Healthcare Openness and Access Project: Mapping the Frontier for the Next Generation of American Healthcare, June 2018 Update

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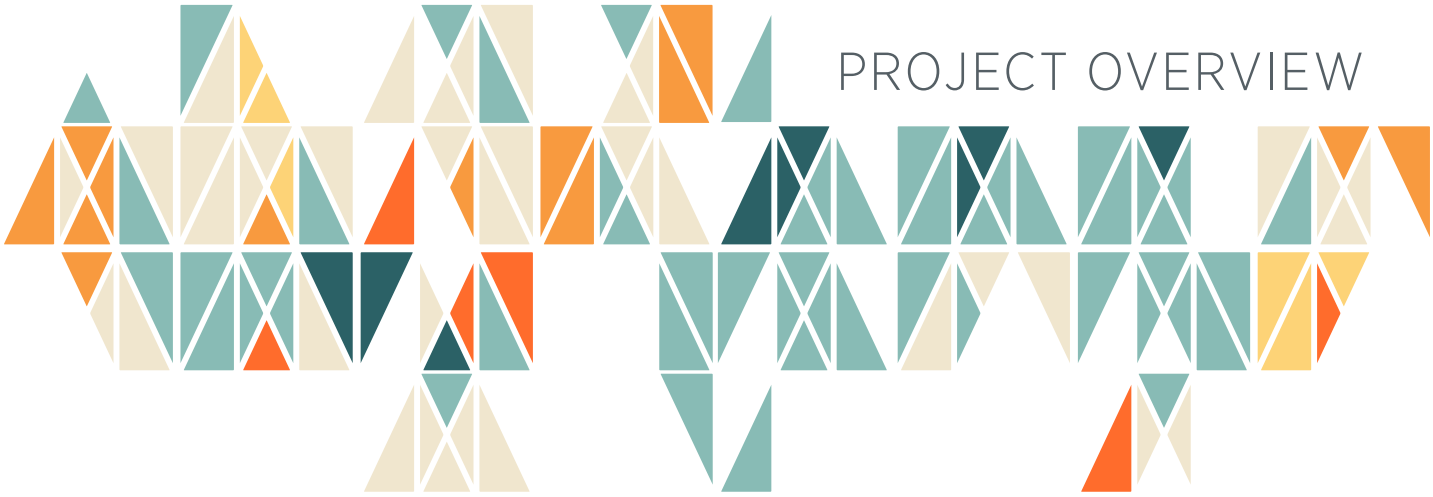

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ABSTRACT

The Healthcare Openness and Access Project (HOAP) is a collection of state-by-state comparative data on the flexibility and discretion US patients and providers have in managing healthcare. HOAP combines these data to produce 37 indicators of openness and accessibility. In turn, these indicators are grouped into 10 broad subindexes (Corporate, Insurance, Occupational Regulation, Pharmaceutical Access, Telemedicine, Direct Primary Care, Medical Liability, Provider Regulation, Public Health, and Taxation), which in combination form the overall HOAP index. The indicators, subindexes, and overall index are all scored on a 1-to-5 Likert scale. The project provides state-by-state rankings over a number of variables. Using the data provided on the project's website, readers may adjust the weights on the indicators to custom-build subjective measures and rankings that differ from the ones presented in this paper. This June 2018 update revises some of the data series from the original November 2016 study.

JEL codes: I100, I110, I180, H7

Keywords: health, health data, healthcare, Medicaid, public health, regulation, caregiving, health professional, hospital, medicine, nurse practitioner, pharmacist, optician, midwifery, physician, telemedicine

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The Healthcare Openness and Access Project can be accessed at http://mercatus.org/hoap

APRIL 2019 ERRATA

The original June 2018 update was based on a spreadsheet containing some numeric errors, corrected in this April 2019 revision. Data for the indicator "State allows access to naloxone" range from 3 to 5; in the June 18 release, a calculation error resulted in all states receiving a 5. Under the indicator "State lacks burdensome prescription monitoring mandates," New Jersey should have received a score of 2, erroneously recorded in June 2018 as a 4. Under the indicator "State mandates fewer health insurance benefits," Florida and Georgia should have received scores of 2 and 1, respectively; in June 2018, they were erroneously recorded as 1 and 2, respectively. Correcting these errors also changed the rankings under the Public Health, Insurance, and Provider Regulation subindexes and in the overall HOAP index. All these changes are incorporated in this revision.

PREFACE TO JUNE 2018 UPDATE

The Healthcare Openness and Access Project (HOAP) was first released by the Mercatus Center at George Mason University in November 2016. In this document, the authors revise the data comprising 23 of the 37 indicators. As a result, 9 of the 10 subindexes and the overall HOAP index change as well, causing the state rankings to shift.

The November 2016 and June 2018 data (corrected in April 2019) are not directly comparable, given the nature of the changes to the data. In some cases, the original source data have been updated. In other cases, the original data sources have been replaced by other sources—sometimes because the original data are no longer produced. In still other cases, the authors supplemented the original source data with new sources. Therefore, to ascertain whether a state's change in score or ranking is meaningful requires a look into the specifics of how and why that state's numbers changed.

Fortunately, the data proved relatively robust. Consider the overall HOAP index. Of the 50 states plus the District of Columbia, 43 moved up or down by 6 or fewer slots in the rank order. The greatest downward movement was the District of Columbia, which dropped 8 slots—from 40th place in the November 2016 document to 48th place in the revised paper. The greatest upward movement was Hawaii, which moved up 13 slots.

The following chart shows the changes in rankings from the November 2016 document to the present update. Some changes in state rankings for the 10 subindexes were considerably more dramatic.

The changes made to the data series here are a first step toward overhauling the HOAP methodology in order to make regular updates more practical and the results more consistent and robust.

OVERALL HOAP INDEX RANKINGS

November 2016		June 2018 (Corrected April 2019)	
1	Idaho	Wyoming	1
2	Montana	Montana	2
3	Missouri	Idaho	3
4	Mississippi	Indiana	4
5	Utah	Missouri	5
6	Wisconsin	Utah	6
7	Wyoming	Colorado	7
8	Indiana	Nebraska	8
9	Colorado	Wisconsin	9
10	Alaska	Alaska	10
11	Nevada	Mississippi	11
12	Nebraska	Louisiana	12
13	Virginia	Virginia	13
14	South Dakota	South Dakota	14
15	New Hampshire	Nevada	15
16	Louisiana	Hawaii	16
17	Oregon	New Hampshire	17
18	Arizona	Arizona	18
19	Alabama	Texas	19
20	Texas	Alabama	20
21	New Mexico	New Mexico	20
22	Maine	North Dakota	22
23	Washington	Oregon	23
24	Ohio	Florida	24
25	Iowa	Maine	25
25	Michigan	Kansas	26
27	Pennsylvania	Iowa	27
28	North Dakota	Ohio	27
29	Hawaii	Pennsylvania	29
30	Kansas	Washington	30
31	South Carolina	Michigan	31
32	Florida	Oklahoma	32
33	Oklahoma	Minnesota	33
34	California	Tennessee	34
35	Tennessee	South Carolina	35
36	Maryland	Delaware	36
37	Illinois	Arkansas	37
38	Delaware	Massachusetts	38
39	Minnesota	California	39
40	District of Columbia	Maryland	40
41	Massachusetts	Rhode Island	40
42	Vermont	North Carolina	42
43	North Carolina	West Virginia	43
44	West Virginia	Illinois	44
45	Kentucky	Vermont	45
46	Arkansas	Kentucky	46
47	Rhode Island	Connecticut	47
48	Connecticut	District of Columbia	48
49	New York	New York	49
50	New Jersey	Georgia	50
51	Georgia	New Jersey	51

There is broad agreement in the United States that it would be desirable to lower the cost and improve the quality of healthcare and broaden health insurance coverage. There is much disagreement about how this trio of goals is to be accomplished. The years-long political struggle over the Affordable Care Act (ACA, commonly known as Obamacare) is the most visible manifestation of this divergence of views. The ACA represents one approach to tackling the three goals. Many on the political Left argue for still-more-centralized public-sector control over healthcare and particularly for a federal single-payer insurance system. Policymakers and commentators on the Right have offered a variety of proposals that, generally speaking, would shift more power to private-sector entities and to states. All these proposals have one thing in common: they assume the key to lower costs and better care lies in reconfiguring the insurance system.

We believe the three goals of healthcare reform cannot be attained by fixating solely, or even primarily, on health insurance reform. States have (and should have) substantial control over the delivery of healthcare—and not solely or principally in the area of insurance reform. To make maximum use of state powers in improving care, it is vital to have a basis for comparison—to see what works in other states. The Healthcare Openness and Access Project (HOAP) is a set of tools providing state-by-state measures of the flexibility and discretion that patients and providers have in managing health and healthcare. In other words, HOAP seeks to answer the following questions: how open are each state's laws and regulations to institutional variation in the delivery of care, and how much access to varying modes of care does this confer on the state's patients and providers?

Five motivations prompted HOAP's creation:

- *Insurance isn't everything.* Ultimately, simultaneous progress on the three goals of healthcare reform—lower costs, higher quality, and broader coverage—will require fundamental changes in the technologies and structures of care and in how, where, when, and why care is delivered. Those

fundamental changes will be most effective, we believe, not as top-down mandates based on centralized expertise, but rather as the results of a vast constellation of patients and providers innovating, experimenting, and extemporizing to an unprecedented degree. HOAP highlights institutional features that help determine the degree to which such experimentation is currently possible.

- *States matter*. States possess great power to determine which providers perform what services, the means by which they do so, their legal responsibilities in the event that patients suffer harm, and so forth. The HOAP index and subindexes suggest how the states differ in encouraging delivery-system innovation. To be sure, insurance is part of the equation, and HOAP data do include some insurance-related variables.
- *Perception is not reality*. Perceptions about states do not always accord with reality. A leftward tilt in the ACA debate does not necessarily correlate with tight centralized control of healthcare at the state level. Nor does a rightward tilt in the debate always comport with extensive patient-provider discretion. For example, HOAP data suggest that Hawaii, a reliably blue state, offers broad leeway to patients and providers while Georgia, a very red state, has some of the most restrictive healthcare laws and regulations in the nation.
- *Comparisons help*. HOAP as a whole provides a great deal of comparative data on healthcare policy in the states. It is a one-stop source of information on policy differences around the country. As an example, 47 states and the District of Columbia require a physician's signature to prescribe oral contraceptives. So, to many, that requirement may seem to be the natural order of things—a universal. But it is not without exception: California, Colorado, and Oregon allow pharmacists to autonomously prescribe oral contraceptives. Perhaps this anomaly will persuade policymakers in other states to at least ask how that market functions in the three outlier states. Does giving this power to pharmacists cause prices to drop? Are there measurable effects on health, either positive or negative? How do patients and providers in California, Colorado, and Oregon feel about this enhanced power for pharmacists?
- *Discussion is valuable*. We want HOAP to become a catalyst for discussion. We do not present the index as the definitive measure of openness, access, flexibility, or discretion in healthcare for any particular state. Rather, it is a first

pass, an approximation, a point of departure. If observers question aspects of the index and offer alternatives, then the project will have done its job.

In 1883, the great physicist and engineer Lord Kelvin famously stated what has since become known as Lord Kelvin's dictum: "When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be."[1]

We offer HOAP in the spirit that Lord Kelvin expressed. At the same time, we humbly keep in mind the addendum offered decades later by the great economist Frank Knight: "And when you can measure, your knowledge is of a meager and unsatisfactory kind."[2]

PROJECT DESIGN

The overall HOAP index is the average of 10 equally weighted subindexes that measure the discretion patients and providers have over broad areas of healthcare, such as public health and telemedicine. We describe each subindex in detail in appendix A and explain why we chose to include it in the HOAP index. The equal weighting is purposeful: it is an explicit recognition of the fact that no single set of weights should be considered "correct." In any project of this type, the menu of component variables is somewhat arbitrary and subjective. We have constructed HOAP so readers and researchers can, if they wish, alter those weights to reflect their own preferences. It would please us to find others using HOAP data to devise alternative indexes whose findings deviate from ours.

The subindexes are, in turn, averages of equally weighted indicators. The Taxation Subindex, for example, is the average of three indicators related to taxes on providers, health savings accounts, and medical devices. The 37 indicators (which are really sub-subindexes) are calculated in a variety of ways from various data sources. Details on data sources and calculations are provided in appendix B, and further technical information is available on the HOAP website.

Here is a list of the subindexes (in alphabetical order) and the indicators that compose the overall HOAP index:

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1. Lord Kelvin, "Electrical Units of Measurement" (lecture at the Institution of Civil Engineers, May 3, 1883), in *Popular Lectures and Addresses*, ed. Sir William Thomson (London: Macmillan, 1889), 73.
2. Deirdre McCloskey reports a version of this oft-retold quip: Deirdre McCloskey, "One More Step: An Agreeable Reply to Whaples," *Prudentia*, February 2010.

- Corporate Subindex
  - State allows the corporate practice of medicine
  - State allows businesses to employ licensed healthcare professionals
  - State allows nonlicensed individuals to own/operate medical entities
  - State allows licensed individuals to split fees with nonlicensed individuals
- Direct Primary Care Subindex
  - State has pro-DPC laws
  - State has higher market demand for DPC
  - State has more DPC practices per capita
- Insurance Subindex
  - State mandates fewer health insurance benefits
  - State mandates less rate review
  - State does not expand on federal age rating limitations
  - State does not expand on federal tobacco rating limitations
  - State does not expand on federal geographic rating limitations
- Medical Liability Subindex
  - Physicians pay fewer malpractice actions
  - Physicians pay lower malpractice premiums
  - State has adopted more reforms to modulate malpractice litigation
- Occupational Regulation Subindex
  - State allows medical licensure reciprocity with other states
  - State has fewer continuing medical education requirements
  - State allows nurse practitioners broad scope of practice
  - State has fewer optician licensing requirements
  - State allows direct-entry midwifery
- Pharmaceutical Access Subindex
  - State allows greater access to experimental drugs
  - State allows access to medical marijuana
  - State allows easier access to pseudoephedrine

    - State allows access to oral contraceptives without physician prescription
- Provider Regulation Subindex
    - State has fewer certificate-of-need restrictions
    - State puts fewer restrictions on compounding pharmacies
    - State lacks burdensome prescription monitoring mandates
- Public Health Subindex
    - State allows access to e-cigarettes
    - State allows access to naloxone
    - State has strong "Good Samaritan" protection
- Taxation Subindex
    - State has fewer provider taxes
    - State has fewer health savings account (HSA) taxes
    - State has fewer medical device taxes
- Telemedicine Subindex
    - State reimburses Medicaid providers at parity for telemedicine
    - State has less restrictive telepresenter requirements
    - State reimburses Medicaid providers at parity for remote monitoring
    - State allows online prescribing

The table on page 12 presents the state-by-state ranking generated from each state's (and the District of Columbia's) score in the overall HOAP index.

CAVEATS AND CONCLUSIONS

As we have noted, any index of this type necessarily involves a substantial measure of subjectivity and arbitrariness. There is also a degree of ambiguity. Implicitly, a higher score on the overall index or a particular subindex suggests "better" conditions than a lower score does, but the case for one score being better than the other may not be clear.

For instance, one indicator for the Telemedicine Subindex involves Medicaid reimbursement parity. We take it as beneficial that in some states Medicaid will pay for telemedicine. But parity itself is problematic. One argument for telemedicine is that it is less costly than traditional office visits. Therefore,

if Medicaid pays the same amount for both, it may be depriving telemedicine practices of the ability to compete on the price dimension to push costs downward. To offer another example, our index implies that the availability of pseudoephedrine is a positive opportunity for patients who suffer from allergies. We recognize, however, that states make the purchase of these drugs difficult because pseudoephedrine can be used in the production of illegal addictive drugs such as methamphetamine. Hence, we include the pseudoephedrine access indicator with reservations.

We use a 1|2|3|4|5 Likert scale for all indicators. Some indicators, however, are binary. In those cases, we opted to use 1 and 5. We could have chosen, say, 2 and 4, knowing that doing so would reduce these indicators' impact on subindexes and the overall index. Again, one must choose, and there is no unambiguously correct choice.

While we recognize some haziness in the data, we nevertheless see the results as meaningful information. If one state ranks third and another fourth in the HOAP index, that is rather weak evidence that flexibility is greater in the first state. But if one state ranks third and another ranks forty-seventh, that distinction is more likely to be meaningful.

We decided to omit certain variables because they are so politically charged that their presence might drown out the overall findings—and because even among the creators of HOAP there are strong differences of opinion on the positives and negatives of these issues. Three that come to mind are abortion, assisted suicide, and vaccination exemptions. They are nowhere to be found in this project.

In some ways, the goal of HOAP is to encourage questions rather than to provide definitive answers. HOAP is a journey, not a destination.

RANKING AND SCORES FOR THE OVERALL HOAP INDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Wyoming	3.75	27	Iowa	3.17
2	Montana	3.75	27	Ohio	3.17
3	Idaho	3.73	29	Pennsylvania	3.16
4	Indiana	3.72	30	Washington	3.16
5	Missouri	3.71	31	Michigan	3.15
6	Utah	3.69	32	Oklahoma	3.15
7	Colorado	3.62	33	Minnesota	3.08
8	Nebraska	3.61	34	Tennessee	3.07
9	Wisconsin	3.60	35	South Carolina	3.05
10	Alaska	3.58	36	Delaware	3.03
11	Mississippi	3.53	37	Arkansas	2.95
12	Louisiana	3.47	38	Massachusetts	2.95
13	Virginia	3.42	39	California	2.93
14	South Dakota	3.41	40	Maryland	2.93
15	Nevada	3.38	40	Rhode Island	2.93
16	Hawaii	3.36	42	North Carolina	2.91
17	New Hampshire	3.34	43	West Virginia	2.91
18	Arizona	3.30	44	Illinois	2.91
19	Texas	3.28	45	Vermont	2.89
20	Alabama	3.27	46	Kentucky	2.85
20	New Mexico	3.27	47	Connecticut	2.82
22	North Dakota	3.27	48	District of Columbia	2.74
23	Oregon	3.25	49	New York	2.65
24	Florida	3.24	50	Georgia	2.59
25	Maine	3.22	51	New Jersey	2.41
26	Kansas	3.17			

Note: Scores are rounded to the nearest hundredth. There are three pairs of true ties: Alabama and New Mexico, Iowa and Ohio, and Maryland and Rhode Island.

APPENDIX A. INTRODUCTION TO THE SUBINDEXES

Corporate

The "corporate practice of medicine" doctrine arose out of early-20th-century efforts by the American Medical Association to professionalize medicine through the development of an ethical code preventing quackery and the commercial exploitation of physicians.[3] Its proponents insist that any person who "practices medicine" must be licensed by the government and that healthcare professionals may not assist unlicensed people or entities to practice medicine. These principles have been extended to encompass not only the delivery of healthcare itself but also business and financial administration for medical providers. The expansion of the doctrine into healthcare management inhibits the development of innovative business models that could potentially lower the cost and improve the quality of medical care. States that enforce the corporate practice of medicine doctrine in effect assert that people or entities that are not licensed by the state to practice medicine may not significantly influence the delivery of medical services.[4]

The era of the autonomous solo practitioner is long gone, and it is doubtful that the clinical decisions of doctors and other healthcare professionals were ever unaffected by financial considerations. In the current healthcare-policy and economic milieu, the corporate practice of medicine doctrine tends to inhibit efficient organization of healthcare systems, positive innovation, and improvement in quality. Instead of furthering the doctrine's stated goal of protecting physicians' autonomy in decision-making—long gone in the era of HMOs and hospital-based practices—it constrains the formation of an integrated healthcare system. An enforced ban, for example, prohibits a licensed physician and an unlicensed person from forming a limited liability company in which the doctor provides medical services and the unlicensed person handles business administration. Additionally, the doctrine complicates the provision of healthcare across state lines since state law and enforcement practices vary dramatically, making interstate business alignment difficult and hazardous.[5]

States are able to ban the corporate practice of medicine because of their inherent police powers. Noncompliance by physicians and other medical professionals can lead to criminal sanctions and disciplinary action by a licensing

3. Nicole Huberfeld, "Be Not Afraid of Change: Time to Eliminate the Corporate Practice of Medicine Doctrine," *Health Matrix* 14, no. 2 (2004): 243.
4. Huberfeld, "Be Not Afraid of Change," 243.
5. Nicholas Hudalla, "The Intersection between Telemedicine and the Corporate Practice of Medicine Doctrine," *AAOS Now*, February 2015.

board. Additionally, a state attorney general can dissolve an entity deemed to be formed illegally. Unfortunately, the doctrine is often manifested in a largely incoherent and unpredictable array of state-based laws, legal precedents, and expert opinions that are disparately enforced.[6] State statutes, regulations, court decisions, and attorney general opinions may all include prohibitions impacting the possible legal structuring of healthcare entities and redefining the nature of collaborations and reimbursement decision-making.[7]

The HOAP index's Corporate Subindex analyzes (1) the presence or absence of the corporate practice of medicine doctrine in state law, and more particularly (2) whether businesses are prohibited from employing licensed professionals to provide medical care, (3) whether entities that provide medical services are required to be owned or operated by licensed professionals, and (4) whether professional fee-splitting between licensed and unlicensed providers is prohibited. See table A1 for the Corporate Subindex ranking and each state's score.

Direct Primary Care

Direct primary care (DPC) is a model of healthcare provision in which a primary care doctor charges patients a retainer fee covering all or most primary care services, including clinical, laboratory, and consulting services. This model enables physicians to move away from fee-for-service insurance billing. Given the variety of retainer practice models and the resulting legislative confusion, it is important to define direct primary care accurately. A DPC practice charges a periodic fee for services, generally $25 to $85 per month.[8] It does not bill any third parties on a fee-for-service basis, and any per-visit charges are less than the monthly equivalent of the periodic fee.[9] Through this mechanism, DPC practices claim to reduce administrative overhead by approximately 40 percent.[10]

Advocates of DPC laud it as a free-market healthcare model that would lower the costs of primary care and improve patients' access to care. Because DPC allows physicians to establish a more humane and flexible practice than

6. Mary H. Michal, Meg S. L. Pekarske, and Matthew K. McManus, "Corporate Practice of Medicine Doctrine 50 State Survey Summary" (Reinhart Boerner Van Deuren s.c., Madison, WI, September 2006), 2.
7. Stuart I. Silverman, "In an Era of Healthcare Delivery Reforms, the Corporate Practice of Medicine Is a Matter That Requires Vigilance," *Health Law and Policy Brief* 9, no. 1 (2015): 3.
8. Charlotte Huff, "Direct Primary Care: Concierge Care for the Masses," *Health Affairs* 34, no. 12 (2015): 2016.
9. Philip M. Eskew and Kathleen Klink, "Direct Primary Care: Practice Distribution and Cost across the Nation," *Journal of the American Board of Family Medicine* 28, no. 6 (2015): 793.
10. Eskew and Klink, "Direct Primary Care: Practice Distribution and Cost," 794.

TABLE A1. RANKING AND SCORES FOR THE CORPORATE SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Hawaii	5.00	25	Florida	2.00
1	Indiana	5.00	25	Illinois	2.00
1	Mississippi	5.00	25	Kansas	2.00
1	Missouri	5.00	25	Maryland	2.00
1	Montana	5.00	25	North Carolina	2.00
1	Utah	5.00	25	Pennsylvania	2.00
1	Wyoming	5.00	25	South Carolina	2.00
8	Alabama	4.00	25	Vermont	2.00
8	Alaska	4.00	35	Arizona	1.00
8	Idaho	4.00	35	Arkansas	1.00
8	Iowa	4.00	35	California	1.00
8	Nebraska	4.00	35	Connecticut	1.00
8	New Hampshire	4.00	35	Georgia	1.00
8	New Mexico	4.00	35	Maine	1.00
8	Rhode Island	4.00	35	Michigan	1.00
8	Virginia	4.00	35	Minnesota	1.00
17	District of Columbia	3.00	35	Nevada	1.00
17	Kentucky	3.00	35	New Jersey	1.00
17	Louisiana	3.00	35	New York	1.00
17	Massachusetts	3.00	35	North Dakota	1.00
17	Ohio	3.00	35	Oklahoma	1.00
17	South Dakota	3.00	35	Oregon	1.00
17	Tennessee	3.00	35	Texas	1.00
17	Wisconsin	3.00	35	Washington	1.00
25	Colorado	2.00	35	West Virginia	1.00
25	Delaware	2.00			

Note: Tied ranks reflect tied scores.

they can under the typical volume-driven model, it has the potential to encourage more physicians to become primary care providers. Patients can join a DPC practice without regard to their insurance or their socioeconomic status. Doctors tend to be responsible for caring for a smaller number of clients (800 at any one time, rather than 2,000), thereby enabling them to spend more time with each patient during longer appointments. Additionally, DPC practitioners have the flexibility to use email and telemedicine to interact with patients, which is a benefit of the model since these methods of providing care are not typically

compensated by insurance companies.[11] By breaking ties to health insurance programs, doctors are able to personalize the way they care for an individual patient without losing reimbursement, whereas in the traditional fee-for-service model, insurance companies typically refuse to compensate physicians for their time until (or unless) they have a face-to-face appointment with the patient.

Several obstacles impede physicians who seek to adopt the DPC model, however. In addition to regulatory penalties imposed by hostile government bodies, pioneers of the model have faced aggressive state insurance commissioners who threaten criminal prosecution for the unlawful sale of insurance, deeming DPC an insurance product.[12] According to these state commissioners' analysis, DPC transfers too much risk from patients to physicians for a fixed monthly fee. What might happen should too many ill patients need to be seen at once by a DPC physician? What guarantees that care would be delivered as promised? Unfortunately, primary care physicians' reluctance to attempt the direct primary care model limits patient awareness of the model and its potential to improve healthcare access and quality. Low market demand for the DPC model and a low number of DPC practices in a state suggest the state is a hostile regulatory environment for DPC practices.

The DPC movement has responded by advocating for state-level protective legislation clarifying that DPC is not an insurance product and for other measures that would protect physicians' and patients' access to the model. Currently a small number of states have laws protecting DPC practices against complex insurance regulations. The Affordable Care Act contains a provision stating that the Department of Health and Human Services "shall permit a qualified health plan to provide coverage through a qualified direct primary care medical home plan that meets criteria established by the Secretary."[13] The act also allows DPC practices to be marketed in state exchanges as long as they are combined with a "wraparound" insurance policy that will cover other medical costs, such as catastrophic care.[14]

The HOAP index's Direct Primary Care Subindex analyzes state-level regulations and access to DPC practices by examining (1) whether a state has laws protecting DPC, (2) what is the market demand for this model, and (3) how many DPC practices exist in the state. See table A2 for the Direct Primary Care Subindex ranking and each state's score.

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11. Bill Kramer, "Direct Primary Care: The Future of Health Care?," *MultiState Insider*, April 1, 2015.
12. Philip M. Eskew, "Direct Primary Care: A Legal and Regulatory Review of an Emerging Practice Model" (Heartland Institute, January 2015), 2.
13. Eskew, "Direct Primary Care: A Legal and Regulatory Review," 8.
14. Huff, "Direct Primary Care: Concierge Care," 2019.

TABLE A2. RANKING AND SCORES FOR THE DIRECT PRIMARY CARE SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Arizona	4.33	26	Arkansas	3.33
1	Colorado	4.33	26	California	3.33
1	Maine	4.33	26	District of Columbia	3.33
1	Texas	4.33	26	Georgia	3.33
1	Utah	4.33	26	Maryland	3.33
1	Washington	4.33	26	Massachusetts	3.33
1	West Virginia	4.33	26	Mississippi	3.33
8	Florida	4.00	26	New Hampshire	3.33
8	Idaho	4.00	26	Vermont	3.33
8	Indiana	4.00	26	Wisconsin	3.33
8	Kansas	4.00	37	Alaska	3.00
8	Kentucky	4.00	37	Connecticut	3.00
8	Missouri	4.00	37	Delaware	3.00
8	North Carolina	4.00	37	Hawaii	3.00
8	Oregon	4.00	37	New Jersey	3.00
8	Tennessee	4.00	37	New Mexico	3.00
8	Virginia	4.00	37	New York	3.00
8	Wyoming	4.00	37	Ohio	3.00
19	Louisiana	3.67	45	Illinois	2.67
19	Michigan	3.67	45	Iowa	2.67
19	Minnesota	3.67	45	Montana	2.67
19	Nebraska	3.67	45	Nevada	2.67
19	Oklahoma	3.67	45	Rhode Island	2.67
19	Pennsylvania	3.67	50	North Dakota	2.00
19	South Carolina	3.67	50	South Dakota	2.00
26	Alabama	3.33			

Note: Scores are rounded to the nearest hundredth. Tied ranks reflect tied scores.

Insurance

Insurance, broadly speaking, is the financial mechanism by which individuals pool risk in order to protect themselves against the costs associated with uncertainties. A well-functioning insurance market allows people—at a relatively small cost per person—to live their lives, pursue their goals, and carry out their business with mitigated risk.

For insurance to function properly, certain basic conditions are necessary. For example, for a risk to be insurable, the potential loss cannot be infinitely large, immeasurable, or certain to happen, and the question of whether the loss occurred cannot be indefinable. In a market-oriented society, health insurance

would be like other insurance. Individuals would purchase coverage for some portion of their medical, surgical, or pharmaceutical expenses, and the price of the coverage would reflect the risk.

Unfortunately, as governments continue to expand their role in regulating health insurance, health insurance operates less and less as true insurance. For example, in contrast to casualty insurance suppliers, health insurance companies are not fully free to design their products to meet the demands of their customers. The prices the companies set typically do not reflect the actual expected costs associated with any given buyer, based on that buyer's actual risks and characteristics. Furthermore, pricing on a health insurance product from one year to the next often requires the approval of a state board. Consequently, as many commentators have pointed out, health insurance bears much greater resemblance to a prepaid healthcare plan than to an actual insurance product.[15]

While federal regulation of private health insurance markets has been the main focus of policy debates in the past few years, state regulation remains influential.[16] The HOAP index's Insurance Subindex evaluates state laws and regulations in five areas: (1) mandated health insurance benefits, (2) mandatory rate review, (3) age rating, (4) tobacco rating, and (5) geographic rating. See table A3 for the Insurance Subindex ranking and each state's score.

