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.

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

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## 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).

## 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.

## 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.

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

| State | AIAN | AANHPI | Black | Latinx/Hispanic | White |
|---|---|---|---|---|---|
| Alabama | — | — | | | |
| Alaska | | — | — | — | |
| Arizona | | | | | |
| Arkansas | — | — | | | |
| California | | | | | |
| Colorado | — | | | | |
| Connecticut | — | | | | |
| Delaware | — | — | | | |
| District of Columbia | — | — | | — | |
| Florida | | | | | |
| Georgia | — | | | | |
| Hawaii | — | | — | | |
| Idaho | — | — | — | | |
| Illinois | — | | | | |
| Indiana | — | — | | | |
| Iowa | — | — | | | |
| Kansas | — | — | | | |
| Kentucky | — | — | | | |
| Louisiana | — | — | | | |
| Maine | — | — | — | — | |
| Maryland | — | | | | |
| Massachusetts | — | | | | |
| Michigan | | | | | |
| Minnesota | | | | | |
| Mississippi | — | — | | — | |
| Missouri | — | — | | | |
| Montana | | — | — | | |
| Nebraska | — | — | | | |
| Nevada | — | | | | |
| New Hampshire | — | — | — | — | |
| New Jersey | — | | | | |
| New Mexico | | — | — | | |
| New York | — | | | | |
| North Carolina | | | | | |
| North Dakota | | — | — | — | |
| Ohio | — | | | | |
| Oklahoma | | — | | | |
| Oregon | — | | — | | |
| Pennsylvania | — | | | | |
| Rhode Island | — | — | | | |
| South Carolina | — | — | | | |
| South Dakota | | — | — | — | |
| Tennessee | — | — | | | |
| Texas | — | | | | |
| Utah | — | | — | | |
| Vermont | — | — | — | — | |
| Virginia | — | | | | |
| Washington | | | | | |
| West Virginia | — | — | | — | |
| Wisconsin | — | — | | | |
| Wyoming | | — | — | | |

**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.

## APPENDIX B1B. Summary of State Health Outcomes Across Populations

| State | AIAN | AANHPI | Black | Latinx/Hispanic | White |
|---|---|---|---|---|---|
| Alabama | — | — | | | |
| Alaska | | — | — | — | |
| Arizona | | | | | |
| Arkansas | — | — | | | |
| California | | | | | |
| Colorado | — | | | | |
| Connecticut | — | | | | |
| Delaware | — | — | | | |
| District of Columbia | — | — | | — | |
| Florida | | | | | |
| Georgia | — | | | | |
| Hawaii | — | | — | | |
| Idaho | — | — | — | | |
| Illinois | — | | | | |
| Indiana | — | — | | | |
| Iowa | — | — | | | |
| Kansas | — | — | | | |
| Kentucky | — | — | | | |
| Louisiana | — | — | | | |
| Maine | — | — | — | — | |
| Maryland | — | | | | |
| Massachusetts | — | | | | |
| Michigan | | | | | |
| Minnesota | | | | | |
| Mississippi | — | — | | — | |
| Missouri | — | — | | | |
| Montana | | — | — | | |
| Nebraska | — | — | | | |
| Nevada | — | | | | |
| New Hampshire | — | — | — | — | |
| New Jersey | — | | | | |
| New Mexico | | — | — | | |
| New York | — | | | | |
| North Carolina | | | | | |
| North Dakota | | — | — | — | |
| Ohio | — | | | | |
| Oklahoma | | — | | | |
| Oregon | — | | — | | |
| Pennsylvania | — | | | | |
| Rhode Island | — | — | | | |
| South Carolina | — | — | | | |
| South Dakota | | — | — | — | |
| Tennessee | — | — | | | |
| Texas | — | | | | |
| Utah | — | | — | | |
| Vermont | — | — | — | — | |
| Virginia | — | | | | |
| Washington | | | | | |
| West Virginia | — | — | | — | |
| Wisconsin | — | | | | |
| Wyoming | | — | — | | |

**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.

## APPENDIX B1C. