for pharmacy)		✔		✔	✔		✔		✔		✔	✔	✔	✔

Notes: This table excludes Florida, Hawaii, Kansas, and New York, which do not have a data dictionary or data release manual available online. For Minnesota, the "paid amount" field identifies the sum of all plan and member payments for encounters within this record's utilization category.

Conversely, Maine has no prohibitions on who can request the data, but the state requires approval from its data release committee for release of most financial information. Massachusetts views data release to academic researchers as lacking potential anticompetitive effects and presumes that procompetitive benefits of the research outweigh the risk of causing anticompetitive behavior.

While other states allow limited disclosures by statute, statutory requirements may unnecessarily limit disclosures that could be procompetitive and publicly beneficial. To maximize the utility of its APCD, California should allow disclosure of all information upon review by a data release committee, in a process similar to the practices in Maine and Massachusetts. When making disclosure determinations, the review committee should consider the minimum data required to do the study, the purpose of the study, and the entity making the request. Furthermore, the committee should presume that requests from academic researchers and government agencies are procompetitive.

California should also consider adopting a tiered data release policy that improves upon Washington's tiering scheme. Tier 1 would comprise data releases to the public, including price reports and other consumer- or policy-relevant findings, on a publicly available website. Tier 2 would include data releases to government or academic researchers. While these data releases should be reviewed, they should be presumed to be procompetitive. Tier 3 would include data releases to private entities or industry participants. These requests would require review by a data release committee (described later, in "Data Release Committees and Data Use Agreements to Prevent Inappropriate Disclosures" on page 18) that considers the competitive effects of the requested data release.

Restrictions on Disclosure of Trade Secrets

In addition to imposing restrictions based on anticompetitive concerns, some states have limited the disclosure of information that submitters have labeled as trade secrets. For example, Florida allows data submitters to clearly designate information as a trade secret and then prohibits disclosure of that information.[98] Oregon specifically prohibits disclosure of trade secrets[99] and specifies in its Data User Guide that "allowed amount" is "considered" a trade secret and "never or nearly never available for its request."[100] Oregon will disclose an "allowed amount" data element only after Department of Justice review.[101] Delaware provides that "trade secrets and commercial or financial information . . . [are] of a privileged or confidential nature" and are not public records.[102] As a result, data submitted to Delaware's APCD is not subject to public records requests but can be requested through the state's data release process.

Although some states allow designation of submitted information as trade secrets, this designation unnecessarily hampers transparency efforts. As demonstrated in Part I, states have the authority to release trade secrets with proper notification as long as the disclosure is in the public interest. As a result, California should not agree to keep confidential any information designated as a trade secret by a data submitter. Instead, Delaware's model, which allows disclosure of data through the data release committee but not through the state public records act, strikes a potential compromise. Rather than allowing complete access to the data by any party filing a public records act request, Delaware ensures that any data releases from the state ACPD go through data release review. The state can thus ensure that appropriate protections for sensitive data are followed while allowing disclosure of information for academic and government research and procompetitive purposes.

California should consider similar provisions exempting APCD from the California Public Records Act, but the state should emphasize that the data release committee may disclose any data after proper review. California should empower its data release committee to disclose data when the committee determines that the procompetitive effects of doing so and the public interest outweigh any anticompetitive harms that might result.

Data Release Committees and Data Use Agreements to Prevent Inappropriate Disclosures

Nearly every state requires the APCD director or a data review committee to approve data release requests for data not available on a publicly accessible website.[103] After data release approval, all states require the parties to enter into a data use agreement to ensure adequate protections for sensitive financial information and proper use of the data.

Data Release Committees

Data release committees are tasked with reviewing requests for APCD data that are not publicly available. Typically, statutes or regulations determine representation on the data release committee, and committee members are appointed by state officials. In Colorado, for example, the data release review committee must include a "representative of a physician organization, hospital organization, non-physician provider organization and a payer organization on the data release review committee."[104] Similarly, the executive director of the Massachusetts APCD names the data release committee but must include, at a minimum, "representatives from health care plans, health care providers, health care provider organizations and consumers." In New Hampshire, the APCD commissioner may also determine members of the committee but must include one representative from each of the following stakeholder categories: insurance carriers, health care facilities, health care practitioners, the general public, purchasers of health insurance, and health care researchers.[105]

In California, although industry membership on the data release committee will be important, data releases should benefit all stakeholders, including patients, employers, government entities, and the public. Therefore, at least half of the committee's voting membership should be nonsubmitting entities. Determining appropriate data release practices will require input from a range of experts who understand health care markets, trade secret and privacy protocols, and consumer behavior and interests, in addition to industry experts.

Data Use Agreements

Data use agreements (DUAs) serve to protect financial information and ensure proper use of data and are employed by all state APCDs (see Table 3). All existing state DUAs prohibit disclosure of data without the express permission of the APCD. Additionally, nearly all DUAs prohibit entities from reverse engineering APCD data to identify patients and from using the data in ways other than the proposed usage. DUAs in Washington, Vermont, and Utah further prevent the data user from reverse engineering provider reimbursements or specific contract terms. To prevent disclosure of identifying information, most DUAs explicitly require requesting entities to have a cell suppression policy.[106]

Importantly, all DUAs require a data management plan or some form of administrative, physical, or technical safeguards to protect the data from unintended or unauthorized use or disclosure, although those technical standards vary substantially.[107] For example, several APCDs prohibit use of unsecured telecommunication or internet services. New Hampshire requires appropriate password complexity to protect data sets. Maine and Florida set minimum standards for encryption in their DUAs.[108] Maine's DUA also specifies that the APCD data will "not be accessed, tested, maintained, backed-up, transmitted, or stored outside of the United States." In addition, DUAs typically require certification of data destruction after project completion.

Finally, most states include indemnification clauses and penalties to protect the state against misuse of the APCD data. DUAs often include an indemnification clause to hold state APCDs harmless from the actions of data users. In particular, Colorado and Washington include an indemnification clause for antitrust liability. These states' DUAs explicitly hold the state APCD harmless if the data are used for any anticompetitive conduct, such as price-fixing. States have also designated penalties for violation of their DUAs. Some states simply use boilerplate language to subject data users to civil or criminal charges, penalties, and fines under applicable state and federal law.

Alternatively, Washington, New Hampshire, and Rhode Island have the power to immediately recall the data following a DUA violation. In Massachusetts and Delaware, a violation prohibits the data user from making future requests for data from the APCD. In addition, Maine may seek a court injunction to force compliance with the DUA and to prohibit use of the data by any researcher at the same institution for up to five years. Furthermore, most DUAs require, at a minimum, prior notice or approval before the publication of any findings. Utah and Maine, for example, require prior notification of publication in any academic journal 30 days or 20 days, respectively, before submission.

California should follow the example of other states and ensure proper use of the data by means of a DUA. California's DUA should ensure adequate protections for the data, including mandated data destruction, data management plans, and penalties for misuse of the data and inadvertent data releases. Data misuse, including use for anticompetitive purposes, should result in civil or potentially criminal charges, penalties, fines, and a ban from making future APCD data requests for five to 10 years, depending on the circumstances. California should also include an indemnification clause to protect the state from any recriminations from the misuse, misappropriation, or inappropriate release of the data. Finally, California should require data users to submit notification of any publication resulting from the data and require approval by the data release committee if the publication contains nonanonymized or unaggregated data.

In summary, states are relatively uniform in the type of data they collect and in making at least some of the data publicly available. States vary substantially, however, in what data are publicly accessible and what entities can access data through a data request.