The first indicator scores the states according to how many benefits state law requires to be included in health insurance policies sold in the state. (These are requirements over and above federally mandated health benefits, which are required in all states.) Some researchers have estimated that mandated benefits can increase the cost of basic health insurance by an amount between 20 percent and as much as 50 percent of what it would have been otherwise.[17] Others have noted that the cost increase is likely smaller because many people receive coverage through their employers, and employers likely would have elected to include most mandated benefits anyway. But these researchers still find that mandated benefits have a negative effect on openness, access, and consumer choice.[18] The second

15. John Goodman, "Why You Don't Have Real Health Insurance," *Health Policy Blog* (National Center for Policy Analysis), September 28, 2011; Barry Fagin, "Markets and Choice the Solution to Ever-Rising Heath [sic] Care Costs," *Complete Colorado*, March 16, 2015; David Dranove, "Recommendations for Improving the Health System: Academics Speak Out," *Health Management, Policy and Innovation* 1, no. 1 (2012).
16. Jill Quadagno, "Right-Wing Conspiracy? Socialist Plot? The Origins of the Patient Protection and Affordable Care Act," *Journal of Health Politics, Policy and Law* 39, no. 1 (2014).
17. Victoria Craig Bunce and JP Wieske, *Health Insurance Mandates in the States 2009* (Alexandria, VA: Council for Affordable Health Insurance, 2009).
18. Jonathan Gruber, "State-Mandated Benefits and Employer-Provided Health Insurance," *Journal of Public Economics* 55, no. 3 (1994).

TABLE A3. RANKING AND SCORES FOR THE INSURANCE SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Utah	4.60	17	South Dakota	3.60
2	Idaho	4.40	17	Tennessee	3.60
2	Missouri	4.40	17	West Virginia	3.60
2	Montana	4.40	30	California	3.40
2	South Carolina	4.40	30	Connecticut	3.40
2	Wisconsin	4.40	30	Maine	3.40
2	Wyoming	4.40	30	Maryland	3.40
8	Alabama	4.20	30	Minnesota	3.40
8	Arizona	4.20	30	North Carolina	3.40
8	Illinois	4.20	30	Oklahoma	3.40
8	Louisiana	4.20	30	Oregon	3.40
8	Texas	4.20	30	Washington	3.40
8	Virginia	4.20	39	New Mexico	3.20
14	Pennsylvania	4.00	40	Arkansas	3.00
15	Georgia	3.80	40	Colorado	3.00
15	Mississippi	3.80	42	Hawaii	2.80
17	Alaska	3.60	43	Delaware	2.60
17	Florida	3.60	43	Kentucky	2.60
17	Indiana	3.60	43	New Hampshire	2.60
17	Iowa	3.60	46	New Jersey	2.20
17	Kansas	3.60	47	Massachusetts	1.80
17	Michigan	3.60	47	New York	1.80
17	Nebraska	3.60	47	Rhode Island	1.80
17	Nevada	3.60	50	District of Columbia	1.60
17	North Dakota	3.60	51	Vermont	1.00
17	Ohio	3.60			

Note: Tied ranks reflect tied scores.

indicator evaluates whether states allow health insurance companies to set their own prices as they see fit without external review or approval. In an open market, insurers would be able to set their prices at a level they believe is efficient, just as other producers do. However, some states have laws that empower state insurance departments to review and reject price increases. Some researchers have found that required approval of rates is not necessarily correlated with fewer rate increases, which challenges the assumption that the practice protects consumers.[19] In this

19. "Rate Review: Spotlight on State Efforts to Make Health Insurance More Affordable" (Focus on Health Reform, Henry J. Kaiser Family Foundation, Menlo Park, CA, December 2010).

indicator, states that do not have mandatory rate review score the highest, followed by states that require review in either the individual or the small group market but not both. States that score the lowest require review in both the individual and small group markets.

The third, fourth, and fifth indicators pertain to various types of community rating. According to federal law, despite the importance of accurate risk assessment, insurers may not sell coverage to people at different prices based on their actual health-related behaviors and other relevant characteristics. Under statute, insurers are only allowed to take into consideration a limited number of factors when pricing coverage for an individual.[20] These include the person's age, whether the person smokes, and where the person lives. Premiums may be higher for certain individuals only by certain ratios, such as 3 to 1 for older adults compared to younger adults. States that impose no more restrictions than the applicable federal law does are leaving their insurers as free as they can in this regard, so they score the highest in these areas. Some states, however, go beyond the federally defined ratios and impose narrower ranges that, in effect, intensify the community rating effect. These states score lower. States that prohibit insurers from using these variables altogether score the lowest.

Medical Liability

The perception of state-level tort risk affects the supply of healthcare. Perception of risk determines outcomes: businesses and professionals perceive that too many tort claims are being filed and that punitive damages tend to be excessive, and this perception drives the demand for tort reform despite evidence of its minimal overall impact. The presumption that there is a crisis is a driver of supply and investment in healthcare. State-level tort risk plays a role in many economic decisions, such as where businesses invest and healthcare providers practice, what drugs and medical devices are produced, and which patients receive care.

According to the Congressional Budget Office, in 2000 more than 700,000 tort suits were filed in state courts, compared with 37,000 in federal courts.[21] The National Conference of State Legislatures reported that in 2013, 44 states considered changes to medical malpractice law.[22] The perception of litigation

20. Mathias Kifmann, "Community Rating in Health Insurance and Different Benefit Packages," *Journal of Health Economics* 21, no. 5 (2002).
21. Congressional Budget Office, *The Effects of Tort Reform: Evidence from the States*, June 2004, 15.
22. Heather Morton, "Medical Liability: Medical Malpractice 2013 Legislation," National Conference of State Legislatures, January 13, 2014.

risk has a significant impact on the supply of healthcare in terms of professional longevity, geographic location, and risk-taking. It also casts a long shadow in the business community. A JAMA study shows that three years after states adopted direct malpractice reforms, the supply of physicians had increased by 3.3 percent.[23]

The actual economic impact of tort reform is difficult to determine, however. Tort reform at the state level is highly diverse, unique, and multilayered, making it difficult to correlate outcome with policy. Overall, the impact of tort reform appears to be extremely limited. For example, in a study of the impact of state tort reforms on physician malpractice payments published in *Health Affairs*, the authors' multivariate analysis showed that "strong tort law provisions" explained at most only one-fourth of the variation among states in the average payment amount for a medical malpractice claim, only 1 percent of the variation in the number of claims paid by physicians, and only about 7 percent of the variation in dollars paid per practicing physician for claims.[24]

In the healthcare system, a more important cost driver than actual litigation is physicians' fear of lawsuits—a fear that gives rise to defensive medicine.[25] According to multiple surveys, a large majority of physicians agree that doctors order more tests and procedures than needed in order to protect against the accusation of negligence and substandard care. According to some estimates, as much as $650 billion to $850 billion is spent annually on defensive medicine.[26]

The HOAP index's Medical Liability Subindex analyzes three state-level factors: two factors that affect malpractice costs and one composite factor related to reform initiatives. In terms of costs, HOAP (1) assesses the number of malpractice payments per provider for each state and (2) calculates the average cost of malpractice premiums for three practice types: internal medicine, obstetrics and gynecology, and general surgery; in terms of state-level liability reform, HOAP (3) analyzes the presence or absence of 11 major tort reform initiatives in order to generate a composite state score. See table A4 for the Medical Liability Subindex ranking and each state's score.

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23. Daniel P. Kessler, William M. Sage, and David J. Becker, "Impact of Malpractice Reforms on the Supply of Physician Services," *JAMA* 293, no. 21 (2005): 2618.
24. Teresa M. Waters et al., "Impact of State Tort Reforms on Physician Malpractice Payments," *Health Affairs* 26, no. 2 (2007): 507.
25. Tara F. Bishop, Alex D. Federman, and Salomeh Keyhani, "Physicians' Views on Defensive Medicine: A National Survey," *Archives of Internal Medicine* 170, no. 12 (2010): 1081.
26. "Physician Study: Quantifying the Cost of Defensive Medicine" (Jackson Healthcare, Alpharetta, GA, February 2010).

TABLE A4. RANKING AND SCORES FOR THE MEDICAL LIABILITY SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Wisconsin	4.67	19	New Jersey	3.33
2	North Dakota	4.33	19	North Carolina	3.33
3	Colorado	4.00	19	Ohio	3.33
3	Minnesota	4.00	19	Oregon	3.33
3	Nebraska	4.00	19	South Carolina	3.33
3	Nevada	4.00	19	Utah	3.33
3	Oklahoma	4.00	19	Vermont	3.33
3	South Dakota	4.00	19	Virginia	3.33
9	Alabama	3.67	35	Arkansas	3.00
9	Alaska	3.67	35	Connecticut	3.00
9	Arizona	3.67	35	Florida	3.00
9	California	3.67	35	Georgia	3.00
9	Idaho	3.67	35	Hawaii	3.00
9	Maine	3.67	35	Kansas	3.00
9	Missouri	3.67	35	Kentucky	3.00
9	Tennessee	3.67	35	Michigan	3.00
9	Texas	3.67	35	New Mexico	3.00
9	Washington	3.67	35	Pennsylvania	3.00
19	Delaware	3.33	35	West Virginia	3.00
19	Indiana	3.33	35	Wyoming	3.00
19	Iowa	3.33	47	Illinois	2.67
19	Louisiana	3.33	47	Maryland	2.67
19	Massachusetts	3.33	49	District of Columbia	2.00
19	Mississippi	3.33	49	New York	2.00
19	Montana	3.33	49	Rhode Island	2.00
19	New Hampshire	3.33			

Note: Scores are rounded to the nearest hundredth. Tied ranks reflect tied scores.

Occupational Regulation

Occupational regulation refers to the licensing or credentialing of individuals seeking to work in medicine or healthcare. This type of regulation typically requires individuals to go through a professional training regimen of a particular type or duration, pass mandatory examinations, or meet some other set of predefined qualification standards. The actual content of these requirements can range from modest and reasonable—things that any rising professional would

have done to gain credibility in the market—to unnecessarily burdensome or even counterproductive.

Historically, the argument for occupational regulation—especially in medicine—has been that it protects the public from harm caused by "incompetents, charlatans, and quacks."[27] While that goal may be accomplished on some level, some have argued that a much more significant effect has been to restrict entry to regulated professions and protect those already practicing against competition from newcomers.[28] Wherever entry into an occupation can be slowed or the scope of practice for a profession limited, interest groups take notice and seek control over the requirements-setting process.[29] For interest groups that succeed, it is a small step from serving as industry doorkeepers to exhibiting cartel-like behavior.[30]

Medical licensure per se is not an area in which there is state variation, because all states require doctors to be licensed in order to practice medicine. Other aspects of medical licensure, however, such as state reciprocity and continuing education requirements, do vary at the state level. Similarly, there is variation in how other healthcare professionals are regulated. The HOAP index's Occupational Regulation Subindex evaluates states in five areas: (1) medical licensure reciprocity with other states, (2) continuing medical education requirements for licensed medical professionals, (3) scope of practice for nurse practitioners, (4) licensing requirements for opticians, and (5) legality of direct-entry midwifery. See table A5 for the Occupational Regulation Subindex ranking and each state's score.

The first indicator evaluates the extent to which states make it easy for physicians to practice by recognizing medical licenses granted by other states. Reciprocity laws are one of the easiest and least controversial ways for states to minimize restraints on physicians, yet a substantial number of states do not allow reciprocity. Not only does this pose a problem for traveling physicians and physicians who practice near state borders, but it also has an unnecessarily restrictive effect on telemedicine (the practice of medicine at a distance through the use of telecommunications technology).

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27. S. David Young, "Occupational Licensing," in *The Concise Encyclopedia of Economics*, ed. David R. Henderson (online: Library of Economics and Liberty, 1993).
28. Young, "Occupational Licensing."
29. Elizabeth Graddy, "Toward a General Theory of Occupational Regulation," *Social Science Quarterly* 72, no. 4 (1991); Norman Gevitz, "'A Coarse Sieve': Basic Science Boards and Medical Licensure in the United States," *Journal of the History of Medicine and Allied Sciences* 43, no. 1 (1988).
30. Keith B. Leffler, "Physician Licensure: Competition and Monopoly in American Medicine," *Journal of Law & Economics* 21, no. 1 (1978); Milton Friedman, *Capitalism and Freedom*, 40th anniversary ed. (Chicago: University of Chicago Press, 2002).

TABLE A5. RANKING AND SCORES FOR THE OCCUPATIONAL REGULATION SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Montana	4.60	26	Delaware	3.00
2	Idaho	4.20	26	District of Columbia	3.00
2	Minnesota	4.20	26	Kansas	3.00
2	Mississippi	4.20	26	Maine	3.00
2	South Dakota	4.20	26	Michigan	3.00
6	Wisconsin	4.00	26	Nevada	3.00
7	Colorado	3.80	26	Rhode Island	3.00
7	Indiana	3.80	26	Utah	3.00
7	Louisiana	3.80	26	Washington	3.00
7	Missouri	3.80	36	Arizona	2.60
7	Nebraska	3.80	36	California	2.60
7	New Hampshire	3.80	36	Florida	2.60
7	North Dakota	3.80	36	Hawaii	2.60
7	Oklahoma	3.80	36	Illinois	2.60
7	Wyoming	3.80	36	Kentucky	2.60
16	Oregon	3.60	36	New Jersey	2.60
17	Alabama	3.40	43	Arkansas	2.20
17	Alaska	3.40	43	North Carolina	2.20
17	Iowa	3.40	43	Pennsylvania	2.20
17	Maryland	3.40	43	Texas	2.20
17	New Mexico	3.40	47	Virginia	2.00
17	New York	3.40	48	Georgia	1.80
17	Ohio	3.40	48	Massachusetts	1.80
17	West Virginia	3.40	48	South Carolina	1.80
25	Vermont	3.20	48	Tennessee	1.80
26	Connecticut	3.00			

Note: Tied ranks reflect tied scores.

The second indicator scores states according to the number of hours of ongoing education required per year in order to maintain a medical license. Continuing medical education (CME) is promoted as a means to ensure that physicians stay current with changing medical knowledge, but there is some evidence challenging whether it is effective and used properly.[31] State-mandated CME

31. John C. Sibley et al., "A Randomized Trial of Continuing Medical Education," *New England Journal of Medicine* 306, no. 9 (1982); Bernard S. Bloom, "Effects of Continuing Medical Education on Improving Physician Clinical Care and Patient Health: A Review of Systematic Reviews," *International Journal of Technology Assessment in Health Care* 21, no. 3 (2005).

requirements are in essence an extension of medical licensure and are thus detrimental to openness, access, and choice in the same ways medical licensure is. Admirably, a small number of states recognize this and do not require any CME hours. A much larger number of states do require CME, however. For this indicator, states that require fewer CME hours received higher scores.

