

This appendix is part of a Commonwealth Fund publication, David C. Radley et al., *Achieving Racial and Ethnic Equity in U.S. Health Care: A Scorecard of State Performance* (Commonwealth Fund, Nov. 2021), <https://www.commonwealthfund.org/publications/scorecard/2021/nov/achieving-racial-ethnic-equity-us-health-care-state-performance>.

STUDY METHODS

This report, modeled on the Commonwealth Fund's annual *Scorecard on State Health System Performance*,¹ evaluates state health system performance for five racial and ethnic groups on 24 indicators representing three dimensions:

- **Health Outcomes:** Eight indicators related to premature death, health status, and health risk behaviors.
- **Health Care Access:** Five indicators related to insurance coverage for children and adults, access to health care providers, out-of-pocket expenses for medical care, and cost-related barriers to receiving care.
- **Quality and Use of Health Care Services:** Eleven indicators related to receipt of preventive care, hospital and emergency department use that might have been reduced with timely and effective care, and estimates of spending on primary care as a share of total Medicare spending.

The racial and ethnic groups included in the analysis are: Black (non-Latinx/Hispanic); white (non-Latinx/Hispanic); Latinx/Hispanic (any race); Asian American, Native Hawaiian, or Pacific Islander (non-Latinx/Hispanic); and American Indian or Alaska Native (non-Latinx/Hispanic).

Guiding Principles

Performance metrics: Nearly all 24 metrics in the report are those used for the *2020 Scorecard on State Health System Performance*. We selected them because they represent important dimensions and measurable aspects of health care system performance, and because they can be stratified by race and ethnicity within each state (see [Appendix C](#) for a full list of indicators and the available racial and ethnic groups within each data source).

Data sources: We selected the metrics from publicly available sources, including government-sponsored surveys, publicly reported quality indicators, vital statistics, mortality data, and administrative databases. The most current data available were used wherever possible. To increase the number of data points for different racial and

ethnic populations within states, we aggregated data across the two most recent years for 17 of the 24 indicators (e.g., 2019–20). [Appendix C](#) identifies the data source and time frame used for each indicator.

Data inclusion: Each data source used has its own guidance for suppressing estimates based on sample size. For example, guidance from the Centers for Disease Control and Prevention (CDC) for deriving estimates from the Behavioral Risk Factor Surveillance System (BRFSS) advises that subpopulation estimates be suppressed when the relative standard error (standard error divided by the estimate) is less than 30 percent. The CDC also advises that rates derived from the restricted-use detailed mortality files used for our preventable mortality measure be suppressed when there are fewer than 10 underlying deaths. In all instances, we followed each data source's suppression guidance; in some cases, we used even stricter suppression criteria to ensure the stability of our estimates (e.g., we suppressed preventable mortality rates if there were fewer than 20 deaths).

To further ensure data stability, we did not include any estimates for a state population group in our scoring calculations if: a) they did not make up at least 2 percent of the state's total population, and b) there were less than 40,000 people estimated to be in that group.

Scoring methodology: For each of the 24 performance indicators, we gather all available point estimates for the racial and ethnic populations in each state (including the District of Columbia as if it were a state) and calculated a standardized z-score for each state population group (e.g., all Texas residents who identify as Latinx/Hispanic). To illustrate, for adult uninsured rates, we have point estimates available for 191 state population groups (51 white, 48 Latinx/Hispanic, 39 Black, 37 AANHPI, 16 AIAN). For each group, we calculate the z-score by subtracting the average uninsured rate across all 191 groups from the uninsured rate for the specific group and then dividing by the standard deviation of all observed group rates. This approach is similar to the method used in our *Scorecard on State Health System Performance*, but it is applied to each population group within each state rather than to the full state population.

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The standardized z-scores for each state population group were averaged across all indicators within the performance dimension (Outcomes, Access, Quality/Use), and then dimension scores were averaged to generate an overall health system performance score for that particular group. A group did not receive a dimension score (or scores for individual indicators within a dimension) if it was missing data for more than 50 percent of the indicators within that dimension. A group that was missing a dimension score did not receive a final overall health system performance score.

Finally, we took the overall composite z-scores for each state population group and assigned a 1–100 percentile score (we also assigned percentile scores for each of the three dimensions). The percentile scoring reflects the observed distribution of health system performance for all the groups measured. It enables users to make comparisons both across states (e.g., the health system performance for Black residents of Massachusetts compared to Black residents of Georgia) and within states (e.g., the gap in health system performance for Black and white Michigan residents).

It is important to note that because the scores are set relative to one another rather than to a predefined benchmark, groups at or near the 100th percentile still have room for improvement.

Data limitations: Not all data sources supported state-level estimates for all racial and ethnic groups featured in this report. For example, the Medicare LDS, used to create several utilization indicators, can reliably support estimates only for Black and white race but not for ethnicity.

For several populations (particularly AIAN and AANHPI), many states have insufficient data to produce an overall health system performance score or point estimates for many of the individual indicators. However, we do publish all point estimates meeting data-source suppression criteria within our individual state profiles.

Finally, it is important to note that the five racial and ethnic categories used for this report often group together populations with different experiences, cultures, immigration barriers, and other socioeconomic factors. For example, there is a wide range of culturally distinct Latinx/Hispanic communities and Asian American communities across the United States. Such groupings are imperfect and

can mask significant differences. For example, past research has shown variability in health insurance coverage rates among Asian American subpopulations and between Asian Americans and Native Hawaiians or Pacific Islanders.² While use of these categories is necessary to obtain sufficient data sample sizes, states and localities should interpret the findings within the context of their own communities, using them as a starting point to guide more targeted research and policy solutions.

ACKNOWLEDGMENTS

This report was developed with feedback and review from an advisory group that included Cara James, Ph.D. (Grantmakers In Health); Zinzi Bailey, Sc.D., M.S.P.H. (University of Miami Miller School of Medicine); Dolores Acevedo-Garcia, Ph.D., M.P.A.-U.R.P. (Brandeis University); and Marc Elliott Ph.D., M.A. (RAND Corporation). We are extremely grateful to this group for their feedback and recommendations, as well as their prior work around equity measurement which helped guide the methods for this analysis.³ All final decisions around the methods and data indicators used were made by the Commonwealth Fund.

NOTES TO METHODS

1. David C. Radley, Sara R. Collins, and Jesse C. Baumgartner, *2020 Scorecard on State Health System Performance* (Commonwealth Fund, Sept. 2020).
2. Munira Z. Gunja et al., *Gap Closed: The Affordable Care Act's Impact on Asian Americans' Health Coverage* (Commonwealth Fund, July 2020).
3. Dolores Acevedo-Garcia et al., "Racial and Ethnic Inequities in Children's Neighborhoods: Evidence from the New Child Opportunity Index 2.0," *Health Affairs* 39, no. 10 (Oct. 2020): 1693–1701; Denis Agniel et al., "Incentivizing Excellent Care to At-Risk Groups with a Health Equity Summary Score," *Journal of General Internal Medicine* 36, no. 7 (July 2021): 1847–57; and Cara V. James et al., *Putting Women's Health Care Disparities on the Map: Examining Racial and Ethnic Disparities at the State Level* (Henry J. Kaiser Family Foundation, June 2009).

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX A1. State Equity Report Performance Indicators, Data Years, and Databases**

Indicator	Data years	Database	
Health Outcomes			
1	Mortality amenable to health care, deaths per 100,000 population	2018–19	CDC National Vital Statistics System (NVSS): Restricted Use Mortality Microdata
2	Infant mortality, deaths per 1,000 live births	2017–18	CDC National Vital Statistics System (NVSS): WONDER
3	Breast cancer deaths per 100,000 female population	2018–19	CDC National Vital Statistics System (NVSS): WONDER
4	Colorectal cancer deaths per 100,000 population	2018–19	CDC National Vital Statistics System (NVSS): WONDER
5	30-day hospital readmissions, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	CMS Limited Data Set (LDS)
6	Adults age 18 and older who smoke	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
7	Adults ages 18–64 who are obese (BMI >= 30)	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
8	Adults ages 18–64 who have lost six or more teeth because of tooth decay, infection, or gum disease	2018/20	Behavioral Risk Factor Surveillance System (BRFSS)
Health Care Access			
9	Adults ages 19–64 uninsured	2019	American Community Survey, Public Use Microdata Sample (ACS PUMS)
10	Children ages 0–18 uninsured	2019	American Community Survey, Public Use Microdata Sample (ACS PUMS)
11	Adults age 18 and older who went without care because of cost in past year	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
12	Individuals under age 65 with high out-of-pocket medical costs relative to their annual household income	2019–20	Current Population Survey Annual Social and Economic Supplement (CPS ASEC)
13	Adults age 18 and older with a usual source of care	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
Quality and Use of Health Care Services			
14	Hospital admissions for ambulatory care-sensitive conditions, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	CMS Limited Data Set (LDS)
15	Potentially avoidable emergency department visits, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	CMS Limited Data Set (LDS)
16	Adult women ages 50–74 who received a mammogram in the past two years	2018/20	Behavioral Risk Factor Surveillance System (BRFSS)
17	Adult women ages 25–64 who received a cervical cancer screening test in the past three years	2018/20	Behavioral Risk Factor Surveillance System (BRFSS)
18	Adults ages 50–74 with a recent colon cancer screening test	2018/20	Behavioral Risk Factor Surveillance System (BRFSS)
19	Adults age 18 and older who received a flu shot in the past year	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
20	Adults age 65 and older who have ever gotten a pneumonia vaccine	2019–20	Behavioral Risk Factor Surveillance System (BRFSS)
21	Children with age-appropriate medical and dental preventive care visits in the past year	2019–20	National Survey of Children’s Health (NSCH)
22	Children ages 19–35 months who received all recommended doses of seven key vaccines	2019	National Immunization Survey (NIS)
23	Adults age 18 and older without a dental visit in past year	2018/20	Behavioral Risk Factor Surveillance System (BRFSS)
24	Primary care spending as share of total health care spending, Medicare beneficiaries age 65 and older	2019	CMS Limited Data Set (LDS)

A downloadable Excel data file with all indicators for all state populations is available in the online version of the report. [➤](#)

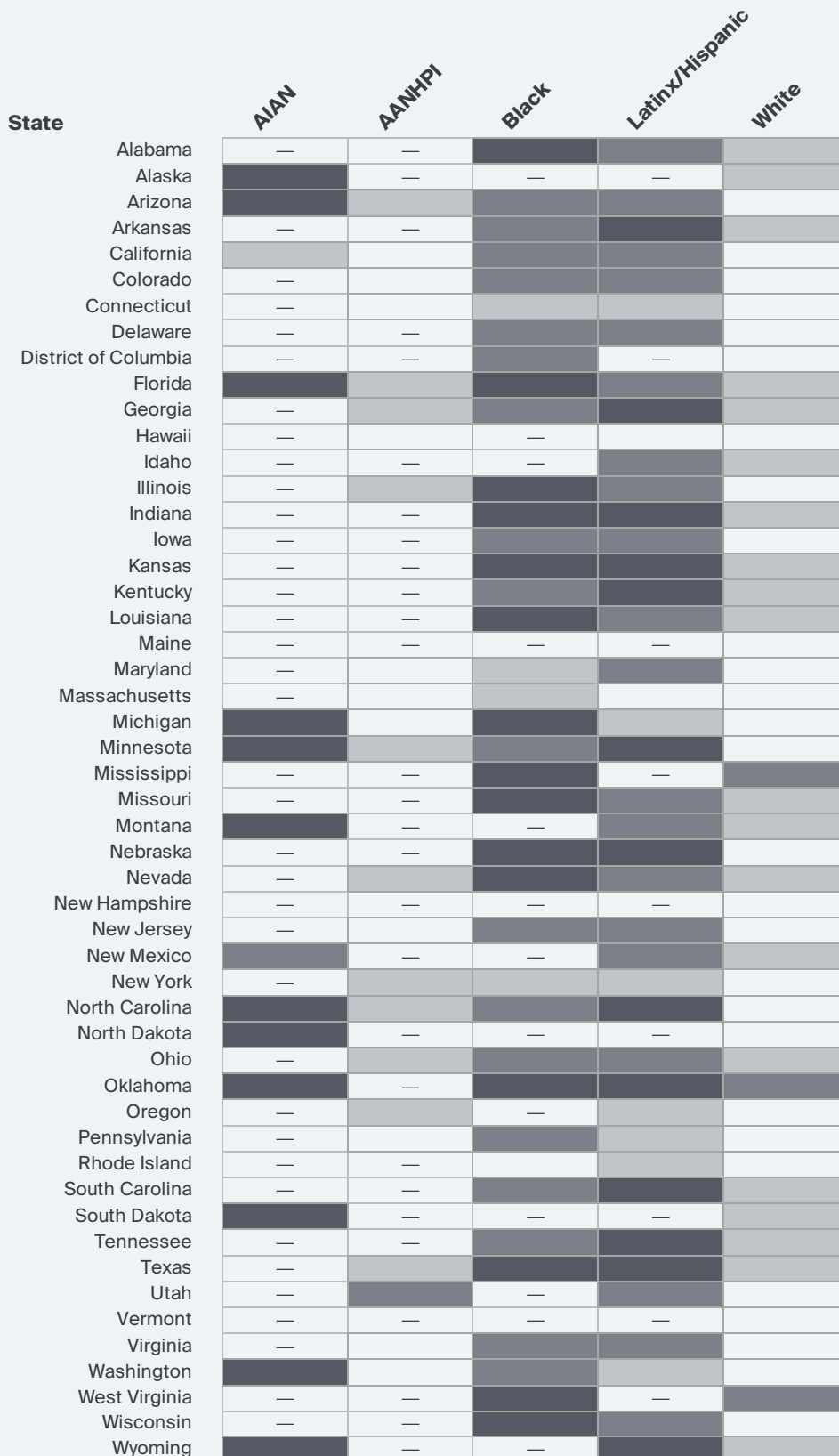
EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX A2. National Rates, by Race and Ethnicity, for State Equity Report Health System Performance Indicators**