Table 3. Common Elements in Data Use Agreements Among Active APCDs

	CO	DE	FL	ME	MA	NH	RI	UT	VT	WA
APCD retains ownership		✔	✔	✔	✔		✔	✔	✔	✔
Certificate of data destruction	✔	✔		✔	✔	✔	✔	✔	✔	✔
Data management plan / Requirement of safeguards	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Data only to be used as described in application	✔	✔	✔	✔	✔	✔		✔	✔	✔
Indemnification	✔	✔	✔	✔	✔	✔	✔	✔		✔
Prohibition of disclosure (of reports *or* data) without prior notice	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Prohibition on identification of patients (including reverse engineering)	✔	✔	✔	✔	✔	✔	✔		✔	✔

Notes: The following states are excluded from this table for the reasons stated: Minnesota does not have a DUA. Arkansas, Oregon, Maryland, and Connecticut do not have DUAs available online. New York and Hawaii are still implementing their APCDs and do not have DUAs set up.

IV. Recommendations

This part of the report offers specific recommendations for policymakers to help them navigate trade secret protections and antitrust concerns regarding the disclosure of negotiated rates between providers and payers and other sensitive information. More generalized recommendations regarding the contours of a data release committee, data use agreements (DUAs), and guidelines for data release are offered in Part II of this report.

1. **OSHPD should provide all data submitters with clear information and policies regarding data release prior to data collection.** Data collected from other state agencies may be subject to confidentiality agreements and require amendments to the Knox-Keene Act and California Public Records Act.

2. **OSHPD should create a data release committee and declare that all information submitted to the APCD will be released in accordance with data release guidelines at the discretion of the data release committee.** To avoid any claim of trade secret misappropriation, OSHPD should inform data submitters that decisions regarding confidentiality and data release will be made by the data release committee to avoid the expectation that labeling data as confidential will prevent disclosure of that data.

3. **The data release committee should establish guidelines for data release that weigh competitive effects and public interest.** Specifically, the committee should release data only when the procompetitive effect of the data release or the public interest outweighs the anticompetitive effect.

4. **The data release committee should implement a tiered data release policy, which would base oversight and access to data on the data requested and the nature of the requester.** The committee should review requests for data containing negotiated payment amounts on the basis of the nature of the entity making the request, the justification for the request, the proposed usage of the data, the nature of the information requested, the requesting entity's technical and physical safeguards for maintaining the security of the data files, and whether the entity has misused data or violated prior data use agreements. For example, a tiered data release policy could include these provisions:

   - ***Tier 1:*** *Data release to the public.* OSHPD releases price reports and other consumer- or policy-relevant findings on a publicly available website. Some aggregated and/or anonymized data should also be available to the public.[109]

   - ***Tier 2:*** *Data release to academic or governmental entities.* The committee should presume data requests from academic or governmental agencies to be procompetitive. These requests should be limited to the minimum data sets necessary to conduct the proposed research and subject to a data use agreement (DUA) that would allow only anonymized or aggregated data to be included in published study results without committee approval.

   - ***Tier 3:*** *Data release to private entities or industry participants.* Industry participants and other private entities may request additional data from the APCD. The committee should consider comments from other industry participants and competitors before releasing data. Released data should be the minimum amount needed based on the reason for the request, and the requester should be required to demonstrate why the aggregated and anonymized data are insufficient for the requester's intended use.

   To streamline data review, the committee could consider allowing the committee chair to review Tier 2 requests or Tier 3 requests that do not include negotiated rates. The committee chair could then approve these requests or pass them on to the committee for further review.

5. **The data release committee should establish a data use agreement that provides requirements for accessing data.** The DUA should require that the data be used only for the approved use, that the recipient keep all nonpublic data confidential unless nonconfidentiality is approved by the committee, and that the recipient of the data implement appropriate privacy and encryption protections. The DUA should establish civil monetary penalties for using the data in illegal ways, including misappropriation, intentional and unauthorized data release, and price-fixing or collusion, and should exclude offending individuals, institutions, and companies from accessing APCD data for up to 10 years or more. The DUA should include procedural guidance for inadvertent data release and require data recipients to indemnify the state of California and OSHPD for any misuse or misappropriation of released APCD data.