The third indicator expresses the breadth of actions and procedures that states allow nurse practitioners (NPs) to perform under their professional license. Growing evidence indicates that NPs can perform many primary care services as safely and effectively as physicians perform them, yet some states either limit what NPs are allowed to do or require that they practice under the direct supervision of a physician.[32] States that allow healthcare organizations to determine for themselves which procedures NPs may perform scored higher for this indicator.

The fourth indicator evaluates the licensing barriers that states erect for individuals who seek to work as opticians, fitting and dispensing corrective lenses for people with vision problems. Some states allow freedom of entry into this profession by not requiring a minimum amount of experience or education, leaving the judgment of individual opticians' competence up to the market. Those states score highest for this indicator. Other states require either a moderate amount of experience or education (less than two years) or a significant amount (two or more years) before an individual may practice as an optician.

The fifth and final indicator in this subindex evaluates whether states allow self-study or apprenticed midwives to offer childbirth assistance. Although midwife-attended births are standard for women with low-risk pregnancies in most other developed nations, the practice is relatively uncommon in the United States.[33] Unfortunately, skepticism about the practice has become ensconced in state law. Some states allow direct-entry midwifery, but several states and the District of Columbia continue to restrict or prohibit midwifery to varying degrees, denying midwives the ability to practice their profession and denying women the autonomy to make an informed choice about their birthing options.[34] States that allow direct-entry midwifery score higher for this indicator than those that do not.

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32. Julie A. Fairman et al., "Broadening the Scope of Nursing Practice," *New England Journal of Medicine* 364, no. 3 (2011).
33. Sarah Anne Stover, "Born by the Woman, Caught by the Midwife: The Case for Legalizing Direct-Entry Midwifery in All Fifty States," *Health Matrix* 21, no. 1 (2011).
34. Stover, "Born by the Woman, Caught by the Midwife."

Pharmaceutical Access

Pharmaceutical access is an important component to assessing healthcare autonomy. The policy choice to regulate or prohibit a drug is often based on policymakers' perception of the drug's risk, social vice, and cost to public health, as well as their belief that there is a gap in knowledge between the consumer and the manufacturer. Caffeine is available without restriction, alcohol and tobacco are heavily regulated, and drugs such as cocaine and opium are subject to criminal prohibitions.[35] Oral contraceptives, safe and effective medications for preventing pregnancy and treating some medical conditions, still require a healthcare provider's prescription.

Technological innovation in drug manufacturing has increased production and product complexity, increasing the risk of therapeutic failure or death linked to consumer ignorance. This is the justification for drug regulation. Over time, a regulatory hierarchy has evolved, affecting access to certain drugs. Until the late 19th century, most drug regulations in the United States were enacted at the state and local levels.[36] In the early 20th century federal legislation greatly expanded, initially with the Pure Food and Drug Act of 1906, which prohibited misbranded drugs, food, and drinks in interstate commerce and led to the establishment of the Food and Drug Administration (FDA). Over the years, the FDA's ability to regulate, prohibit, and criminalize drugs has exponentially expanded.

The United States has never had a completely unregulated drug market. In 1632, the Massachusetts General Court banned smoking in public.[37] The temperance movement has been a strong force in America since the 1830s. The enactment of Prohibition and the criminalization of certain drugs have been directly linked to public support. The zeal to control and limit drug use has resulted in a significant and unfortunate disjunction between regulation or prohibition and actual dangers.[38] For example, access to pseudoephedrine, a cold medication that is also a precursor drug to methamphetamine, has been significantly restricted in recent decades with unclear benefit. The policy and legal failure of the War on Drugs is well recognized and has been linked to wasted public funds, erosion of civil liberties, and the incarceration of a large number of US

35. Shmoop Editorial Team, "Law in History of Drugs in America," in *History of Drugs in America* (online: Shmoop University, last modified November 11, 2008).
36. Marc T. Law, "History of Food and Drug Regulation in the United States," in *EH.Net Encyclopedia of Economic and Business Histor*y, ed. Robert Whaples, accessed November 16, 2016.
37. Shmoop Editorial Team, "Law in History of Drugs in America."
38. David T. Courtwright, "A Short History of Drug Policy; or, Why We Make War on Some Drugs but Not on Others" (History Faculty Publications Paper No. 23, UNF Digital Commons, University of North Florida, October 2012), 24.

citizens. One in five people jailed in the United States is incarcerated for a drug offense, which amounts to almost half a million people.[39] The daily toll of drug overdoses fuels lawmakers' urge to act, but policy outcomes correlate poorly with social benefits. The Goldwater Institute initiated a campaign to give terminally ill patients access to investigational treatments, supported by public concern regarding delays inherent in the three-phase process of clinical trials. Right-to-try laws sponsored at the state level seek to bypass the FDA application process and expand access programs for patients who meet certain eligibility criteria.[40] The Institute of Medicine (now the National Academy of Medicine) has endorsed therapeutic use of marijuana, and polling shows that more than 70 percent of Americans support medical marijuana use with a doctor's prescription.[41] Multiple states have enacted legislation granting access to marijuana, but possession remains a federal crime.

The HOAP index's Pharmaceutical Access Subindex analyzes state-level freedom of access to (1) investigational treatments, (2) medical marijuana, (3) pseudoephedrine, and (4) oral contraceptives without physician prescription. See table A6 for the Pharmaceutical Access Subindex ranking and each state's score. Contrary to commentary in the original HOAP document, no state currently allows over-the-counter sales of oral contraceptives. See appendix C, note 14 for further explanation.

Provider Regulation

Regulations control the conduct of people engaged in certain activities, such as the provision of healthcare. Although regulators often have good intentions, regulations are always problematic because they tend to violate rights, not protect them, and limit opportunity and access to goods and services.

Some regulations, such as safety regulations, attempt to prevent rights violations from occurring in the first place. Even these regulations can be problematic, however. By their nature, they serve as rules that come between the voluntary arrangements of employers and employees, or providers and patients, to override

39. Peter Wagner and Bernadette Rabuy, "Mass Incarceration: The Whole Pie 2016," press release, Prison Policy Initiative, March 14, 2016.
40. Christina Corieri, "Everyone Deserves the Right to Try: Empowering the Terminally Ill to Take Control of Their Treatment" (Policy Report No. 266, Goldwater Institute, Phoenix, AZ, February 2014).
41. Karen O'Keefe, "State Medical Marijuana Implementation and Federal Policy," *Journal of Health Care Law & Policy* 16, no. 1 (2013).

TABLE A6. RANKING AND SCORES FOR THE PHARMACEUTICAL ACCESS SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Colorado	5.00	23	Idaho	3.00
2	Arizona	4.00	23	Maryland	3.00
2	California	4.00	23	Massachusetts	3.00
2	Florida	4.00	23	Missouri	3.00
2	Maine	4.00	23	New Hampshire	3.00
2	Montana	4.00	23	New Jersey	3.00
2	Nevada	4.00	23	New York	3.00
2	North Dakota	4.00	23	Ohio	3.00
2	Oregon	4.00	23	Pennsylvania	3.00
10	Michigan	3.75	23	Rhode Island	3.00
10	Virginia	3.75	23	Vermont	3.00
12	North Carolina	3.50	23	Washington	3.00
12	South Dakota	3.50	39	Alaska	2.75
12	Texas	3.50	39	Oklahoma	2.75
12	Utah	3.50	41	Louisiana	2.50
12	Wyoming	3.50	41	Mississippi	2.50
17	Alabama	3.25	41	Nebraska	2.50
17	Arkansas	3.25	41	South Carolina	2.50
17	Illinois	3.25	45	Kentucky	2.25
17	Indiana	3.25	45	New Mexico	2.25
17	Minnesota	3.25	45	West Virginia	2.25
17	Tennessee	3.25	48	Iowa	2.00
23	Connecticut	3.00	49	Georgia	1.75
23	Delaware	3.00	49	Wisconsin	1.75
23	District of Columbia	3.00	51	Kansas	1.25
23	Hawaii	3.00			

Note: Tied ranks reflect tied scores.

the judgments of the people concerned.[42] Safety regulations can also shift the focus of the people involved from actual safety to mere compliance with the law, which does not guarantee safety. Other regulations represent more of an attempt to engineer or "fine-tune" society or the economy to steer it toward a particular outcome. These types of regulations can protect certain industry actors from competitors, protect consumers from industry in general, or reduce the public's spending in some area such as healthcare. Such interventions invariably have

42. Harry Binswanger, "What Is Objective Law?," *Intellectual Activist* 6, no. 2 (1992).

TABLE A7. RANKING AND SCORES FOR THE PROVIDER REGULATION SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Kansas	4.00	27	Alabama	2.33
1	Pennsylvania	4.00	27	Florida	2.33
1	Wisconsin	4.00	27	Iowa	2.33
4	Idaho	3.67	27	Louisiana	2.33
5	Arizona	3.33	27	Michigan	2.33
5	Illinois	3.33	27	Oklahoma	2.33
5	North Dakota	3.33	33	Alaska	2.00
5	Wyoming	3.33	33	New York	2.00
9	California	3.00	33	Ohio	2.00
9	Hawaii	3.00	33	Rhode Island	2.00
9	Missouri	3.00	37	Connecticut	1.67
9	Nebraska	3.00	37	Maine	1.67
9	Oregon	3.00	37	Maryland	1.67
9	South Dakota	3.00	37	Massachusetts	1.67
15	Arkansas	2.67	37	Mississippi	1.67
15	Colorado	2.67	37	Washington	1.67
15	Delaware	2.67	37	District of Columbia	1.67
15	Indiana	2.67	44	Georgia	1.33
15	Minnesota	2.67	44	New Jersey	1.33
15	Montana	2.67	44	North Carolina	1.33
15	Nevada	2.67	44	Tennessee	1.33
15	New Hampshire	2.67	44	Vermont	1.33
15	New Mexico	2.67	44	Virginia	1.33
15	South Carolina	2.67	44	West Virginia	1.33
15	Texas	2.67	51	Kentucky	1.00
15	Utah	2.67			

Note: Scores are rounded to the nearest hundredth. Tied ranks reflect tied scores.

unintended consequences, however, which are often used as justification for further interventions.

The HOAP index's Provider Regulation Subindex evaluates state-level performance in three areas: (1) certificate-of-need (CON) laws, (2) regulation of compounding pharmacies, and (3) prescription monitoring mandates. See table A7 for the Provider Regulation Subindex ranking and each state's score.

The first indicator examines certificate-of-need laws: laws that require healthcare providers to prove to their state government that certain new or expanded services and investments are economically necessary and that they will not lead to greater healthcare spending. Observing that greater capacity in the

healthcare system (e.g., hospitals, beds, magnetic resonance imaging scanners) could lead to greater utilization and potential duplication of services, many states adopted CON laws to limit the healthcare infrastructure in their regions and align the industry with "public need."[43] It is arguable, however, whether CON laws have achieved their practical goal. Some studies suggest CON laws have resulted in modest cost containment, while other studies have found that CON laws have in fact raised total healthcare spending by causing prices to rise.[44] Moreover, the laws interfere with healthcare providers' ability to invest in the equipment and services that they wish to offer. The greater the number of CON laws a state has, the lower its score for this indicator.

The second indicator considers laws controlling the practices of sterile drug compounding pharmacies. According to the FDA, compounding pharmacies are facilities in which a pharmacist "combines, mixes, or alters ingredients of a drug to create a medication tailored to the needs of an individual patient."[45] The U.S. Pharmacopeial Convention (USP) has developed a set of standards for compounding practices (referred to as Chapter 797), which many pharmacies use. Rather than allowing pharmacies to adopt, modify, or deviate based on their own judgment, however, some states have mandated full or partial compliance with this code. States that allow discretion scored higher for this indicator.

The third and final indicator concerns state programs that electronically track prescriptions for controlled substances. The intent of these programs is to help state agencies curb substance abuse by locating "pill mill" clinics or providers prescribing in an unethical fashion. Many states now require prescribers to query a prescription drug monitoring program before writing prescriptions for controlled substances. However, mandates can introduce hassle into the lives of patients and providers, and failure to participate can result in substantial punitive actions against the medical provider, including imprisonment and loss of

43. Pamela C. Smith and Dana A. Forgione, "The Development of Certificate of Need Legislation," *Journal of Health Care Finance* 36, no. 2 (2009); Patrick A. Rivers, Myron D. Fottler, and Mustafa Zeedan Younis, "Does Certificate of Need Really Contain Hospital Costs in the United States?," *Health Education Journal* 66, no. 3 (2007).

44. James Bailey, "Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate-of-Need Laws" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2016); Christopher J. Conover and Frank A. Sloan, "Does Removing Certificate-of-Need Regulations Lead to a Surge in Health Care Spending?," *Journal of Health Politics, Policy and Law* 23, no. 3 (1998).

45. "Compounding and the FDA: Questions and Answers," US Food and Drug Administration, last modified October 6, 2015.

a professional license.[46] This has a potentially chilling effect on drug access for pain management. For this indicator, the more voluntary a state's prescription drug monitoring program, the higher the state scored.

Public Health

"Public health" as defined by the Institute of Medicine is "what we, as a society, do collectively to assure the conditions for people to be healthy."[47] Public health officials commonly use regulations to reduce risk or harm to the population under their surveillance. To reduce the risk of public harm, governments sometimes infringe individuals' civil liberties, such as their freedom of movement and bodily integrity.[48] For example, upholding the detention of a person with tuberculosis, a California appellate court declared in 1966 that "health regulations enacted by the state under its police power . . . in a general way are not affected by constitutional provisions, either of the state or national government."[49] Counterbalancing the state's ability to enforce public health measures is the "harm principle."[50] The "harm principle" is a core value of public health law and holds that competent adults should have freedom of action unless they pose a significant risk to other people or to property. The HOAP index's Public Health Subindex analyzes state-level regulations affecting the following personal and business interests: (1) access to and use of e-cigarettes, (2) the ability to purchase naloxone over the counter to counteract opioid overdoses, and (3) the promotion of "Good Samaritan" laws meant to protect nonprofessionals who intervene in a drug overdose or cardiac arrhythmia. See table A8 for the Public Health Subindex ranking and each state's score.

E-cigarettes, which have been growing in popularity since they were introduced to the US market in 2007,[51] are under strict regulatory scrutiny. Public health officials fear e-cigarettes' potential for stimulating nicotine addiction, youth access, and the renormalization of smoking. However, multiple clinical studies suggest that electronic cigarettes might decrease smoking-related morbidity and

46. Rebecca L. Haffajee, Anupam B. Jena, and Scott G. Weiner, "Mandatory Use of Prescription Drug Monitoring Programs," *JAMA* 313, no. 9 (2015).
47. Institute of Medicine, *The Future of Public Health* (Washington, DC: National Academy Press, 1988), 1.
48. Institute of Medicine, *Future of Public Health*, 1.
49. Ronald Bayer, "The Continuing Tensions between Individual Rights and Public Health: Talking Point on Public Health versus Civil Liberties," *EMBO Reports* 8, no. 12 (2007): 1100.
50. Gostin, "Public Health," 144.
51. Marie-Claude Tremblay et al., "Regulation Profiles of e-Cigarettes in the United States: A Critical Review with Qualitative Synthesis" (BMC Medicine, BioMed Central, 2015), 1.

TABLE A8. RANKING AND SCORES FOR THE PUBLIC HEALTH SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Louisiana	4.67	27	Arkansas	3.67
1	Massachusetts	4.67	27	Florida	3.67
1	Michigan	4.67	27	Hawaii	3.67
1	Nevada	4.67	27	Idaho	3.67
1	Wisconsin	4.67	27	Iowa	3.67
6	Alaska	4.33	27	Kentucky	3.67
6	Indiana	4.33	27	North Carolina	3.67
6	Missouri	4.33	27	North Dakota	3.67
6	Montana	4.33	27	South Carolina	3.67
6	New Mexico	4.33	27	South Dakota	3.67
6	New York	4.33	27	Virginia	3.67
6	Pennsylvania	4.33	27	District of Columbia	3.67
6	Rhode Island	4.33	39	Arizona	3.33
6	West Virginia	4.33	39	California	3.33
15	Alabama	4.00	39	Illinois	3.33
15	Colorado	4.00	39	Kansas	3.33
15	Georgia	4.00	39	Minnesota	3.33
15	Maryland	4.00	39	New Jersey	3.33
15	Mississippi	4.00	39	Oklahoma	3.33
15	Nebraska	4.00	39	Oregon	3.33
15	New Hampshire	4.00	39	Utah	3.33
15	Ohio	4.00	39	Wyoming	3.33
15	Tennessee	4.00	49	Connecticut	3.00
15	Texas	4.00	49	Delaware	3.00
15	Vermont	4.00	49	Maine	3.00
15	Washington	4.00			

Note: Scores are rounded to the nearest hundredth. Tied ranks reflect tied scores.

mortality.[52] Therefore, states that regulate e-cigarettes less receive higher scores for this indicator.

As a result of increasing opioid addiction and overdose, communities and government agencies are actively working to provide liberal access to naloxone, a prescription drug that is safe and can reverse overdose and respiratory depression.[53]

52. Peter Hajek et al., "Electronic Cigarettes: Review of Use, Content, Safety, Effects on Smokers and Potential for Harm and Benefit," *Addiction* 109, no. 11 (2014).
53. Corey Davis, "Naloxone for Community Opioid Overdose Reversal" (Public Health Law Research, Robert Wood Johnson Foundation, June 2015), 2.

States that permit over-the-counter purchases of naloxone scored higher for this indicator.

A 911 call can mean the difference between life and death for someone experiencing a drug overdose or cardiac arrhythmia. Good Samaritan laws provide those assisting an injured or endangered person with some legal protection from liability for any harm that occurs during that assistance.[54] Good Samaritan laws also protect people who intervene to prevent harm from an opioid overdose from criminal prosecution for possession of drugs or intoxication. States that grant more protection to people attempting to help others scored higher for this indicator.

Taxation

Taxation by its nature is involuntary and compulsory. Through coercion, taxation levies a financial charge on individuals and entities, limiting their opportunities to invest, save, or spend in the ways that they see fit. In this index, states with less taxation are scored as better protectors of opportunity than states with more taxation. The HOAP index's Taxation Subindex evaluates three areas of state taxation that relate to healthcare: (1) provider taxes, (2) health savings account (HSA) taxes, and (3) medical device taxes. See table A9 for the Taxation Subindex ranking and each state's score.

The first indicator refers to the level of taxation that states place on healthcare providers, including nursing homes and inpatient facilities (though usually not individual physicians). Funds from provider taxes can be used for any state purpose, including education and transportation, but are often worked back into state Medicaid programs to trigger the release of federal matching funds.[55] In some cases, the tax is partially paid back to providers in the form of increased reimbursement rates. Some states have multiple provider taxes in place. Other states have repealed their provider taxes, usually in the belief that the taxes were ineffective and unfair and drove physicians out of state.[56] Since the rates and types of provider taxes differ and cannot be directly compared, the indicator evaluates states on the basis of the number of taxes they collect.

54. Eboni Morris, "Liability under 'Good Samaritan' Laws," *AAOS Now* 8, no. 1 (2014): 34.
55. Wanda Fowler, "Provider Taxes: A Revenue Source for Health Care" (Council of State Governments, June 2010).
56. David C. Markel, Peter J. Sauer, and Ralph B. Blasier, "Is a Physician 'Provider Tax' the Solution to Michigan's Medicaid Woes?," *HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery* 9, no. 3 (2013).

TABLE A9. RANKING AND SCORES FOR THE TAXATION SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Alaska	5.00	18	Maine	3.67
2	Delaware	4.67	18	Massachusetts	3.67
2	Nevada	4.67	18	Missouri	3.67
2	North Dakota	4.67	18	New Hampshire	3.67
2	Virginia	4.67	18	New York	3.67
2	Wyoming	4.67	18	North Carolina	3.67
7	Oregon	4.33	18	Oklahoma	3.67
7	South Dakota	4.33	18	Pennsylvania	3.67
9	Arizona	4.00	18	Vermont	3.67
9	Hawaii	4.00	18	Wisconsin	3.67
9	Kansas	4.00	37	District of Columbia	3.33
9	Michigan	4.00	37	Kentucky	3.33
9	Montana	4.00	37	Maryland	3.33
9	Nebraska	4.00	37	New Mexico	3.33
9	Rhode Island	4.00	37	Ohio	3.33
9	South Carolina	4.00	37	Utah	3.33
9	Texas	4.00	37	West Virginia	3.33
18	Arkansas	3.67	44	Illinois	3.00
18	Colorado	3.67	44	Minnesota	3.00
18	Connecticut	3.67	44	Mississippi	3.00
18	Florida	3.67	44	Tennessee	3.00
18	Georgia	3.67	44	Washington	3.00
18	Idaho	3.67	49	New Jersey	2.33
18	Indiana	3.67	50	Alabama	2.00
18	Iowa	3.67	50	California	2.00
18	Louisiana	3.67			

Note: Scores are rounded to the nearest hundredth. Tied ranks reflect tied scores.

The second indicator evaluates whether and how much states tax HSA contributions and HSA earnings. Health savings accounts are special accounts individuals can use to save money for medical expenses. Paired with a high-deductible health insurance policy, an HSA can be an important piece of responsible planning for healthcare expenses. HSAs form part of the foundation of the consumer-directed healthcare movement, as they "shift the locus of rights and responsibilities for financing healthcare from governments and employers toward consumers."[57]

57. James C. Robinson, "Health Savings Accounts—the Ownership Society in Health Care," New *England Journal of Medicin*e 353, no. 12 (2005).

With an HSA, individuals can save during their healthy years for unpredictable medical expenses in later years. HSAs are undercut, however, when their tax-advantaged nature is either revoked or never granted in the first place. Most states do not tax HSA contributions— these states scored highest for this indicator. Some states, however, do tax HSA contributions, and some states tax HSA earnings.

The third and final indicator concerns state taxes on medical devices, which are distinct from the federal medical device tax that was enacted in the ACA and is currently suspended. Medical devices are generally defined as instruments, apparatuses, machines, implements, and other items that are used in the cure, treatment, or prevention of disease.[58] Drugs are not considered medical devices, but durable medical equipment such as wheelchairs, crutches, and prosthetic aids typically are.[59] Some states do not tax medical devices because they are nontaxing states for essentially all retail goods. Other states do tax retail goods but offer an exemption for medical devices if the purchaser has a prescription for the device. These exemptions range from very broad and all-encompassing to relatively narrow (e.g., limited to just certain classes of items, such as ostomic items, prosthetics, and oxygen components and systems). States with fewer medical device taxes scored higher on this indicator.

Telemedicine

Telemedicine is commonly defined as the use of telecommunications technology for the remote diagnosis and treatment of patients.[60] Increasingly, practitioners are finding that telemedicine can be used to supplement or substitute for face-to-face contact between patients and providers, and that care delivered via telecommunications technology often can be of the same quality as care delivered in the traditional way.[61] Many observers believe that increased use of telemedicine could also lower healthcare system costs while improving healthcare accessibility for many patient populations.

As a new and rapidly developing technology, telemedicine has the potential to transform healthcare delivery. Nevertheless, some third-party payers do not reimburse for telemedicine, and a lack of reimbursement on the part of

58. Food and Drug Administration, "What Is a Medical Device?," last updated December 28, 2015, http://www.fda.gov/AboutFDA/Transparency/Basics/ucm211822.htm.
59. FDA, "What Is a Medical Device?"
60. Sanjay Sood et al., "What Is Telemedicine? A Collection of 104 Peer-Reviewed Perspectives and Theoretical Underpinnings," *Telemedicine and e-Health* 13, no. 5 (2007).
61. Rashid L. Bashshur, "On the Definition and Evaluation of Telemedicine," *Telemedicine Journal* 1, no. 1 (2009).

government payers in particular has hindered its adoption. In telemedicine's early days, opponents argued with some justification that there was insufficient evidence that telemedicine was safe, secure, and effective. Pioneers, however, have shown that in a variety of clinical areas (including psychiatry and the management of diabetes and other chronic diseases), it is possible to deliver good care using telemedicine.[62]

Acting as a healthcare payer—as states do under Medicaid—is not typically associated with limited government. However, given that Medicaid does exist, the physicians and clinicians who participate in the program ought to be able to use current technologies and techniques and receive usual and customary payment when they do. Provided that a technology is likely to be effective, as telemedicine has been shown to be, physicians should be reimbursed for care delivered using it.

The HOAP index's Telemedicine Subindex evaluates states in four areas: (1) whether the state reimburses Medicaid providers at parity for telemedicine; (2) how restrictive the state's telepresenter requirements are, if it has any; (3) whether the state reimburses Medicaid providers at parity for remote patient monitoring; and (4) whether the state allows online prescribing. See table A10 for the Telemedicine Subindex ranking and each state's score.

The first indicator evaluates the extent to which states reimburse for services provided via telemedicine (primarily live video) at the same rates as for comparable services provided in another way. Some states reimburse at full parity, while others restrict reimbursement by geography, service, or setting—or do not reimburse for telemedicine at all. For this indicator, states whose Medicaid programs reimbursed for telemedicine received higher scores.

The second indicator assesses the requirement enforced by some states that an assistant (termed a "telepresenter") be physically present with the patient during a telemedicine encounter. Some states require that a telepresenter be in the room with a patient, while other states require that a telepresenter be available on site but not necessarily with the patient. Some states do not require a telepresenter. While it can be desirable and even necessary to have such assistance in some cases, the decision whether to use a telepresenter should be left to

62. Ines Hungerbuehler et al., "Home-Based Psychiatric Outpatient Care through Videoconferencing for Depression: A Randomized Controlled Follow-Up Trial," *JMIR Mental Health* 3, no. 3 (2016); Beate-Christin Hope Kolltveit et al., "Telemedicine in Diabetes Foot Care Delivery: Health Care Professionals' Experience" (BMC Health Services Research, BioMed Central, 2016); Stefano Omboni, Marina Caserini, and Claudio Coronetti, "Telemedicine and M-Health in Hypertension Management: Technologies, Applications and Clinical Evidence," *High Blood Pressure & Cardiovascular Prevention* 23, no. 3 (2016).

TABLE A10. RANKING AND SCORES FOR THE TELEMEDICINE SUBINDEX

Rank	Jurisdiction	Score	Rank	Jurisdiction	Score
1	Maine	4.50	22	New Hampshire	3.00
1	Mississippi	4.50	22	Ohio	3.00
1	Washington	4.50	22	Tennessee	3.00
4	Alaska	4.00	30	District of Columbia	2.75
4	Vermont	4.00	30	South Dakota	2.75
6	Arkansas	3.75	32	Alabama	2.50
6	Colorado	3.75	32	Arizona	2.50
6	Utah	3.75	32	Maryland	2.50
9	Connecticut	3.50	32	Michigan	2.50
9	Florida	3.50	32	Montana	2.50
9	Hawaii	3.50	32	Oregon	2.50
9	Indiana	3.50	32	Rhode Island	2.50
9	Kansas	3.50	32	South Carolina	2.50
9	Louisiana	3.50	32	West Virginia	2.50
9	Nebraska	3.50	32	Wisconsin	2.50
9	Nevada	3.50	32	Wyoming	2.50
9	New Mexico	3.50	43	Georgia	2.25
9	Oklahoma	3.50	43	Minnesota	2.25
19	Massachusetts	3.25	43	Missouri	2.25
19	Texas	3.25	43	New York	2.25
19	Virginia	3.25	43	North Dakota	2.25
22	California	3.00	48	Illinois	2.00
22	Delaware	3.00	48	New Jersey	2.00
22	Idaho	3.00	48	North Carolina	2.00
22	Iowa	3.00	51	Pennsylvania	1.75
22	Kentucky	3.00			

Note: Tied ranks reflect tied scores.

the physician and patient. States without telepresenter requirements received higher scores for this indicator.

The third indicator evaluates states' Medicaid reimbursement policy with respect to the specific service of remote patient monitoring. States place varying restrictions on this type of telemedicine, in some cases limiting its use to the treatment of certain conditions or limiting the type of devices that can be used or the information that can be collected. For this indicator, states with fewer restrictions received higher scores.

The fourth and final indicator weighs whether a physician is allowed to prescribe a drug to a patient on the basis of an online visit, encounter, or interaction.

As a protection, all states require that physicians and patients must establish a relationship before the physician may write a prescription; however, states vary in what they require and whether they allow the relationship to be established using telemedicine. Some states do not allow online prescribing at all. For this indicator, states that allowed more freedom for online prescribing scored higher.

APPENDIX B. METHODOLOGY

The HOAP index uses a 1|2|3|4|5 Likert scale based on our assessment of state policy or state conditions impacting a free market. States are scored on the basis of data obtained from specific datasets. For any indicator, a score of 1 represents "least free" and a score of 5 represents "most free" in general terms. We chose data sources with consideration for their quality, accuracy, and reproducibility. The dates of the data vary slightly across different indicators. The most recent data were used wherever it was possible and practical.

The following sections define the 10 subindexes and the 37 indicators used to calculate them. Each subindex has equal weight within the overall HOAP index, and each indicator has equal weight with the other indicators that compose its subindex.

Corporate Subindex

The Corporate Subindex assesses how much flexibility each state grants healthcare professionals and others with regard to ownership, business structure, and employment in the healthcare sector. States that apply the corporate practice of medicine doctrine to the management of healthcare facilities and organizations inhibit the development of innovative business models in the healthcare sector; states that do not constrain the corporate practice of medicine promote openness and accessibility in their healthcare systems.

We used a binary scale for each indicator in the Corporate Subindex during our initial analysis and then converted the final scores to 1 or 5 to fit the Likert scale used throughout the HOAP index. We chose a binary scale for these indicators because corporate practice of medicine regulations are so complex and because it is difficult to tell whether a state attorney general will decide to enforce them.

The data we used in the Corporate Subindex come primarily from *Corporate Practice of Medicine: A Fifty State Survey*, published by the American Health Lawyers Association. Other sources were also compiled to supplement this survey.[63] The subindex includes four indicators.

63. Stuart I. Silverman et al., *Corporate Practice of Medicine: A Fifty State Survey* (Washington, DC: American Health Lawyers Association, 2014); Michael F. Schaff and Glenn P. Prives, "The Corporate Practice of Medicine Doctrine: Is It Applicable to Your Client?," *Business Law & Governance* 3, no. 2 (2010); Michal, Pekarske, and McManus, "Corporate Practice of Medicine Doctrine 50 State Survey Summary."

State allows the corporate practice of medicine. States that enshrine the corporate practice of medicine doctrine in state law and ban the corporate practice of medicine restrict the ability of healthcare professionals and other innovators to devise new and potentially more efficient ways to supply healthcare services. Therefore, states that do so received a score of 1 for this indicator. Those that allow the corporate practice of medicine received a score of 5.

State allows businesses to employ licensed healthcare professionals. One way states implement the corporate practice of medicine doctrine is by prohibiting businesses from employing licensed healthcare professionals. States that do this received a score of 1 for this indicator. States that allow businesses to employ licensed physicians and other professionals received a score of 5.

State allows nonlicensed individuals to own/operate medical entities. Another way states implement the doctrine is by prohibiting anyone but a licensed medical professional to own or operate a medical facility or organization. States that do this received a score of 1 for this indicator. States that allow nonlicensed individuals to own and operate medical entities received a score of 5.

State allows licensed individuals to split fees with nonlicensed individuals. Some states also implement the doctrine by prohibiting licensed health professionals from splitting fees for medical services with people who don't have medical licenses (or with companies or other organizations). States that prohibit fee-splitting received a score of 1 for this indicator. States that allow fee-splitting received a score of 5.

Direct Primary Care Subindex

The Direct Primary Care Subindex assesses how conducive each state's environment is to the establishment of direct primary care practices. Laws enabling DPC have the potential to make state healthcare markets more open and accessible. The Direct Primary Care Subindex includes three indicators.

State has pro-DPC laws. States with laws protecting DPC received a score of 5, states with laws proposed to protect DPC received a score of 4, and states without current or proposed laws to protect DPC received a score of 3. No states received scores of 2 or 1, because no states have laws or regulations proposed or in effect that would limit DPC. (Unfortunately, there is no clear or reproducible

way to determine which states have aggressive insurance commissioners actively pursuing or shutting down DPC practices—the only way to obtain this information is to interview staff at each commissioner's office.) The data used for this indicator come from Direct Primary Care Frontier.[64] The data have been revised since the original HOAP release. See appendix C, note 1 for further information.

State has higher market demand for DPC. Market demand provides an estimate of how willing and legally able a state's population is to receive primary care through the DPC model. To estimate market demand in each state, we used the data compiled by Concierge Medicine Today's Doc Finder online search tool that compared the percentages of searches for DPC doctors that came from patients in different states.[65] States with strong market demand (defined as more than 5 percent of the searches) received a score of 5. States with moderate demand (defined as 3 percent, 4 percent, or 5 percent of the searches) received a score of 4. States with minimal demand (defined as 1 percent or 2 percent of the searches) received a score of 3. States with no demand (defined as zero percent of the searches) received a score of 2. States with market loss would have received a score of 1, but there were no such states.

State has more DPC practices per capita. This indicator uses the number of DPC practices per capita to evaluate whether (1) state laws and regulations make opening a DPC practice a simple and realistic option and (2) the state population is open to this alternative financial model and the differences in care that it offers. The number of DPC practices per capita was calculated by dividing the number of DPC practices in a state by the state's population. States' scores ranged from 5 (for a high density of DPC practices per capita) to 1 (for no DPC practices). Please see the data file accompanying HOAP for further details about how this indicator was calculated. The data used for this indicator come from an article published by the Journal of the American Board of Family Medicine.[66] The data have been revised since the original HOAP release. See appendix C, note 2 for further information.

64. Phillip Eskew, "Mapper," Direct Primary Care Frontier, August 7, 2017, http://www.dpcfrontier.com/mapper.
65. "Which States Receive the Most Amount of Patients Seeking Concierge Doctors? State by State Concierge Patient Search Results" (pie chart, Concierge Medicine Research Collective), 2009–2014, included in "2012–2015 Concierge Physician Salary Report," Concierge Medicine Today, September 9, 2015.
66. Eskew and Klink, "Direct Primary Care: Practice Distribution and Cost," figure 3.

Insurance Subindex

The Insurance Subindex evaluates how much flexibility insurers have to determine the structure and pricing of the health insurance policies they sell. The overarching idea for this subindex is that insurers ought to be free to design and price their health insurance products as they see fit and in ways that are actuarially sound. By facilitating a well-functioning insurance market, such freedom will enhance the openness and accessibility of the US healthcare system. The Insurance Subindex includes five indicators.

State mandates fewer health insurance benefits. States vary in the number of benefits that they make mandatory for insurers to include in their insurance products. No state has zero mandates, so no state received the highest possible score of 5 for this indicator. States with 1 to 4 mandates received a score of 4, states with 5 to 9 mandates received a score of 3, states with 10 to 19 mandates received a score of 2, and states with 20 or more mandates received a score of 1. The 2012 data used for this indicator come from a report from the Council for Affordable Health Insurance.[67] The data have been revised since the original HOAP release, and this April 2019 revision corrects two data points from June 2018. See appendix C, note 3 for further information.

State mandates less rate review. Some states reserve the authority to review the prices (or, usually, price increases) charged by health insurance companies. States received one of three possible scores for this indicator: 5 for having no mandatory rate review, 3 for requiring rate review in either individual or small group markets but not in both, and 1 for requiring rate review in both individual and small group markets. The data used for this indicator come from a 2010 report from Kaiser Family Foundation and a state statute compilation from Consumers Union dated 2014.[68] The data have been revised since the original HOAP release. See appendix C, note 4 for further information.

State does not expand on federal age rating limitations. Federal law limits the characteristics that insurers can use to determine the prices of their insurance

67. Victoria Craig Bunce, *Health Insurance Mandates in the States 2012* (Alexandria, VA: Council for Affordable Health Insurance, 2013).
68. Sabrina Corlette and Janet Lundy, "Rate Review: Spotlight on State Efforts to Make Health Insurance More Affordable," *Focus on Health Reform* (Henry J. Kaiser Family Foundation), December 2010; Elizabeth Imholz, Lynn Quincy, and Dena Mendelsohn, "50 State Overview: Statutes, Type of Rate Review and Public Participation," *Consumers Union*, April 2014.

products, with some exceptions. One of these exceptions is policyholder age. States can permit insurers to retain this pricing freedom, or they can further limit insurers through state law. States received one of three possible scores for this indicator: 5 for allowing age rating at the level the federal government allows it, 3 for allowing age rating but with more restrictions than the federal government imposes, and 1 for prohibiting age rating altogether. The data used for this indicator come from a 2014 report from the Commonwealth Fund.[69] The data have been revised since the original HOAP release. See appendix C, note 5 for further information.

State does not expand on federal tobacco rating limitations. Another exception to federal limitations on the characteristics that insurers can use to determine prices is policyholder use of tobacco products. States can permit insurers to retain this pricing freedom, or they can further limit insurers through state law. States received one of three possible scores for this indicator: 5 for allowing tobacco rating at the level the federal government allows it, 3 for allowing tobacco rating but with more restrictions than the federal government imposes, and 1 for prohibiting tobacco rating altogether. The data used for this indicator come from a 2014 Commonwealth Fund report.[70] The data have been revised since the original HOAP release. See appendix C, note 6 for further information.

State does not expand on federal geographic rating limitations. Another exception to federal limitations on the characteristics that insurers can use to determine prices is the geographic location of the policyholder's residence. States can permit insurers to retain this pricing freedom, or they can further limit insurers through state law. States received one of three possible scores for this indicator: 5 for allowing geographic rating at the level the federal government allows it, 3 for allowing geographic rating but with more restrictions than the federal government imposes, and 1 for prohibiting geographic rating altogether. The data used for this indicator come from a 2014 Commonwealth Fund report.[71] The data have been revised since the original HOAP release. See appendix C, note 7 for further information.

69. Justin Giovannelli, Kevin W. Lucia, and Sabrina Corlette, "Implementing the Affordable Care Act: State Approaches to Premium Rate Reforms in the Individual Health Insurance Market," Commonwealth Fund, December 2014.
70. Giovannelli, Lucia, and Corlette, "Implementing the Affordable Care Act."
71. Giovannelli, Lucia, and Corlette, "Implementing the Affordable Care Act."

Medical Liability Subindex

The Medical Liability Subindex measures how constrained physicians and other medical practitioners are by the threat of malpractice litigation. A perception that state-level tort risk is excessive is detrimental to the healthcare market. The Medical Liability Subindex includes three indicators.

Physicians pay fewer malpractice actions. The number of malpractice actions a medical practitioner can expect to pay influences the perception of state-level tort risk. We calculated this indicator by dividing the number of malpractice payments made in each state by the number of medical practitioners in the state and multiplying the result by 1,000 to generate a value for the state's score. States' scores ranged from 5 (a small number of claims paid per practitioner) to 1 (a large number of claims paid per practitioner). Please see the data file accompanying HOAP for further details about how this indicator was calculated. The data used for this indicator come from two 2015 tools from the National Practitioner Data Bank.[72] The data have been revised since the original HOAP release. See appendix C, note 8 for further information.

Physicians pay lower malpractice premiums. The amount of the malpractice insurance premiums a medical practitioner must pay also influences the perception of state-level tort risk. We calculated this indicator for each state by taking the unweighted average of annual malpractice premiums for internal medicine, general surgery, and obstetrics and gynecology practices. States with the lowest premiums (less than $20,000) received a score of 5, states with premiums between $20,000 and $40,999 received a score of 4, states with premiums between $41,000 and $60,999 received a score of 3, states with premiums between $61,000 and $80,000 received a score of 2, and states with the highest premiums (greater than $80,000) received a score of 1. The data used for this indicator come from an article published in the Medical Liability Monitor.[73] The data have been revised since the original HOAP release. See appendix C, note 9 for further information.

State has adopted more reforms to modulate malpractice litigation. For this indicator we analyzed 11 components to make a composite score using the criteria

72. "NPDB Research Statistics," National Practitioner Data Bank (US Department of Health and Human Services), 2015; "NPDB Data Analysis Tool," National Practitioner Data Bank (US Department of Health and Human Services).
73. Paul Greve and Susan Forray, "A Chain Reaction," *Medical Liability Monitor* 40, no. 10 (2015).

below. The 11 components are damage caps, joint liability, collateral source, attorney fees limited, periodic payments permitted, arbitration or mediation and pretrial screening, expert testimony and qualification, certificate of merit, statute of limitations, apology inadmissibility, and liability insurance mandates. We chose to use a binary scale of 0 and 1 for each component of the composite state score, owing to the complexity of tort regulations and the difficulty of determining to what extent regulations and reforms are enforced. We calculated the states' composite scores by adding their binary scores (which resulted in a maximum possible total score of 11) and then converting these total scores to the 1-to-5 Likert scale.

For each component's binary scale, factors supporting liability reform (and thus market freedom) gave the component a score of 1 while factors opposed to liability reform (and thus opposed to market freedom) gave the component a score of 0. States received a score of 5 for the indicator as a whole if eleven of the components scored 1, of 4 if only nine or ten of the components scored 1, of 3 if only seven or eight of the components scored 1, of 2 if only five or six of the components scored 1, and of 1 if fewer than five of the components scored 1. The data used for this indicator come from the American Medical Association.[74]

Occupational Regulation Subindex

The Occupational Regulation Subindex analyzes how onerous a state's licensure laws are to individuals seeking to practice in several medical professions. Healthcare practitioners ought to be free to offer their professional skills and services without facing undue government barriers—lowering the barriers that keep providers out of states' healthcare systems will increase the systems' openness and accessibility to patients as well as providers. The Occupational Regulation Subindex includes five indicators.

State allows medical licensure reciprocity with other states. States vary in the level of recognition they afford to medical licenses granted by other states. Offering reciprocity is a pro-freedom stance toward occupational regulation, whereas denying reciprocity hinders freedom. States received one of three possible scores for this indicator: 5 for allowing endorsement or reciprocity with few or no restrictions,[75]

74. American Medical Association, "State Medical Liability Legislative Activities."
75. Licensure by endorsement is "a process whereby a state issues an unrestricted license to practice medicine to an individual who holds a valid and unrestricted license in another jurisdiction." Federation of State Medical Boards, "Licensure by Endorsement: Final Report of the Ad Hoc Committee on Licensure by Endoresement, Adopted as Policy by the Federation of State Medical Boards in 1995," accessed November 23, 2016.

3 for allowing endorsement or reciprocity with substantial restrictions, and 1 for offering no endorsement or reciprocity. The data used for this indicator come from the 2014 table from the notable law firm Siskind Susser, PC.[76]

State has fewer continuing medical education requirements. Continuing medical education (CME) requirements are state-imposed training requirements professionals must fulfill in order to retain a medical license. States that require fewer CME hours place fewer barriers in the way of medical professionals' freedom to practice. States without a CME requirement received a score of 5 for this indicator, states that require only 1–19 hours of CME per year received a score of 4, states that require 20–29 hours of CME per year received a score of 3, states that require 30–39 hours of CME per year received a score of 2, and states that require 40 or more hours of CME per year received a score of 1. The data used for this indicator come from a 2016 table maintained by the CME firm AHC Media.[77] The data have been revised since the original HOAP release. See appendix C, note 10 for further information.

State allows nurse practitioners broad scope of practice. States can allow NPs to practice to the full extent of their license and training, or they can restrict them in various ways. Restrictions on NPs' scope of practice generally take the form of regulations delineating which tasks they may perform. States received one of three possible scores for this indicator: 5 for allowing NPs to practice to the full extent of their license and training, 3 for imposing "reduced practice" limitations on them, and 1 for imposing "restricted practice" limitations on them. The data used for this indicator come from the 2016 map produced by the American Association of Nurse Practitioners.[78] The data have been revised since the original HOAP release. See appendix C, note 11 for further information.

State has fewer optician licensing requirements. States can impose varying licensure requirements on opticians, generally in the form of required training time, required examinations, or both. More restrictive government requirements mean opticians are less free to practice their profession. States received one of three possible scores for this indicator: 5 for requiring no special license for opticians,

76. Siskind Susser, PC, "Chart of Physician Licensing Requirements by State," accessed November 23, 2016.
77. "State Requirements," CMEweb.com (AHC Media), last updated August 17, 2016.
78. American Association of Nurse Practitioners, "Nurse Practitioner State Practice Environment," last updated April 14, 2016.

3 for requiring opticians to have a license but mandating fewer than 730 days (i.e., two years) of education or experience, and 1 for requiring opticians to have a license and mandating more than 730 days of education or experience. The data used for this indicator come from a working paper published by the Mercatus Center at George Mason University that analyzes optician licensing requirements using 2012 data.[79]

State allows direct-entry midwifery. Some caregivers who gain experience in midwifery do so through self-study, apprenticeship, or other forms of training that are not officially recognized. States that allow such caregivers to practice midwifery are said to allow direct-entry midwifery. States received one of three possible scores for this indicator: 5 for allowing direct-entry midwifery and not requiring midwives to have a license, 3 for allowing direct-entry midwifery but requiring midwives to have a license, and 1 for not allowing direct-entry midwifery. The data used for this indicator come from the 2016 table produced dually by the Midwives Alliance of North America and the North American Registry of Midwives.[80] The data have been revised since the original HOAP release. See appendix C, note 12 for further information.

Pharmaceutical Access Subindex

The Pharmaceutical Access Subindex analyzes whether (and how freely) states allow patients to access certain classes of drugs, including experimental and unconventional treatments. It includes four indicators.

State allows greater access to experimental drugs. State laws allowing patients to access investigational treatments—treatments that have not yet received full FDA approval—have the potential to save lives. We used a binary scale for this indicator and then converted the final scores to 1 or 5 to fit the Likert scale used throughout the HOAP index. States for which no legislation has been enacted supporting open access to investigational treatments received a score of 1; states for which legislation has been enacted received a score of 5. The data used for

79. Edward J. Timmons and Anna Mills, "Bringing the Effects of Occupational Licensing into Focus: Optician Licensing in the United States" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, February 2015).
80. North American Registry of Midwives, "Direct Entry Midwifery State-by-State Legal Status," July 8, 2016.

this indicator come from a 2015 report from the National Conference of State Legislatures.[81]

State allows access to medical marijuana. Though possession of marijuana is a federal crime, several states have passed laws that allow patients to access marijuana for medical purposes. Such laws promote freedom in the healthcare market and are thus considered evidence of greater openness and access. This indicator follows the same rubric as the Marijuana Policy Project's report "Medical Marijuana Protections in the 50 States." The report categorizes the states into four groups on the basis of the presence of laws that give and protect access to medical marijuana and cannabidiol (CBD). In some instances, laws might exist but be unworkable, meaning they do not make a realistic provision for access to medical marijuana and CBD. We added a category for states that have no laws at all protecting access to medical marijuana and CBD. States with an effective and comprehensive medical marijuana law received a score of 5, states with a workable (but not comprehensive) CBD law received a score of 4, states with an unworkable CBD law received a score of 3, states with an unworkable medical marijuana law received a score of 2, and states permitting no access to medical marijuana received a score of 1. The data used for this indicator come from the Marijuana Policy Project.[82] The data have been revised since the original HOAP release. See appendix C, note 13 for further information.

State allows easier access to pseudoephedrine. Though pseudoephedrine is a precursor drug to methamphetamine, it is also commonly used to treat colds where state governments do not restrict patients' access to it. States that merely impose electronic tracking and block sales of pseudoephedrine when quantity limits are exceeded received a score of 5. States that impose more stringent quantity limits, block sales to prior meth users, and require pharmacist discretion and determination for proper use received a score of 4. States that allow pseudoephedrine only with a prescription received a score of 3. States that categorize it as a schedule V prescription drug receive a score of 2. States that categorize it as a schedule III prescription drug received a score of 1.[83] The data used for this

81. Richard Cauchi, "Right to Try: Experimental Prescription Drugs State Laws and Legislation for 2014 and 2015," National Conference of State Legislatures, March 2015.
82. "Medical Marijuana Protections in the 50 States," Marijuana Policy Project.
83. For a comprehensive definition of drug schedules, see "Drug Scheduling," United States Drug Enforcement Administration, https://www.dea.gov/druginfo/ds.shtml.

indicator come from a 2016 report from the National Association of State Controlled Substances Authorities.[84]

State allows access to oral contraceptives without physician prescription. Many states require a prescription for oral contraceptives, though the medication is safe and effective. We used a binary scale for this indicator and then converted the final scores to 1 or 5 to fit the Likert scale used throughout the HOAP index. States for which no legislation has been enacted supporting access to oral contraceptives without a physician's prescription received a score of 1; states for which legislation has been enacted received a score of 5. The data used for this indicator come from a 2016 Pew Charitable Trusts report.[85] The name of this indicator has been changed to clarify that some states allow access to oral contraceptives without a physician prescription, but no state allows over-the-counter access. Also, the data have been revised since the original HOAP release. See appendix C, note 14 for further information.

Provider Regulation Subindex

The Provider Regulation Subindex examines how much freedom the entities that provide healthcare have to determine their operations. In order to promote openness and access in the US healthcare system, healthcare providers (and provider organizations such as hospitals) ought to be free to offer their services in ways that they see fit, and not be subject to unwarranted government regulation. The Provider Regulation Subindex includes three indicators.

State has fewer certificate-of-need restrictions. Many CON laws were enacted by states in an attempt to restrict the supply of healthcare services and thereby slow the rise in healthcare expenditures; another motive was to guarantee hospitals sufficient financial wherewithal to fund charity care. CON laws require medical providers (or prospective providers) to obtain the state government's permission before offering new or expanded services. States' scores for this indicator were determined by the number of services that they subject to CON laws. States that have no CON laws received a score of 5, states in which 1 to 5 services are subject

84. Patricia Freeman, Jeffery Talbert, and Suzanne Troske, "Impact of State Laws Regulating Pseudoephedrine on Methamphetamine Production and Abuse," National Association of State Controlled Substances Authorities, April 2016.
85. Sarah Breitenbach, "States Start to Let Pharmacists Prescribe Birth Control Pills," Pew Charitable Trusts, February 2016.

to CON regulations received a score of 4, states in which 6 to 9 services are subject to CON regulations received a score of 3, states in which 10 to 19 services are subject to CON regulation received a score of 2, and states in which 20 or more services are subject to CON regulation received a score of 1. The 2016 data used for this indicator come from a chart published by the Mercatus Center.[86]

State puts fewer restrictions on compounding pharmacies. Compounding pharmacies are laboratories in which pharmacists mix drugs to create custom medications for patients; they are an important part of the healthcare delivery system. Many states regulate compounding pharmacies more tightly than they do ordinary pharmacies. States received one of three possible scores for this indicator: 5 for allowing compounding pharmacies full discretion to determine their own operations, 3 for mandating that compounding pharmacies follow at least part of the United States Pharmacopeia Chapter 797 standards or equivalent standards for sterile compounding, and 1 for mandating that compounding pharmacies follow all the USP Chapter 797 standards or equivalent standards for sterile compounding and forbidding variation.[87] Some states have pending mandates; we scored these states as having no mandate because their mandates are either not certain to be adopted or not yet in effect. The data used for this indicator come from a 2016 report from the Pew Charitable Trust.[88] The data have been revised since the original HOAP release. See appendix C, note 15 for further information.

State lacks burdensome prescription monitoring requirements. Prescription drug monitoring programs are government surveillance programs that collect and monitor data submitted by pharmacies and healthcare providers. They are established in the name of preventing drug abuse, but they controvert the goals of openness and access in the healthcare system because they can cause providers and patients excessive cost, hassle, and privacy concerns. States that have no prescription drug monitoring programs received a score of 5 for this indicator. States

86. Christopher Koopman and Anne Philpot, "The State of Certificate-of-Need Laws in 2016," Mercatus Center at George Mason University, September 27, 2016. See also American Health Planning Association, "2016 National Directory: Certificate of Need Programs, Health Planning Agencies," 2016; Matthew D. Mitchell and Christopher Koopman, "40 Years of Certificate-of-Need Laws across America," Mercatus Center at George Mason University, September 27, 2016.
87. United States Pharmacopeia Chapter 797 describes conditions and practices meant to prevent patients from suffering harm that could result from microbial contamination, excessive bacterial endotoxins, variability in intended strength, unintended chemical and physical contaminants, and ingredients of inappropriate quality in compounded sterile preparations.
88. A. Simon Pickard et al., "National Assessment of State Oversight of Sterile Drug Compounding" (report, Pew Charitable Trusts, February 2016).

that have established voluntary monitoring programs received a score of 4. States that require providers to enroll in a monitoring program but allow them some choice about how to use it received a score of 3. States that require providers to use a monitoring program but do not impose substantial punitive consequences if they fail to do so received a score of 2. States that impose substantial punitive consequences on providers who do not use a monitoring program received a score of 1. The data used for this indicator come from the 2016 Injury Prevention Legislation Database continually maintained by the National Conference of State Legislatures (in conjunction with the Centers for Disease Control and Prevention).[89] The data have been revised since the original HOAP release, and this April 2019 revision corrects one data point from June 2018. See appendix C, note 16 for further information.

Public Health Subindex

The Public Health Subindex evaluates which states allow residents the easiest access to substance-abuse remedies and provide the greatest protection to individuals who offer nonprofessional emergency medical assistance to others. Both access to remedies and protection for "Good Samaritans" have the potential to save lives. This subindex includes three indicators.

State allows access to e-cigarettes. Many states have begun to regulate e-cigarettes in an attempt to restrict residents' access to them. States with no laws regulating e-cigarettes would have received a score of 5, but no state attained this score owing to a federal ban on the sale of e-cigarettes to minors that was issued on May 5, 2016. States that banned only sales to minors or use by minors received a score of 4. States that banned sales to minors or use by minors and prohibited the use of e-cigarettes in certain venues received a score of 3. States with a mixture of multiple e-cigarette regulations received a score of 2. States that comprehensively prohibited e-cigarette use received a score of 1. The data used for this indicator come from an article published by BioMed Central.[90] The data have been revised since the original HOAP release. See appendix C, note 17 for further information.

89. National Conference of State Legislatures, "Injury Prevention Legislation Database," January 2016. See also National Alliance for Model State Drug Laws, "Prescription Monitoring Programs—State Law and Policy Profiles," January 2015.
90. Tremblay et al., "Regulation Profiles of e-Cigarettes in the United States."

State allows access to naloxone. Many states restrict residents' access to naloxone, which can reverse an opioid overdose, by prohibiting over-the-counter sales of the drug. States that allow patients to purchase naloxone without a prescription received a score of 5. States that allow lay distribution received a score of 4.[91] States that allow third-party prescription or physician standing orders received a score of 3.[92] States with no laws providing ease of access to the drug received a score of 1. The score of 2 would indicate that the state has only liability protection for administering naloxone, but the authors excluded this option because of updates in state laws as reflected in the data source. The data used for this indicator come from a 2017 Network for Public Health Law report (the June 2018 update listed the 2016 edition of the same report).[93] The data have been revised since the original HOAP release, and this April 2019 revision corrects 36 data points from June 2018. See appendix C, note 18 for further information.

State has strong "Good Samaritan" protection. States with Good Samaritan laws encourage bystanders who might otherwise be legally compromised to intervene and attempt to help people experiencing medical emergencies. States whose laws protect both people who intervene in an overdose situation and people who intervene to use a defibrillator received a score of 5. States whose laws protect either people who intervene in an overdose situation or people who intervene to use a defibrillator (but not both) received a score of 4. States that have no Good Samaritan laws received a score of 3. States that have laws against either people who intervene in an overdose situation or people who intervene to use a defibrillator (but not both) received a score of 2. States that have laws against both people who intervene in an overdose situation and people who intervene to use a defibrillator received a score of 1. The data used for this indicator come from two 2016 reports from the National Conference of State Legislatures.[94] The data have been revised since the original HOAP release. See appendix C, note 19 for further information.

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91. "Lay distribution" signifies the presence of a distribution program for friends or family members of someone at risk of overdose.
92. "Third-party prescription" signifies prescription to a friend or relative of an at-risk individual. A "physician standing order" is an order a physician writes allowing a prescription to be dispensed to a patient he or she has not examined.
93. Corey Davis, "Legal Interventions to Reduce Overdose Mortality: Naloxone Access and Overdose Good Samaritan Laws," Network for Public Health Law, July 2017 (the June 2018 update listed the April 2016 edition of the same report).
94. National Conference of State Legislatures, "Drug Overdose Immunity and Good Samaritan Laws," August 2016; National Conference of State Legislatures, "State Laws on Cardiac Arrest and Defibrillators," January 2012.

Taxation Subindex

The Taxation Subindex measures how much each state taxes the healthcare industry. State governments that subject healthcare-related goods, services, and individuals to special confiscatory taxation stymie opportunity in the healthcare system and limit patients' access to care. The Taxation Subindex includes three indicators.

State has fewer provider taxes. Most states impose taxes on healthcare providers in order to raise money for Medicaid and in turn qualify for additional federal Medicaid funds. States vary in the numbers of provider taxes they impose. States that have no provider taxes received a score of 5 for this indicator, states with only one provider tax or fee received a score of 4, states with only two provider taxes or fees received a score 3, states with only three provider taxes or fees received a score of 2, and states with four or more provider taxes or fees received a score of 1. The data used for this indicator come from a 2016 report from the Henry J. Kaiser Family Foundation.[95] The data have been revised since the original HOAP release. See appendix C, note 20 for further information.

State has fewer health savings account (HSA) taxes. HSAs are accounts in which individual consumers can set aside money to spend on their healthcare. States impose varying levels of regulation over these entities. States received one of three possible scores for this indicator: 5 for taxing neither HSA contributions nor HSA earnings, 3 for taxing HSA earnings but not HSA contributions, and 1 for taxing HSA contributions. The source of the data used for this indicator is a web resource maintained by Optum Financial Services.[96]

State has fewer medical device taxes. States vary in how (and whether) they tax medical devices. Variations include the way medical devices are defined, the extent of exemptions, and whether the tax rate for medical devices is the same as the general sales tax rate or is reduced. States in which medical devices are exempt received a score of 5 for this indicator, states in which medical devices are exempt if the patient has a prescription for the device received a score of 4, states in which medical devices are taxed but there are many exemptions received a score of 3, states in which medical devices are taxed but there are either very few

95. Henry J. Kaiser Family Foundation, "States and Medicaid Provider Taxes or Fees" (Fact Sheet, Kaiser Commission on Medicaid and the Uninsured, March 2016).
96. Optum Financial Services, "State Tax Information," http://www.optumhealthfinancial.com/individualsfamilies/hsataxresourcecenter/statetaxinformation.html.

exemptions or they are taxed at a reduced rate received a score of 2, and states in which medical devices are taxed at essentially the full rate received a score of 1. The sources of the data used for this indicator are a 2016 guidance article published by the firm SalesTaxSupport.com and the state tax code information maintained on individual state treasury websites.[97]

Telemedicine Subindex

The Telemedicine Subindex investigates how conducive each state's environment is to the practice of telemedicine. In order to promote openness and access in the US healthcare system, healthcare providers ought to be able to use innovative new technologies as they see fit. Providers who participate in the state-funded Medicaid program should be allowed to provide care (and receive customary reimbursement for it) using technologies that are commonly used in the private sector. The Telemedicine Subindex includes four indicators.

State reimburses Medicaid providers at parity for telemedicine. Not all states reimburse Medicaid providers for telemedicine at the same rates as they reimburse for other services. States received one of three possible scores for this indicator: 5 for fully reimbursing providers for telemedicine with no special limits related to geography, services, and location of visit; 3 for partially reimbursing providers for telemedicine with some limits on geography, services, and location of visit; and 1 for refusing to reimburse for telemedicine. The data used for this indicator come from a 2015 report from the National Conference of State Legislatures and a table maintained by the Federation of State Medical Boards.[98] The data have been revised since the original HOAP release. See appendix C, note 21 for further information.