Indicator	Data year	U.S. average rate	AIAN rate	AANHPI rate	Black rate	Latinx/Hispanic rate	White rate	
Health Outcomes								
1	Mortality amenable to health care, deaths per 100,000 population	2018–19	84.2	107.6	49.3	153.1	66.9	78.2
2	Infant mortality, deaths per 1,000 live births	2017–18	5.7	8.7	3.9	10.9	5.0	4.7
3	Breast cancer deaths per 100,000 female population	2018–19	19.6	14.9	11.9	27.7	13.6	19.6
4	Colorectal cancer deaths per 100,000 population	2018–19	13.2	13.1	9.0	17.3	10.7	13.3
5	30-day hospital readmissions, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	37.6	–	–	60.2	–	36.5
6	Adults age 18 and older who smoke	2019–20	15%	28%	8%	17%	12%	15%
7	Adults ages 18–64 who are obese (BMI >= 30)	2019–20	32%	40%	13%	42%	36%	31%
8	Adults ages 18–64 who have lost six or more teeth because of tooth decay, infection, or gum disease	2018/20	9%	18%	3%	11%	7%	10%
Health Care Access								
9	Adults ages 19–64 uninsured	2019	13%	25%	8%	14%	26%	9%
10	Children ages 0–18 uninsured	2019	6%	14%	4%	5%	9%	4%
11	Adults age 18 and older who went without care because of cost in past year	2019–20	12%	17%	9%	15%	19%	10%
12	Individuals under age 65 with high out-of-pocket medical costs relative to their annual household income	2019–20	6%	7%	5%	7%	6%	6%
13	Adults age 18 and older with a usual source of care	2019–20	77%	71%	75%	78%	60%	81%
Quality and Use of Health Care Services								
14	Hospital admissions for ambulatory care-sensitive conditions, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	39.4	–	–	59.0	–	38.7
15	Potentially avoidable emergency department visits, Medicare beneficiaries age 65 and older, per 1,000 beneficiaries	2019	185.3	–	–	289.9	–	179.7
16	Adult women ages 50–74 who received a mammogram in the past two years	2018/20	79%	72%	76%	85%	79%	78%
17	Adult women ages 25–64 who received a cervical cancer screening test in the past three years	2018/20	77%	72%	72%	83%	79%	76%
18	Adults ages 50–74 with a recent colon cancer screening test	2018/20	70%	61%	63%	71%	59%	73%
19	Adults age 18 and older who received a flu shot in the past year	2019–20	45%	39%	47%	37%	35%	49%
20	Adults age 65 and older who have ever gotten a pneumonia vaccine	2019–20	71%	62%	67%	61%	55%	74%
21	Children with age-appropriate medical and dental preventive care visits in the past year	2019–20	66%	–	–	63%	61%	70%
22	Children ages 19–35 months who received all recommended doses of seven key vaccines	2019	73%	–	–	66%	70%	76%
23	Adults age 18 and older without a dental visit in past year	2018/20	35%	44%	33%	40%	43%	31%
24	Primary care spending as share of total health care spending, Medicare beneficiaries age 65 and older	2019	6%	–	–	5%	–	6%

Notes: “–” indicates stratification by race or ethnicity is not available. AIAN = American Indian/Alaska Native; AANHPI = Asian American, Native Hawaiian, and Pacific Islander.

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APPENDIX B1A. Summary of Overall State Health System Performance Across Populations



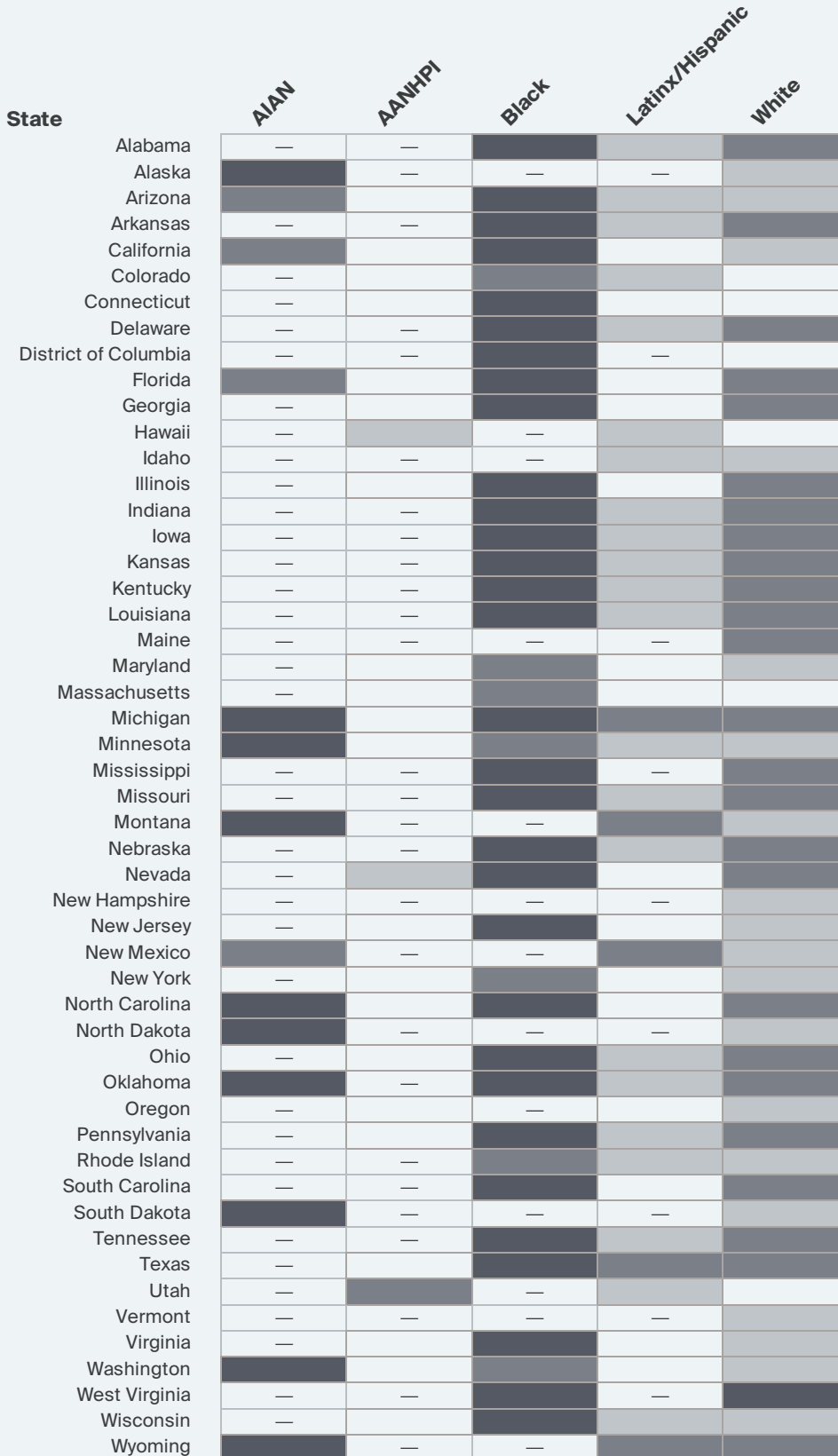
LEGEND

- Top quartile
- 2nd quartile
- 3rd quartile
- Bottom quartile

Notes: Color shades represent the quartile distribution of health system performance for all state/population groups, with lighter shades representing stronger performance and darker shades weaker performance. “—” means that an overall performance score could not be produced for that state/population group. AIAN = American Indian/Alaska Native; AANHPI = Asian American, Native Hawaiian, and Pacific Islander.

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APPENDIX B1B. Summary of State Health Outcomes Across Populations



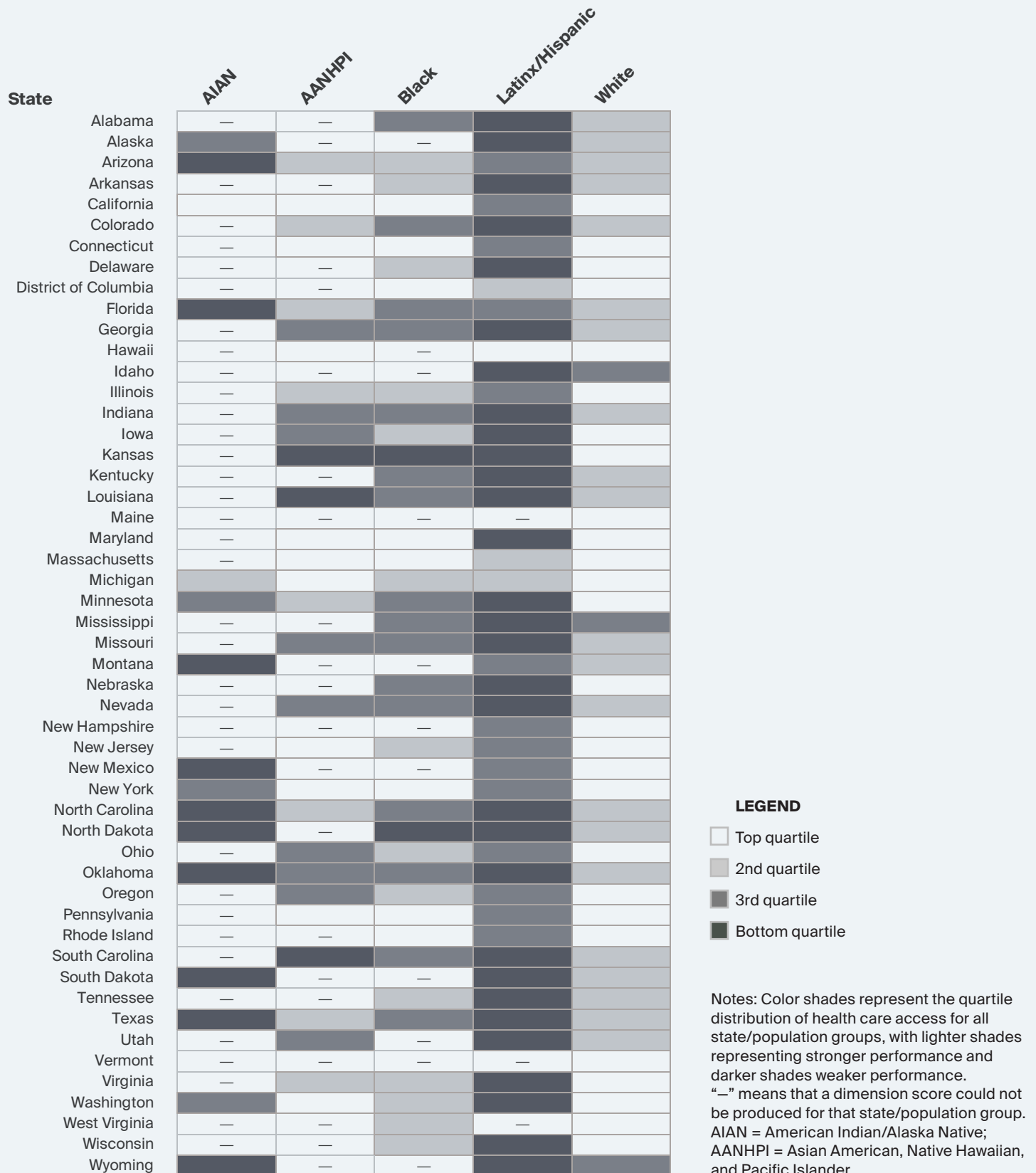
LEGEND

- Top quartile
- 2nd quartile
- 3rd quartile
- Bottom quartile

Notes: Color shades represent the quartile distribution of health care outcomes for all state/population groups, with lighter shades representing stronger performance and darker shades weaker performance. “—” means that a dimension score could not be produced for that state/population group. AIAN = American Indian/Alaska Native; AANHPI = Asian American, Native Hawaiian, and Pacific Islander.

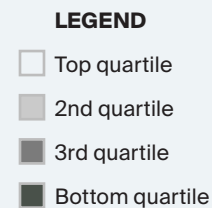
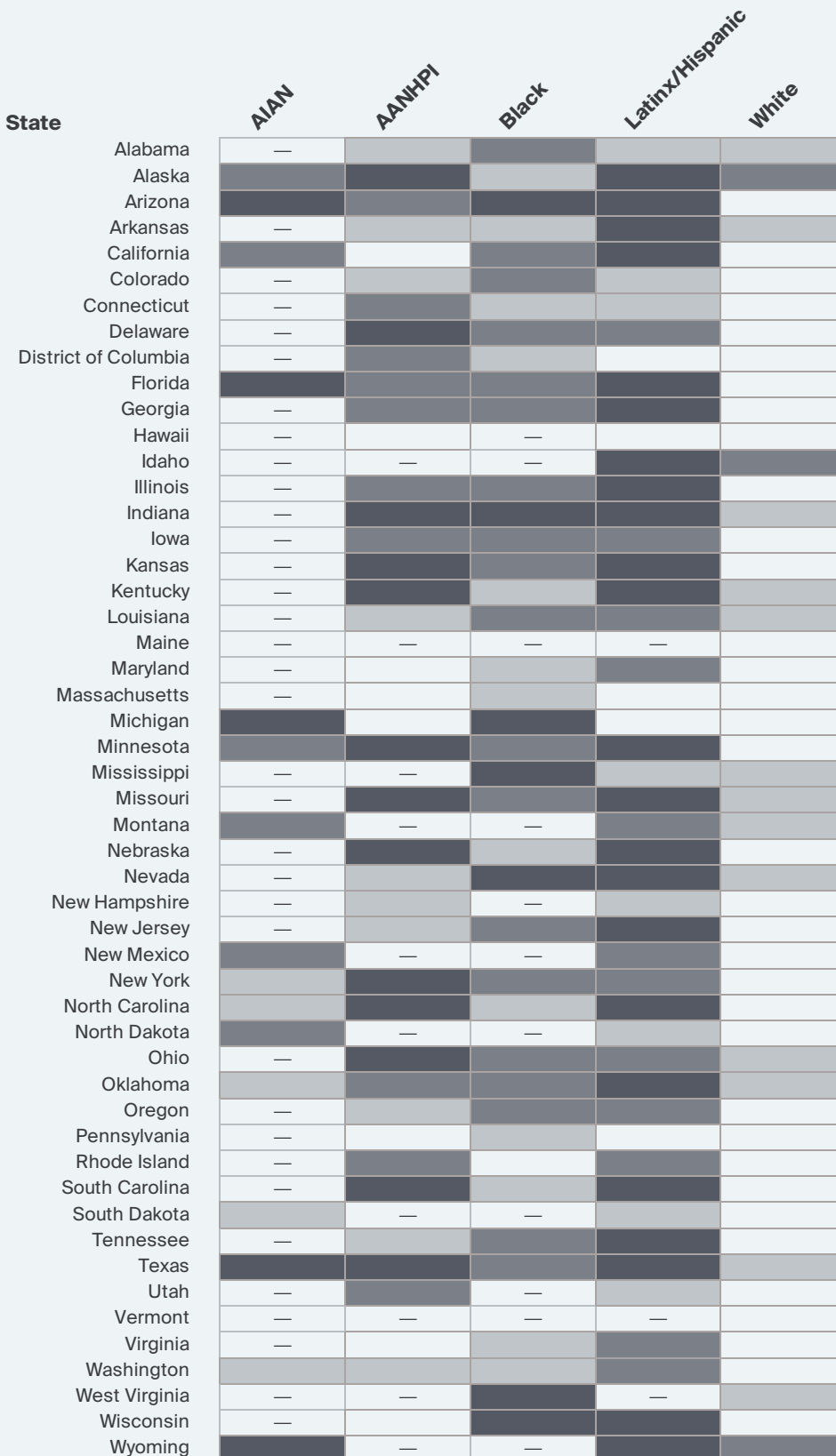
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APPENDIX B1C. Summary of State Health Care Access Across Populations



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APPENDIX B1D. Summary of State Quality and Use of Health Care Services Across Populations



Notes: Color shades represent the quartile distribution of quality and use of health care services performance for all state/population groups, with lighter shades representing stronger performance and darker shades weaker performance. “—” means that a dimension score could not be produced for that state/population group. AIAN = American Indian/Alaska Native; AANHPI = Asian American, Native Hawaiian, and Pacific Islander.

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX B2A. Summary of State Health System Performance Rankings and Scores for American Indian/Alaska Native Populations**

State	Overall		Outcomes		Access		Quality and Use	
	Percentile score (1-100)	Rank among AIAN populations (14 states)	Percentile score (1-100)	Rank among AIAN populations (14 states)	Percentile score (1-100)	Rank among AIAN populations (16 states)	Percentile score (1-100)	Rank among AIAN populations (16 states)
Alabama	—	—	—	—	—	—	—	—
Alaska	7	7	4	9	43	4	27	11
Arizona	5	9	29	4	13	13	3	15
Arkansas	—	—	—	—	—	—	—	—
California	56	1	41	1	76	1	37	7
Colorado	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—
Delaware	—	—	—	—	—	—	—	—
District of Columbia	—	—	—	—	—	—	—	—
Florida	4	10	36	3	14	12	2	16
Georgia	—	—	—	—	—	—	—	—
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	—	—	—	—	—	—	—	—
Indiana	—	—	—	—	—	—	—	—
Iowa	—	—	—	—	—	—	—	—
Kansas	—	—	—	—	—	—	—	—
Kentucky	—	—	—	—	—	—	—	—
Louisiana	—	—	—	—	—	—	—	—
Maine	—	—	—	—	—	—	—	—
Maryland	—	—	—	—	—	—	—	—
Massachusetts	—	—	—	—	—	—	—	—
Michigan	8	6	8	8	51	2	9	12
Minnesota	6	8	3	11	49	3	34	8
Mississippi	—	—	—	—	—	—	—	—
Missouri	—	—	—	—	—	—	—	—
Montana	2	13	2	13	11	14	31	10
Nebraska	—	—	—	—	—	—	—	—
Nevada	—	—	—	—	—	—	—	—
New Hampshire	—	—	—	—	—	—	—	—
New Jersey	—	—	—	—	—	—	—	—
New Mexico	34	2	39	2	25	7	45	6
New York	—	—	—	—	32	6	58	3
North Carolina	14	4	9	7	20	9	71	1
North Dakota	3	12	1	14	18	11	33	9
Ohio	—	—	—	—	—	—	—	—
Oklahoma	12	5	12	6	20	9	64	2
Oregon	—	—	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—	—	—
Rhode Island	—	—	—	—	—	—	—	—
South Carolina	—	—	—	—	—	—	—	—
South Dakota	3	11	3	10	9	15	58	3
Tennessee	—	—	—	—	—	—	—	—
Texas	—	—	—	—	24	8	4	14
Utah	—	—	—	—	—	—	—	—
Vermont	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—
Washington	21	3	14	5	33	5	54	5
West Virginia	—	—	—	—	—	—	—	—
Wisconsin	—	—	—	—	—	—	—	—
Wyoming	1	14	2	12	2	16	9	13

Notes: “—” indicates insufficient data to produce an overall or dimension-specific score. Groups missing at least one dimension score were not eligible for an overall performance score. “Percentile score” is the 1-100 percentile that the state/population group falls in among the full distribution of all groups with available data. Refer to [Study Methods](#) for methodological detail.

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State	Overall		Outcomes		Access		Quality and Use	
	Percentile score (1-100)	Rank among AANHPI populations (23 states)	Percentile score (1-100)	Rank among AANHPI populations (24 states)	Percentile score (1-100)	Rank among AANHPI populations (30 states)	Percentile score (1-100)	Rank among AANHPI populations (41 states)
Alabama	–	–	–	–	–	–	68	12
Alaska	–	–	–	–	–	–	1	41
Arizona	69	16	86	19	63	14	43	22
Arkansas	–	–	–	–	–	–	55	17
California	95	5	93	11	92	6	77	8
Colorado	85	11	97	6	67	12	64	14
Connecticut	92	8	99	3	93	4	39	24
Delaware	–	–	–	–	–	–	16	34
District of Columbia	–	–	–	–	–	–	41	23
Florida	74	13	91	16	63	13	46	21
Georgia	64	18	89	18	42	22	37	25
Hawaii	94	6	72	22	96	2	96	1
Idaho	–	–	–	–	–	–	–	–
Illinois	73	14	94	10	62	15	30	27
Indiana	–	–	–	–	44	21	22	31
Iowa	–	–	–	–	34	25	49	19
Kansas	–	–	–	–	22	28	23	30
Kentucky	–	–	–	–	–	–	14	36
Louisiana	–	–	–	–	13	30	72	9
Maine	–	–	–	–	–	–	–	–
Maryland	99	2	95	8	93	4	88	3
Massachusetts	99	1	100	1	98	1	84	4
Michigan	96	4	98	5	81	9	84	4
Minnesota	57	21	85	20	55	18	21	32
Mississippi	–	–	–	–	–	–	–	–
Missouri	–	–	–	–	40	23	13	37
Montana	–	–	–	–	–	–	–	–
Nebraska	–	–	–	–	–	–	14	35
Nevada	67	17	72	22	49	19	70	10
New Hampshire	–	–	–	–	–	–	70	10
New Jersey	94	6	98	4	95	3	59	16
New Mexico	–	–	–	–	–	–	–	–
New York	75	12	95	8	77	10	19	33
North Carolina	61	19	91	15	56	16	8	39
North Dakota	–	–	–	–	–	–	–	–
Ohio	61	19	93	12	34	25	25	29
Oklahoma	–	–	–	–	38	24	33	26
Oregon	73	14	89	17	46	20	62	15
Pennsylvania	98	3	99	2	82	8	84	4
Rhode Island	–	–	–	–	–	–	26	28
South Carolina	–	–	–	–	18	29	9	38
South Dakota	–	–	–	–	–	–	–	–
Tennessee	–	–	–	–	–	–	55	17
Texas	53	22	92	13	56	16	3	40
Utah	43	23	46	24	28	27	48	20
Vermont	–	–	–	–	–	–	–	–
Virginia	89	10	92	13	70	11	79	7
Washington	92	8	96	7	82	7	65	13
West Virginia	–	–	–	–	–	–	–	–
Wisconsin	–	–	78	21	–	–	94	2
Wyoming	–	–	–	–	–	–	–	–

Notes: “–” indicates insufficient data to produce an overall or dimension-specific score. Groups missing at least one dimension score were not eligible for an overall performance score. “Percentile score” is the 1–100 percentile that the state/population group falls in among the full distribution of all groups with available data. Refer to [Study Methods](#) for methodological detail.

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX B2C. Summary of State Health System Performance Rankings and Scores for Black Populations**

State	Overall		Outcomes		Access		Quality and Use	
	Percentile score (1-100)	Rank among Black populations (38 states)	Percentile score (1-100)	Rank among Black populations (38 states)	Percentile score (1-100)	Rank among Black populations (40 states)	Percentile score (1-100)	Rank among Black populations (40 states)
Alabama	19	27	13	26	46	27	30	28
Alaska	—	—	—	—	—	—	53	12
Arizona	30	19	25	9	54	20	15	37
Arkansas	31	18	11	29	59	17	59	10
California	40	11	18	20	90	4	26	32
Colorado	40	11	38	1	39	29	35	25
Connecticut	55	4	25	8	84	6	59	9
Delaware	35	14	23	12	70	11	28	29
District of Columbia	43	9	13	27	83	7	60	8
Florida	23	24	23	12	31	35	38	24
Georgia	30	19	23	12	35	31	43	18
Hawaii	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—
Illinois	18	28	6	35	64	13	27	31
Indiana	16	31	16	23	48	23	11	39
Iowa	32	17	16	22	61	14	44	16
Kansas	14	34	20	16	19	39	48	15
Kentucky	34	15	18	20	47	25	67	5
Louisiana	18	29	9	32	47	24	28	29
Maine	—	—	—	—	—	—	—	—
Maryland	64	3	26	7	94	3	72	3
Massachusetts	70	2	33	2	95	2	74	2
Michigan	14	34	5	37	72	9	13	38
Minnesota	36	13	31	4	35	31	43	18
Mississippi	8	37	8	33	38	30	18	36
Missouri	9	36	10	31	31	35	31	26
Montana	—	—	—	—	—	—	—	—
Nebraska	22	25	19	17	28	37	54	11
Nevada	18	29	19	17	47	25	11	40
New Hampshire	—	—	—	—	—	—	—	—
New Jersey	42	10	23	11	72	9	43	18
New Mexico	—	—	—	—	—	—	—	—
New York	53	5	28	6	80	8	44	16
North Carolina	33	16	19	17	44	28	66	6
North Dakota	—	—	—	—	1	40	—	—
Ohio	26	22	11	30	57	19	39	23
Oklahoma	6	38	7	34	27	38	26	32
Oregon	—	—	—	—	61	14	39	22
Pennsylvania	45	8	15	25	87	5	53	13
Rhode Island	80	1	32	3	98	1	92	1
South Carolina	27	21	16	23	32	34	61	7
South Dakota	—	—	—	—	—	—	—	—
Tennessee	26	22	12	28	53	21	41	21
Texas	22	25	21	15	33	33	31	26
Utah	—	—	—	—	—	—	—	—
Vermont	—	—	—	—	—	—	—	—
Virginia	48	6	24	10	61	14	68	4
Washington	48	6	31	4	53	21	53	13
West Virginia	15	33	5	38	68	12	23	35
Wisconsin	16	32	6	35	58	18	24	34
Wyoming	—	—	—	—	—	—	—	—

Notes: “—” indicates insufficient data to produce an overall or dimension-specific score. Groups missing at least one dimension score were not eligible for an overall performance score. “Percentile score” is the 1-100 percentile that the state/population group falls in among the full distribution of all groups with available data. Refer to [Study Methods](#) for methodological detail.

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX B2D. Summary of State Health System Performance Rankings and Scores for Latinx/Hispanic Populations**

State	Overall		Outcomes		Access		Quality and Use	
	Percentile score (1–100)	Rank among Latinx/Hispanic populations (42 states)	Percentile score (1–100)	Rank among Latinx/Hispanic populations (42 states)	Percentile score (1–100)	Rank among Latinx/Hispanic populations (48 states)	Percentile score (1–100)	Rank among Latinx/Hispanic populations (48 states)
Alabama	28	26	53	36	8	37	57	10
Alaska	–	–	–	–	15	29	22	28
Arizona	32	23	55	34	26	17	21	29
Arkansas	12	36	74	17	7	39	6	44
California	50	10	76	14	42	5	15	36
Colorado	45	13	56	33	23	20	51	13
Connecticut	68	4	79	12	40	8	75	6
Delaware	30	25	74	17	10	35	30	25
District of Columbia	–	–	–	–	62	3	78	4
Florida	38	19	76	15	26	17	22	27
Georgia	16	35	81	10	4	45	16	35
Hawaii	82	2	52	37	87	1	86	2
Idaho	28	26	68	24	14	30	19	31
Illinois	45	13	82	8	30	13	14	37
Indiana	21	33	72	19	17	25	5	46
Iowa	41	17	67	25	23	20	37	20
Kansas	24	30	61	30	12	31	21	29
Kentucky	23	32	55	35	16	27	12	38
Louisiana	36	22	66	27	16	27	46	16
Maine	–	–	–	–	–	–	–	–
Maryland	41	17	90	1	12	32	34	23
Massachusetts	86	1	79	11	75	2	93	1
Michigan	69	3	45	39	59	4	80	3
Minnesota	24	30	75	16	17	25	7	42
Mississippi	–	–	–	–	7	38	51	12
Missouri	32	24	62	29	21	23	18	33
Montana	45	13	35	42	37	11	48	14
Nebraska	11	38	72	19	6	40	6	43
Nevada	27	28	86	5	19	24	4	47
New Hampshire	–	–	–	–	30	13	60	9
New Jersey	47	12	81	9	31	12	17	34
New Mexico	50	10	42	40	41	7	45	18
New York	56	6	79	12	39	9	46	17
North Carolina	12	36	88	3	3	47	8	41
North Dakota	–	–	–	–	22	22	71	7
Ohio	42	16	67	25	26	16	33	24
Oklahoma	10	39	72	19	4	44	11	39
Oregon	51	9	83	7	27	15	36	21
Pennsylvania	66	5	58	32	42	5	77	5
Rhode Island	54	7	64	28	37	10	48	14
South Carolina	19	34	84	6	5	42	19	31
South Dakota	–	–	–	–	3	46	57	10
Tennessee	2	42	68	23	2	48	2	48
Texas	9	40	48	38	6	40	10	40
Utah	37	20	72	19	11	33	62	8
Vermont	–	–	–	–	–	–	–	–
Virginia	37	20	88	2	9	36	40	19
Washington	52	8	87	4	24	19	36	21
West Virginia	–	–	–	–	–	–	–	–
Wisconsin	26	29	61	30	10	34	25	26
Wyoming	5	41	40	41	5	43	6	44

Notes: “–” indicates insufficient data to produce an overall or dimension-specific score. Groups missing at least one dimension score were not eligible for an overall performance score. “Percentile score” is the 1–100 percentile that the state/population group falls in among the full distribution of all groups with available data. Refer to [Study Methods](#) for methodological detail.

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX B2E. Summary of State Health System Performance Rankings and Scores for White Populations**

State	Overall		Outcomes		Access		Quality and Use	
	Percentile score (1-100)	Rank among white populations (51 states)	Percentile score (1-100)	Rank among white populations (51 states)	Percentile score (1-100)	Rank among white populations (51 states)	Percentile score (1-100)	Rank among white populations (51 states)
Alabama	60	41	32	45	66	38	75	36
Alaska	63	37	75	7	54	45	50	49
Arizona	76	27	58	18	73	31	81	29
Arkansas	52	47	28	48	65	39	61	46
California	89	10	74	8	90	10	85	25
Colorado	87	12	85	2	74	29	90	17
Connecticut	97	3	80	5	96	6	99	3
Delaware	87	12	47	30	88	14	96	8
District of Columbia	100	1	96	1	99	2	100	1
Florida	67	34	44	33	55	44	78	34
Georgia	66	36	39	39	57	43	79	33
Hawaii	95	5	84	3	88	13	98	5
Idaho	57	45	61	16	48	49	50	49
Illinois	79	22	49	27	84	18	82	27
Indiana	60	41	33	44	75	28	67	42
Iowa	85	15	48	29	89	12	93	12
Kansas	74	30	40	38	80	21	82	27
Kentucky	54	46	26	50	74	29	63	44
Louisiana	58	43	34	43	71	32	65	43
Maine	77	25	46	31	80	21	85	25
Maryland	93	6	61	16	97	4	98	5
Massachusetts	98	2	77	6	99	3	99	2
Michigan	81	20	41	37	90	10	88	20
Minnesota	92	7	74	8	86	15	96	9
Mississippi	38	51	27	49	45	50	53	48
Missouri	58	43	37	40	57	42	70	41
Montana	70	33	65	11	68	35	71	40
Nebraska	81	20	50	26	77	25	95	10
Nevada	62	39	37	40	65	39	73	39
New Hampshire	89	11	58	19	91	9	91	15
New Jersey	90	8	63	12	94	7	90	17
New Mexico	72	31	51	24	76	26	77	35
New York	90	8	63	12	97	4	87	22
North Carolina	79	22	45	32	70	34	98	5
North Dakota	76	28	63	12	71	32	81	29
Ohio	67	34	35	42	78	23	73	38
Oklahoma	46	50	29	47	51	48	57	47
Oregon	77	25	62	15	78	24	80	31
Pennsylvania	83	17	42	36	92	8	92	13
Rhode Island	96	4	53	22	100	1	98	4
South Carolina	72	31	44	33	62	41	90	16
South Dakota	75	29	51	24	67	36	86	23
Tennessee	62	39	31	46	67	36	80	31
Texas	63	38	44	33	52	46	74	37
Utah	78	24	82	4	51	47	87	21
Vermont	84	16	55	21	86	15	90	17
Virginia	83	18	52	23	81	20	94	11
Washington	86	14	66	10	83	19	92	13
West Virginia	48	49	21	51	76	26	63	44
Wisconsin	83	18	56	20	85	17	86	23
Wyoming	51	48	49	27	36	51	49	51

Notes: “—” indicates insufficient data to produce an overall or dimension-specific score. Groups missing at least one dimension score were not eligible for an overall performance score. “Percentile score” is the 1-100 percentile that the state/population group falls in among the full distribution of all groups with available data. Refer to [Study Methods](#) for methodological detail.

EMBARGOED – Not for release before 12:01 a.m. ET Thursday, November 18, 2021**APPENDIX C. Indicator Descriptions and Source Notes****ABBREVIATIONS**

ACS PUMS = American Community Survey, Public Use Micro Sample

BRFSS = Behavioral Risk Factor Surveillance System

CDC = Centers for Disease Control and Prevention

CMS = Centers for Medicare and Medicaid Services

CPS ASEC = Current Population Survey, Annual Social and Economic Supplement

LDS = Limited Data Set

NCCDPHP = National Center for Chronic Disease Prevention and Health Promotion

NCHS = National Center for Health Statistics

NCIRD = National Center for Immunization and Respiratory Diseases

NIS-PUF = National Immunization Survey, Public Use Data File

NSCH = National Survey of Children's Health

NVSS-I = National Vital Statistics System-Linked Birth and Infant Death Data

NVSS-M = National Vital Statistics System-Mortality Data

WONDER = Wide-ranging Online Data for Epidemiologic Research

Definitions for Indicators**HEALTH OUTCOMES****1. Mortality amenable to health care, deaths per 100,000**

population: Number of deaths before age 75 per 100,000 population that resulted from causes considered at least partly treatable or preventable with timely and appropriate medical care (see list), as described in Ellen Nolte and Martin McKee, "Measuring the Health of Nations: Analysis of Mortality Amenable to Health Care," *BMJ* 327, no. 7424 (Nov. 13, 2003): 1129-32. Authors' analysis of mortality data from CDC restricted-use Multiple Cause-of-Death file (NCHS) and U.S. Census Bureau population data, 2018-2019.

Causes of death (ages)

Intestinal infections (0-14)

Tuberculosis (0-74)

Other infections (diphtheria, tetanus, septicaemia, poliomyelitis) (0-74)

Whooping cough (0-14)

Measles (1-14)

Malignant neoplasm of colon and rectum (0-74)

Malignant neoplasm of skin (0-74)

Malignant neoplasm of breast (0-74)

Malignant neoplasm of cervix uteri (0-74)

Malignant neoplasm of cervix uteri and body of uterus (0-44)

Malignant neoplasm of testis (0-74)

Hodgkin's disease (0-74)

Leukemia (0-44)

Diseases of the thyroid (0-74)

Diabetes mellitus (0-49)

Epilepsy (0-74)

Chronic rheumatic heart disease (0-74)

Hypertensive disease (0-74)

Cerebrovascular disease (0-74)

All respiratory diseases (excluding pneumonia and influenza) (1-14)

Influenza (0-74)

Pneumonia (0-74)

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Peptic ulcer (0–74)

Appendicitis (0–74)

Abdominal hernia (0–74)

Cholelithiasis and cholecystitis (0–74)

Nephritis and nephrosis (0–74)

Benign prostatic hyperplasia (0–74)

Maternal death (all ages)

Congenital cardiovascular anomalies (0–74)

Perinatal deaths, all causes, excluding stillbirths (all ages)

Misadventures to patients during surgical and medical care (all ages)

Ischemic heart disease: 50% of mortality rates included (0–74)

- 2. Infant mortality, deaths per 1,000 live births:** Authors' analysis of NVSS-I, 2017–2018 (NCHS), retrieved using CDC WONDER.
- 3. Breast cancer age-adjusted deaths per 100,000 female population:** Authors' analysis of NVSS-M, 2018–19 (NCHS), retrieved using CDC WONDER.
- 4. Colorectal cancer age-adjusted deaths per 100,000 population:** Authors' analysis of NVSS-M, 2018–19 (NCHS), retrieved using CDC WONDER.
- 5. Thirty-day hospital readmissions for adults age 65 and older, per 1,000 Medicare beneficiaries:** All hospital admissions among fee-for-service Medicare beneficiaries age 65 and older who were readmitted within 30 days of an acute hospital stay for any cause. A correction was made to account for likely transfers between hospitals. Analysis of the 2019 LDS 5% sample of Medicare claims (CMS) by Angelina Lee and Kevin Neipp, Westat. Race data only available for Black and white populations—ethnicity is unknown.
- 6. Adults who smoke:** Percent of adults ages 18 and older who ever smoked 100 or more cigarettes (five packs) and currently smoke every day or some days. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).
- 7. Adults who are obese:** Percent of adults ages 18–64 who are obese (Body Mass Index [BMI] \geq 30). BMI was calculated based on reported height and weight. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).
- 8. Adults who have lost six or more teeth:** Percent of adults ages 18–64 who have lost 6 or more teeth due to tooth decay, infection, or gum disease. Authors' analysis of 2018 and 2020 BRFSS (CDC, NCCDPHP).

HEALTH CARE ACCESS

- 9. Adults ages 19–64 uninsured:** Percent of adults ages 19–64 without health insurance coverage. Authors' analysis of 2019 one-year ACS PUMS (U.S. Census Bureau).
- 10. Children ages 0–18 uninsured:** Percent of children ages 0–18 without health insurance coverage. Authors' analysis of 2019 one-year ACS PUMS (U.S. Census Bureau).
- 11. Adults who went without care because of cost in the past year:** Percent of adults age 18 and older who reported a time in the past 12 months when they needed to see a doctor but could not because of cost. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).
- 12. Individuals with high out-of-pocket medical spending:** Percent of individuals residing in households where all residents are under age 65 with out-of-pocket medical spending that equaled 10 percent or more of income, or 5 percent or more of income if low-income (under 200% of federal poverty level), not including over-the-counter drug costs or health insurance premiums. This measure is limited to individuals who are insured and is different from a similar measure reported in the Commonwealth Fund State Scorecard that includes insured and uninsured individuals. Two years of data are combined to ensure adequate sample size for state-level estimation. Analysis of 2019 and 2020 CPS ASEC (U.S. Census Bureau) by Mikaela Springsteen, Robert F. Wagner School of Public Service, New York University.
- 13. Adults with a usual source of care:** Percent of adults ages 18 and older who had one (or more) person they think of as their personal health care provider. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).

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- 14. Admissions for ambulatory care-sensitive conditions for adults age 65 and older, per 1,000 Medicare beneficiaries:** Hospital admissions for one of the following eight ambulatory care-sensitive (ACS) conditions: long-term diabetes complications, lower extremity amputation among patients with diabetes, asthma or chronic obstructive pulmonary disease, hypertension, congestive heart failure, dehydration, bacterial pneumonia, and urinary tract infection. Analysis of the 2019 LDS 5 percent sample of Medicare claims (CMS) by Angelina Lee and Kevin Neipp, Westat. Race data only available for Black and white populations—ethnicity is unknown.
- 15. Potentially avoidable emergency department (ED) visits for adults age 65 and older, per 1,000 Medicare beneficiaries:** Potentially avoidable ED visits were those that, based on diagnoses recorded during the visit and the

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health care service the patient received, were considered to be either nonemergent (care was not needed within 12 hours), or emergent (care needed within 12 hours) but that could have been treated safely and effectively in a primary care setting. This definition excludes any ED visit that resulted in an admission, as well as ED visits where the level of care provided in the ED was clinically indicated. This approach uses the New York University Center for Health and Public Service Research emergency department algorithm developed by John Billings, Nina Parikh, and Tod Mijanovich (see: *Emergency Room Use—The New York Story*, Commonwealth Fund, Nov. 2000). Analysis of the 2019 LDS 5 percent sample of Medicare claims (CMS) by Angelina Lee and Kevin Neipp, Westat. Race data only available for Black and white populations—ethnicity is unknown.

16. Adult women who received a mammogram: Percent of women ages 50–74 who received a mammogram in the past two years. Authors' analysis of 2018 and 2020 BRFSS (CDC, NCCDPHP).

17. Adult women who received a cervical cancer screening test: Percent of women ages 25–64 who received a pap smear in the past three years. Authors' analysis of 2018 and 2020 BRFSS (CDC, NCCDPHP).

18. Adults who received a colon cancer screening test: Percent of adults ages 50–74 who received a sigmoidoscopy or a colonoscopy in the past 10 years or a fecal occult blood test in the past two years. Authors' analysis of 2018 and 2020 BRFSS (CDC, NCCDPHP).

19. Adults who received a recent flu vaccine: Percent of adults age 18 and older who received a flu shot in the past year. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).

20. Older adults who received the pneumonia vaccine: Percent of adults age 65 and older who ever received a pneumonia vaccine. Authors' analysis of 2019–20 BRFSS (CDC, NCCDPHP).

21. Children with a medical and dental preventive care visit in the past year: Percent of children ages 0–17 who had a preventive medical visit and, if ages 1–17, a preventive dental visit in the past year, according to parents' reports. For more information, see www.childhealthdata.org. Authors' analysis of 2019–20 NSCH (U.S. Census Bureau & Data Resource Center for Child and Adolescent Health). Race/ethnicity data available for this report for Black (non-Latinx/Hispanic), white (non-Latinx/Hispanic) and Latinx/Hispanic (any race) populations.

22. Children ages 19–35 months who received all recommended vaccines: Percent of children ages 19–35 months who received at least 4 doses of diphtheria, tetanus, and acellular pertussis (DTaP/DT/DTP) vaccine; at least 3 doses of poliovirus vaccine; at least one dose of measles-containing vaccine (including measles-mumps-rubella (MMR) vaccine); the full series of Haemophilus influenzae type b (Hib) vaccine (three or four doses depending on product type); at least three doses of hepatitis B vaccine (HepB); at least one dose of varicella vaccine, and at least four doses of pneumococcal conjugate vaccine (PCV). Data from the 2019 NIS-PUF (CDC, NCIRD). Race/ethnicity data available for this report for Black (non-Latinx/Hispanic), white (non-Latinx/Hispanic) and Latinx/Hispanic (any race) populations.

23. Adults without a dental visit in past year: Percent of adults age 18 and older who did not visit a dentist or dental clinic within the past year. Authors' analysis of 2018 and 2020 BRFSS (CDC, NCCDPHP).

24. Primary care as a share of total Medicare spending for adults age 65 and older, Medicare beneficiaries: Share of Medicare fee-for-service health care spending attributed to primary care for each population group within a state. We based our approach on the method used by Reid, Damberg, and Friedberg (*JAMA* 2019) that characterizes a “broad” definition for primary care provider types and a “broad” definition of included services. Under this “broad/broad” definition, we include all professional services billed by physicians, physician assistants, and nurse practitioners in family medicine, internal medicine, general practice, geriatric medicine, and obstetrics and gynecology; hospitalists are excluded. Analysis of the 2019 LDS 5 percent sample of Medicare claims (CMS) by Angelina Lee and Kevin Neipp, Westat. Race data only available for Black and white populations—ethnicity is unknown.