6. **OSHPD or its designee should monitor annual claims data for anticompetitive behavior.** OSHPD should look for evidence of tacit collusion or price shadowing, especially in highly concentrated markets, and should remove data from public display if anticompetitive effects are found.

Endnotes

1. Zach Y. Brown, "Equilibrium Effects of Health Care Price Information," *Review of Economics and Statistics* (forthcoming), published ahead of print, doi:10.1162/rest_a_00765.
2. The research presented in this report demonstrates that the committee would have the authority to release provider- and plan-specific prices on a public website; still, the committee should consider competitive effects when deciding to release negotiated rate data on the public website, especially in highly concentrated markets.
3. Cal. Health and Safety Code §§ 127671(a), (c).
4. Brown, "Equilibrium."
5. Deepa Varadarajan, "Trade Secret Fair Use," *Fordham Law Review* 83, no. 3 (2014), ir.lawnet.fordham.edu.
6. See Annemarie Bridy, "Trade Secret Prices and High-Tech Devices: How Medical Device Manufacturers Are Seeking to Sustain Profits by Propertizing Prices," *Texas Intellectual Property Law Journal* 17 (2009): 188, ssrn.com.
7. See Peabody v. Norfolk, 98 Mass. 452, 458 (1868) (acknowledging that a trade secret is property even without a patent).
8. "Trade Secrets Act," Uniform Law Commission, www.uniformlaws.org.
9. Uniform Trade Secrets Act § 1(4)(i–ii) (Unif. Law Comm'n 1985).
10. For a 50-state comparison, see Russell Beck, *Trade Secrets Acts Compared to the UTSA*, Beck, Reed, and Ridden, August 8, 2018, www.faircompetitionlaw.com (PDF).
11. Beck, *Trade Secrets Act*.
12. Uniform Trade Secrets Act § 1(1) (Unif. Law Comm'n 1985).
13. Uniform Trade Secrets Act § 1(2)(i–ii).
14. Cal. Civ. Code § 3426.1(d).
15. Snelling Servs., LLC v. Diamond Staffing Servs., Inc., No. A135049, 2013 WL 3947175, at *10 (Cal. Ct. App. July 30, 2013) (holding that customer lists can be protected as trade secrets even if it is possible to re-create them); and Bancroft-Whitney Co. v. Glen, 64 Cal. 2d 327, 352 (1966) (stating "[i]t requires little talent to distinguish between a situation in which an individual voluntarily discloses his own salary to another and one in which the unpublished salary list of a group of prospective employees is revealed to a competitor for the purpose of facilitating the recruitment of the corporation's personnel").
16. Cal. Civ. Code § 3246.1(a).
17. Defend Trade Secrets Act of 2016, Pub. L. No. 114–153, 130 Stat. 376 (to be codified at 18 U.S.C. § 1836, et seq.).
18. 18 U.S.C.A. § 1839(3).
19. 18 U.S.C.A. § 1833(b) provides protection for "whistleblowers." As long as the disclosures are filed under seal, this section protects individuals who disclose trade secrets to government officials, the individuals' attorneys, or both as part of a complaint or lawsuit alleging violation of a law or defensively when an employer claims that the individual has disclosed a trade secret. This section has been called a "public-interest exemption" to trade secret law, but this exemption is distinct from the public-interest exemptions discussed in this report.
20. Cal. Civ. Code § 3426 (2019).
21. Trade secret cases can be heard in "the state of the plaintiff's place of business or incorporation; the state of an individual defendant's domicile; the state of a defendant corporation's place of incorporation or principal place of business; any state where the defendant's 'affiliations with the State are so "continuous and systematic" as to render them essentially at home in the forum state;' the state where the alleged misappropriation occurred (location where the conduct causing the injury occurred); the state where the trade secrets were allegedly transported to (place where the injury occurred); or the state where harm was felt, if the defendant directed activity toward that forum." See Brittany S. Bruns, "Criticism of the Defend Trade Secrets Act of 2016: Failure to Preempt," *Berkeley Technology Law Journal* 32, no. 9 (2018): 469, scholarship.law.berkeley.edu.
22. Children's Hosp. Cent. California v. Blue Cross of California, 226 Cal. App. 4th 1260, 1277 (2014).
23. *Children's Hosp. Cent. California*, 226 Cal. App. 4th.
24. Com., Dept. of Pub. Welfare v. Eiseman, 633 Pa. 366, 387 (2015) (citing 12 Pa. Cons. Stat. § 5302).
25. *Com., Dept. of Pub. Welfare*, 633 Pa. 366, 387.
26. Wilmington Star-News, Inc. v. New Hanover Regional Medical Center, Inc., 125 N.C. App. 174 (1997).
27. *Wilmington Star-News, Inc.*, 125 N.C. App. at 180.
28. These factors include (1) the extent to which the information is known outside of the business; (2) the extent to which it is known by employees and others involved in the business; (3) the extent of measures taken to guard the secrecy of the information; (4) the value of the information to the business and to its competitors; (5) the amount of effort or money expended to develop the information; and (6) the ease or difficulty with which the information could be properly acquired or duplicated by others. Restatement (Second) of Torts § 757 (Am. Law Inst. 1979).
29. *Wilmington Star-News, Inc.*, 125 N.C. App. at 182.
30. See *Wilmington Star-News, Inc.*, 125 N.C. App. at 182 (referring to N.C. Gen. Stat. Ann. § 66–152 (2,3) 132-1.2 and arguing on the grounds that the information did not belong to a "private person," and records of public hospitals are subject to the state Public Records Act).