State has less restrictive telepresenter requirements. Some states require that special assistants called telepresenters take part in telemedicine encounters in order to make those encounters eligible for Medicaid reimbursement. States that do not require a telepresenter received a score of 5 for this indicator, states that do not require a telepresenter for all encounters but do for some encounters received a score of 4, states that require a telepresenter to be on the premises

97. James R. Dumler, "Which States Tax Medical Devices," SalesTaxSupport.com, February 25, 2016.
98. National Conference of State Legislatures, *Telehealth: Policy Trends and Considerations*, 2015; Federation of State Medical Boards, "Telemedicine Policies: Board by Board Overview," accessed November 23, 2016.

but not with the patient during the encounter received a score of 3, states that require a telepresenter to be with the patient during the encounter received a score of 2, and states that do not allow Medicaid reimbursement for telemedicine received a score of 1. The data used for this indicator come from a 2015 report by the American Telemedicine Association.[99] The data have been revised since the original HOAP release. See appendix C, note 22 for further information.

State reimburses Medicaid providers at parity for remote monitoring. State Medicaid programs vary in the number of services for which they reimburse for care provided via remote patient monitoring (RPM). States that reimburse for RPM for essentially all relevant services received a score of 5, states that reimburse for RPM for four or five services received a score of 4, states that reimburse for RPM for two or three services received a score of 3, states that reimburse RPM for only one service or only for certain special subpopulations received a score of 2, and states that do not allow any Medicaid reimbursement for RPM received a score of 1. The data used for this indicator come from a 2016 report by the Center for Connected Health Policy.[100] The data have been revised since the original HOAP release. See appendix C, note 23 for further information.

State allows online prescribing. Online prescribing, not to be confused with e-prescribing, is when a physician prescribes a drug to a patient on the basis of an online visit or interaction. States received one of three possible scores for this indicator. No state allows complete freedom for online prescribing, so no state scored 5 for not requiring a previously established patient-provider relationship before a provider may write a prescription. States in which healthcare providers are allowed to use telemedicine to establish a patient-provider relationship received a score of 3. States in which online prescribing is prohibited received a score of 1, as did states for which there is no clear law concerning online prescribing or for which no information is available. The data used for this indicator come from a 2016 report by the Center for Connected Health Policy.[101] The data have been revised since the original HOAP release. See appendix C, note 24 for further information.

99. Latoya Thomas and Gary Capistrant, "State Telemedicine Gaps Analysis: Coverage & Reimbursement," American Telemedicine Association, January 2016.
100. Center for Connected Health Policy, "State Telehealth Laws and Medicaid Program Policies: A Comprehensive Scan of the 50 States and District of Columbia," March 2016.
101. Center for Connected Health Policy, "State Telehealth Laws and Medicaid Program Policies."

APPENDIX C: JUNE 2018 DATA UPDATES

This section lists the data updates from the previous version of HOAP, along with rationales for the changes.

1. *State has pro-DPC laws (Direct Primary Care Subindex)*. In the first iteration of HOAP, the authors corresponded with the administrators of the DPC Frontier website to get access to relevant data as they pertained to the measurement of the variables contained within this indicator. This year, all the relevant data was available on the DPC Frontier website. See Phillip Eskew, "Mapper," Direct Primary Care Frontier, August 7, 2017, http://www.dpcfrontier.com/mapper.
2. *State has more DPC practices per capita (Direct Primary Care Subindex)*. In the first iteration of HOAP, there was a chart in a study published by the administrators of the DPC Frontier website that counted the number of DPC practices in each state. For this iteration, the study was not updated, so we counted the number of DPC practices in each state using the raw data in the DPC mapper tool. We then divided the number of DPC practices per state by the state's population (pulled from the most recent census estimates) to come up with the DPC per capita data. See Phillip Eskew, "Mapper," Direct Primary Care Frontier, August 7, 2017, http://www.dpcfrontier.com/mapper; and US Census Bureau, Population Division, "Table 1. Annual Estimate of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2017," https://www2.census.gov/programs-surveys/popest/tables/2010-2017/state/totals/nst-est2017-01.xlsx
3. *State mandates fewer health insurance benefits (Insurance Subindex)*. The original data have been replaced by data from this source: Center for Consumer Information and Insurance Oversight, "Information on Essential Health Benefits (EHB) Benchmark Plans," Centers for Medicare and Medicaid Services, accessed April 20, 2018, https://www.cms.gov/cciio/resources/data-resources/ehb.html. In addition, the scale has been revised as follows:
   5 = fully free (no mandated benefits)
   4 = mostly free (1 to 4 mandates)
   3 =mixed free and unfree (5 to 9 mandates)
   2 = mostly regulated (10 to 19 mandates)
   1 = highly regulated (20 or more mandates)

The original data source is no longer produced, so we switched to a new data source produced by the federal government. The scale has been revised, as well, to accommodate the new data. This caused a number of changes in the numbers of this series that don't result from any actual changes in the state environment.

4. *State mandates less rate review (Insurance Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
5. *State does not expand on federal age rating limitations (Insurance Subindex)*. The original data have been replaced by data from this source: Center for Consumer Information and Insurance Oversight, "Market Rating Reforms: State Specific Age Curve Variations," June 2, 2017, https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating.html#age. The reason for the change of source was to switch to a source that updates regularly.
6. *State does not expand on federal tobacco rating limitations (Insurance Subindex)*. The original data have been replaced by data from this source: Center for Consumer Information and Insurance Oversight, "Market Rating Reforms: State Specific Rating Variations," June 2, 2017, https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating.html. The reason for the change of source was to switch to a source that updates regularly.
7. *State does not expand on federal geographic rating limitations (Insurance Subindex)*. The original data have been replaced by data from this source: Center for Consumer Information and Insurance Oversight, "Market Rating Reforms: State Specific Rating Variations," June 2, 2017, https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating.html. The reason for the change of source was to switch to a source that would update regularly.
8. *Physicians pay fewer malpractice actions (Medical Liability Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
9. *Physicians pay lower malpractice premiums (Medical Liability Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
10. *State has fewer continuing medical education requirements (Occupational Regulation Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.

11. *State allows nurse practitioners broad scope of practice (Occupational Regulation Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
12. *State allows direct-entry midwifery (Occupational Regulation Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
13. *State allows access to medical marijuana (Pharmaceutical Access Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
14. *State allows access to oral contraceptives without physician prescription (Pharmaceutical Access Subindex)*. Data from the original HOAP paper have been supplemented by newer data to account for a change in Colorado law. The new information is available at Sally Rafie, "Colorado Is Third State Allowing Pharmacists to Prescribe Birth Control," Pharmacy Times, February 27, 2017, http://www.pharmacytimes.com/contributor/sally-rafie-pharmd/2017/02/colorado-is-third-state-allowing-pharmacists-to-prescribe-birth-control. Also, in the original HOAP document, this indicator was erroneously called "State allows over-the-counter access to oral contraceptives." In fact, no state currently allows over-the-counter sales of oral contraceptives. California, Colorado, and Oregon do allow pharmacists to autonomously prescribe these drugs without approval by a physician. This correction does not affect the data or rankings. Only the interpretation changes.
15. *State puts fewer restrictions on compounding pharmacies (Provider Regulation Subindex)*. New sources were used to score this indicator because more recent data became available. We used a new table put out by The Joint Commission ("Pharmacy Rules/Regulations by State for Compliance with USP 797 Medication Compounding," February 28, 2017, https://www.jointcommission.org/assets/1/6/Feb_2017_State_Compounding_Regulations.pdf), which used data from a pharmacy safety organization called Critical Point (http://www.criticalpoint.info/Statemap/story_flash.html).
16. *State lacks burdensome prescription monitoring requirements (Provider Regulation Subindex)*. Original data have been updated with new data from the same series, and the following new sources have been added: Prescription Drug Monitoring Program, "State Profiles," accessed April 20, 2018, http://www.pdmpassist.org/content/state-profiles; National Association of State Controlled Substances Authorities, "Prescription Drug Monitoring

Programs," accessed April 20, 2018, http://www.nascsa.org/rxMonitoring.htm; National Alliance for Model State Drug Laws, "Mandated Use of Prescription Drug Monitoring Programs (PMPs)—Map," June 30, 2017, http://www.namsdl.org/Maps/Mandated%20Use%20%20of%20PMPs%20-%20State%20Map%20REV%206-30-17%20(7-21-17).pdf; and National Alliance for Model State Drug Laws, "Mandated Registration with PMPs—Map," June 30, 2017, http://www.namsdl.org/Maps/Mandated%20Registration%20with%20PMPs%20-%20State%20Map%207-24-17.pdf.

17. *State allows access to e-cigarettes (Public Health Subindex)*. Original data have been updated with new data from the same series, and the following new sources have been added: Marie-Claude Tremblay, Pierre Pluye, Genevieve Gore, Vera Granikov, Kristian B. Filion, and Mark J. Eisenberg, "Regulation Profiles of E-Cigarettes in the United States: A Critical Review with Qualitative Synthesis," BMC Medicine, 2015, https://www.ncbi.nlm.nih.gov/pubmed/26041672; Public Health Law Center and Public Health and Tobacco Policy Center, U.S. E-Cigarette Regulation: A 50-State Review (Saint Paul, MN: Tobacco Control Legal Consortium, 2017), http://www.publichealthlawcenter.org/sites/default/files/E-Cigarette-Legal-Landscape-50-State-Review-June-2017.pdf; and National Conference of State Legislatures, "Alternative Nicotine Products: Electronic Cigarettes," March 3, 2017, http://www.ncsl.org/research/health/alternative-nicotine-products-e-cigarettes.aspx.

18. *State allows access to naloxone (Public Health Subindex)*. The data used for this indicator come from a 2017 Network for Public Health Law report (the June 2018 update listed the April 2016 edition of the same report).

19. *State has strong "Good Samaritan" protection (Public Health Subindex)*. Original data have been updated with new data from the same series and supplemented by data from the following series: AED Brands, "AED State Laws," accessed April 20, 2018, https://www.aedbrands.com/resource-center/choose/aed-state-laws/; Delaware Code Online, title 16, chapter 30C, "Automatic External Defribrillators (AEDs)," accessed April 20, 2018, http://delcode.delaware.gov/title16/c030c/index.shtml; "New NJ Law Protects Good Samaritans Who Use AED Devices to Try to Save Lives," NJToday.net, May 8, 2012, http://njtoday.net/2012/05/08/new-nj-law-protects-good-samaritans-who-use-aed-devices-to-try-to-save-lives/; and Maine Revised Statutes, title 22, chapter 421, "Automated External Defibrillators," November 1, 2017, https://legislature.maine.gov/statutes/22/title22ch421.pdf.

20. *State has fewer provider taxes (Taxation Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
21. *State reimburses Medicaid providers at parity for telemedicine (Telemedicine Subindex)*. Original data have been updated with new data from the same series and supplemented by data from the following series: National Conference of State Legislatures, "State Coverage for Telehealth Services," January 2016, http://www.ncsl.org/research/health/state-coverage-for-telehealth-services.aspx.
22. *State has less restrictive telepresenter requirements (Telemedicine Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
23. *State reimburses Medicaid providers at parity for remote monitoring (Telemedicine Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.
24. *State allows online prescribing (Telemedicine Subindex)*. Data from the original HOAP paper have been replaced by newer data from the same source.

Table C1 indicates those states for which the indicators changed from the November 2016 report, along with the directions of change for the subindexes and overall HOAP index.

TABLE C1. CHANGES IN HOAP DATA FROM 2016 STUDY TO 2018 UPDATE

Subindex or factor	States whose score increased	States whose score decreased
HOAP Index (average of 10 subindexes)	**AL AK AZ AR CO CT DE FL GA HI IN KS KY LA ME MA MN MO MT NE NM NC ND OK RI SD TN TX UT VT VA WV WI WY**	**CA ID IL IA MD MI MS NV NH NJ NY OH OR PA SC WA DC**
DIRECT PRIMARY CARE Subindex (average of 3 factors)	**AL AK AR CO CT DE FL HI IL IN IA KS KY LA ME MA MI MN MS MO MT NE NH NM NC OH OK OR PA SC TN TX UT VA WY DC**	**NV RI**
State has pro-DPC laws	AL AR CO IN KY ME MT NE TN VA WY	AK GA
State has more DPC practices per capita	AK CT DE FL GA HI IL IN IA KS KY LA ME MA MI MN MS MO MT NE NH NM NC OH OK OR PA SC TN TX UT VA WY DC	NV RI
INSURANCE Subindex (average of 5 factors)	**AL CT FL GA KS MN MS MO NE NM PA UT WI**	**AZ AR DE IA MI NH NJ OK SD DC**
State mandates fewer health insurance benefits	FL KS MS MO NE NM PA	AZ AR DE GA IA MI NH OK SD
State mandates less rate review	AL CT GA PA WI	
State does not expand on federal age rating limitations	MN UT	NJ DC
State does not expand on federal tobacco rating limitations	CT	
MEDICAL LIABILITY Subindex (average of 3 factors)	**AZ CA CT LA MA NH NM SD VT WI WY**	**IL UT**
State physicians pay fewer malpractice actions	CA LA MA NH NM SD VT WI WY	IL UT
State physicians pay lower malpractice premiums	AZ CT	
OCCUPATIONAL REGULATION Subindex (average of 5 factors)	**NC SD**	**AL MI OR VT DC**
State has fewer continuing medical education requirements	NC	AL OR VT DC
State allows nurse practitioners broad scope of practice	SD	
State allows direct-entry midwifery	SD	MI
PHARMACEUTICAL ACCESS Subindex (average of 4 factors)	**AR CO FL IN IA NE ND SD VA WV**	
State allows access to medical marijuana	AR FL IN IA NE ND SD VA WV	
State allows access to oral contraceptives without physician prescription	CO	
PROVIDER REGULATION Subindex (average of 3 factors)	**HI NY**	**AK AR CO CT ID IL IA KS ME MD MS NE NH NJ PA SC SD UT WI WY DC**
State puts fewer restrictions on compounding pharmacies	HI NY	CO ID IA KS MS NE NJ SD WY DC

TABLE C1 (CONTINUED FROM PREVIOUS PAGE).

Subindex or factor	States whose score increased	States whose score decreased
State lacks burdensome prescription monitoring mandates		AK AR CT HI IL ME MD NH NJ PA SC SD UT WI DC
PUBLIC HEALTH Subindex (average of 3 factors)	**IA KS RI WY**	**AL AZ AR CA CO CT DE FL GA HI ID IL IN KY ME MD MN MS NE NH NM NY NC OH OK OR PA SD TN TX UT VA WA WV DC**
State allows access to e-cigarettes		AZ CA CT DE FL HI KY ME NM NC OH OR TX WV WY DC
State allows access to naloxone	KS WY	AL AR CA CO CT GA ID IL IN KY ME MD MN MS MT NE NH NJ NY NC OH OK OR PA SD TN UT VA WA
State has strong "Good Samaritan" protection	DE IA ME MT NE NJ RI SD	
TAXATION Subindex (average of 3 factors)	**AZ GA**	**CT NM OH UT**
State has fewer provider taxes	AZ GA	CT NM OH UT
TELEMEDICINE Subindex (average of 4 factors)	**AK AR CT FL GA HI IA LA ME NE OH OK RI TX UT VA**	**NY DC**
State reimburses Medicaid providers at parity for telemedicine	AR CT FL RI UT	DE
State has less restrictive telepresenter requirements	AK CT FL GA IA LA OK RI	NY DC
State reimburses Medicaid providers at parity for remote monitoring	AR HI NE VA	
State allows online prescribing	DE ME OH OK TX UT	

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