31. Unif. Trade Secrets Act § 1(2)(ii) (Unif. Law Comm'n 1985).
32. Emergency Care Research Inst. v. Guidant Corp., No. CIV.A. 06-1898, 2007 WL 2702455 (E.D. Pa. Sept. 12, 2007).
33. Emergency Care Research Inst. at 4 (stating that a "genuine issue of material fact also exists as to how many of Guidant's contracts contain confidentiality agreements" and denying a motion for summary judgment).
34. See e.g., Convolve, Inc. v. Compaq Computer Corp., 527 F. App'x 910, 925 (Fed. Cir. 2013); Rogers v. Desa Int'l, Inc., 183 F. Supp. 2d 955, 957 (E.D. Mich. 2002); and Flotec, Inc. v. S. Research, Inc., 16 F. Supp. 2d 992 (S.D. Ind. 1998).
35. Cal. Health & Safety Code § 1385.07.
36. Cal. Gov't Code § 6254(q)(2–3).
37. Lyft, Inc. v. City of Seattle, 190 Wash. 2d 769, 780 (2018).
38. Some states, including Iowa, Nebraska, and Florida, have public interest exemptions that balance the potential benefit and harm to the public of trade secret disclosure under the state public records acts. Specifically, Nebraska's Public Records Act allows trade secrets and other confidential information to be withheld from public records disclosure only if the release of that information "would give advantage to business competitors and serve no public purpose." Neb. Rev. Stat. Ann. § 84-712.05.
39. Cal. Gov't Code § 6255.
40. O'Grady v. Superior Court, 139 Cal. App. 4th 1423 (Cal. Ct. App. 2006).
41. *O'Grady* at 1475–76.
42. See D. Andrew Austin and Jane G. Gravelle, Cong. Research Serv., RL34101, *Does Price Transparency Improve Market Efficiency? Implications of Empirical Evidence in Other Markets for the Health Sector*, 2007; Jihui Chen, "Differences in Average Prices on the Internet: Evidence from the Online Market for Air Travel," *Economic Inquiry* 44, no. 4 (Oct. 2006): 656, doi:10.1093/ei/cbj040; Deborah Haas-Wilson, "The Effect of Commercial Practice Restrictions: The Case of Optometry," *Journal of Law & Economics* 29, no. 1 (Apr. 1986): 165, doi:10.1086/467114; Ho Geun Lee, "Do Electronic Marketplaces Lower the Price of Goods?," *Communications of the ACM* 41, no. 1 (Jan. 1998): 73, doi:10.1145/268092.268122; Alex R. Maurizi, "The Effect of Laws Against Price Advertising: The Case of Retail Gasoline," *Economic Inquiry* 10, no. 3 (Sept. 1972): 321, doi:10.1111/j.1465-7295.1972.tb01607.x; Jeffrey Milyo and Joel Waldfogel, "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart," *Amer. Economic Review* 89, no. 5 (Dec. 1999): 1081, doi:10.1257/aer.89.5.1081; Florian Zettelmeyer, Fiona Scott Morton, and Jorge Silva-Risso, "Cowboys or Cowards: Why Are Internet Car Prices Lower?" (Working Paper No. 8667, Nat'l Bureau of Economic Research, 2001), doi:10.3386/w8667; and Florian Zettelmeyer, Fiona Scott Morton, and Jorge Silva-Risso, "How the Internet Lowers Prices: Evidence from Matched Survey and Automobile Transaction Data," *Journal of Marketing Research* 43, no. 2 (May 1, 2006): 168, doi:10.1509/jmkr.43.2.168.
43. See Brent D. Fulton, "Health Care Market Concentration Trends in the United States: Evidence and Policy Responses," *Health Affairs* 36, no. 9 (2017): 1531, doi:10.1377/hlthaff.2017.0556.
44. See Anna D. Sinaiko and Meredith B. Rosenthal, "Increased Price Transparency in Health Care — Challenges and Potential Effects," *New England Journal of Medicine* 364 (Mar. 10, 2011): 892, doi:10.1056/NEJMp1100041.
45. Specifically, the lower-cost provider has a financial incentive to remain cheaper than the dominant provider, to ensure that insurers will want to drive patients to the lower-cost provider's facility, but this provider has little incentive to offer significant discounts over its higher-cost peer.
46. David Cutler and Leemore Dafny, "Designing Transparency Systems for Medical Care Prices," *New England Journal of Medicine* 364 (Mar. 10, 2011): 894, doi:10.1056/NEJMp1100540.
47. Cutler and Dafny, "Designing," 894.
48. Sinaiko and Rosenthal, "Increased Price Transparency," 893.
49. Svend Albæk, Peter Møllgaard, and Per B. Overgaard, "Government-Assisted Oligopoly Coordination? A Concrete Case," *Journal of Industrial Economics* 45, no. 4 (1997): 429, econpapers.repec.org.
50. David P. Byrne and Nicolas de Roos, "Learning to Coordinate: A Study in Retail Gasoline," *Amer. Economic Review* 109, no. 2 (Feb. 2019): 591, doi:10.1257/aer.20170116.
51. Byrne and de Roos, "Learning," 591.
52. Deanna White, *Payments, Antitrust, Secrecy, and Transparency*, Maine Health Data Organization, June 2016, 3.
53. See also Marina Lao (director, Office of Policy Planning, Fed. Trade Commission) et al. to Minnesota Representatives Joe Hoppe and Melissa Hortman, June 29, 2015 (hereinafter "FTC Minnesota Letter"), www.ftc.gov (PDF) (citing other examples such as railroad grain, automaker marketing, long distance telephone, and inland water transportation).
54. US Dept. of Justice (DOJ) and Federal Trade Commission (FTC), *Statements of Antitrust Enforcement Policy in Health Care*, August 1996, 49–52.
55. DOJ and FTC, *Statements*, 49.
56. DOJ and FTC.
57. DOJ and FTC.
58. DOJ and FTC, 50.
59. DOJ and FTC, 50–51.
60. DOJ and FTC, 51.

61. DOJ and FTC (emphasis added).

62. DOJ and FTC.

63. Minn. Stat. § 13.387.

64. FTC Minnesota Letter, *supra* note 53.

65. Christine A. Varney (Asst. Attorney General, Antitrust Div., US Dept. of Justice) to Mit Spears, Esq., Ropes & Gray LLP, April 26, 2010, www.justice.gov.

66. *Antitrust Legality of Reports and Analytic Data Sets Generated Based on All Payer Claims Data*, Center for Improving Value in Health Care, 2014, www.apcdcouncil.org (PDF).

67. *Antitrust Legality*, 2.

68. *Antitrust Legality*.

69. *Antitrust Legality*, 3.

70. Under the state-action immunity doctrine of Parker v. Brown, state authorities are immune from federal antitrust lawsuits for actions pursuant to a clearly expressed state policy, even when anticompetitive effects were foreseeable. This immunity can extend to state-sanctioned behavior by private entities if (1) the state clearly articulates a state policy to displace competition and (2) the state actively supervises the anticompetitive conduct.

71. Ha T. Tu and Johanna R. Lauer, *Impact of Health Care Price Transparency on Price Variation: The New Hampshire Experience*, Issue Brief 128, Center for Studying Health System Change, November 2009, www.apcdcouncil.org.

72. Tu and Lauer, *Impact*.

73. See Ha T. Tu and Rebecca Gourevitch, *Moving Markets: Lessons from New Hampshire's Health Care Price Transparency Experiment*, California Health Care Foundation, 2014, www.chcf.org; and Brown, "Equilibrium," *supra* note 4.

74. Brown, *supra* note 4.

75. Brown, 25.

76. Brown.

77. Brown, 26.

78. See Tu and Gourevitch, *Moving Markets*; Tu and Lauer, *Impact*.

79. See Tu and Gourevitch.

80. Tu and Gourevitch, 4.

81. Tu and Gourevitch, 5.

82. Tu and Gourevitch, 8.

83. Karynlee Harrington (executive director, Maine Health Data Organization) to Katarina M. Horyn (associate general counsel, UnitedHealthcare Insurance Co.), December 27, 2018, mhdo.maine.gov (PDF) (responding to letter dated Nov. 12, 2018, regarding Harvard Pilgrim Health Care's MHDO data Request Number 2018082201).

84. Harrington to Horyn.

85. Not all state APCDs are of equal quality. Among the states that have implemented APCDs, only Colorado, Maine, and New Hampshire received a grade higher than F on the Catalyst for Payment Reform's Annual Report Card on State Price Transparency Laws for the most recent three years available (2014–2017). This report card rewards states with APCDs that collect meaningful price information, so these three states should serve as possible models for California to emulate.

86. These 18 states are Arkansas, Colorado, Connecticut, Delaware, Florida, Hawaii, Kansas, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New York, Oregon, Rhode Island, Utah, Vermont, and Washington. The survey includes incomplete information from Kansas, which has out-of-date information, as well as from Hawaii, Delaware, Florida, and New York, which are still implementing their mandatory APCDs. In addition, the survey excludes information from APCDs in Tennessee, West Virginia, and Virginia, which either rely on voluntary submission (Virginia) or have stopped accepting data (Tennessee, West Virginia).

87. *Achieving States' Goals for All-Payer Claims Databases*, Anthem Public Policy Institute (June 2018), www.antheminc.com (PDF); and "Common Data Layout," APCD Council, www.apcdcouncil.org.

88. This comparison was done by reviewing each APCD's data submission manual and the data dictionary that contained all elements available for receipt. This review could not be made for Kansas (out-of-date information). This review could not be made for Florida, Hawaii, or New York because of the lack of a data dictionary or a data submission manual.

89. Maine recently began decoupling data from insurer. Instead of identifying each insurer, the APCD identifies only the insurer type (e.g., commercial payer). This transition is ongoing and is not fully reflected on Maine's consumer-facing price transparency website.

90. See *supra* notes 61–62 and accompanying text.

91. See *supra* notes 52–59 and accompanying text.

92. See CIVHC, *supra* note 63 ("Those reports or analytic data sets that do not satisfy the third condition would generally be lawful and are highly unlikely to be challenged by the Agencies because they will have little or no anticompetitive effect and may have substantial procompetitive benefits. . . . Many of these reports have the additional benefit of furthering public policy goals of greater price transparency and may, in turn, help to lower costs and actually be viewed as procompetitive under the antitrust laws"); Harrington, *supra* note 80 and accompanying text (affirming that release of MHDO claims data did not result in anticompetitive behavior).

93. See Del. Admin. Code 1-104(3.5.4). Here, Delaware defines pricing information to mean "any information referring to prices charged or paid, and includes the pre-adjudicated price charged by a Provider to a Reporting Entity for Health Care Services, the amount paid by a Member or insured party, including copays and deductibles, and the post-adjudicated price paid by a Reporting Entity to a Provider for Health Care Services."

94. N.H. Code Admin. R. He-W 950.05(a).

95. 10 Colo. Code Regs. § 2505-5:1.200.5.A.

96. See Wash. Rev. Code § 43.371.050; and "Who Is Eligible to Request WA-APCD Data?," Washington HealthCareCompare, accessed May 9, 2019, www.wahealthcarecompare.com.

97. Wash. Rev. Code § 43.371.050(4)(a); and Wash. Admin. Code § 82-75-510. Here, "proprietary financial information" is defined as "claims data or reports that disclose or would allow the determination of specific terms of contracts, discounts, or fixed reimbursement arrangements or other specific reimbursement arrangements between an individual health care facility or health care provider, as those terms are defined in RCW 48.43.005, and a specific payer, or internal fee schedule or other internal pricing mechanism of integrated delivery systems owned by a carrier." Wash. Rev. Code § 43.371.010(12).

98. Fla. Stat. § 408.061; Fla. Stat. Ann. § 364.183.

99. Or. Rev. Stat. § 442.466(8)(d).

100. *Oregon All Payer All Claims Database (APAC), Data User Guide — 2011–2016 Dates of Service, Release APAC 2018.2*, Oregon Health Authority, November 27, 2018, www.oregon.gov (PDF).

101. *Oregon Data User Guide*, 53.

102. Del. Admin. Code 1-103(5.1).

103. Because Minnesota does not permit use of data by third parties unaffiliated with the Minnesota Department of Health, Minnesota does not have a governance structure for data release or a data use agreement.

104. 10 Colo. Code Regs. § 2505-5:1.200.5.B.

105. N.H. Code Admin. R. He-W 950.06(c).

106. A typical cell suppression policy prohibits the data recipient from publishing any findings derived from output from cell sizes (e.g., admittances, discharges, patients, services) of 11 or fewer. This requirement ensures cells with fewer than 11 observations cannot be identified by manipulating data in the report.

107. For a review of these data security standards, see Andrew Kelley and Jaime S. King, *All-Payer Claims Databases: The Balance Between Big Healthcare Data Utility and Individual Health Privacy*, The Source on Healthcare Price and Competition, October 2017, www.sourceonhealthcare.org (PDF).

108. Entities using the data in Maine must implement block-level encryption with the strength of "a certified algorithm which is 256 bit or higher." Florida requires encryption to be "consistent with Federal Information Processing Standards (FIPS), and/or the National Institute of Standards and Technology (NIST) publications regarding cryptographic standards."

109. The research presented in this report demonstrates that the committee would have the authority to release provider- and plan-specific prices on a public website; still, the committee should consider competitive effects when deciding to release negotiated rate data on the public website, especially in highly concentrated markets.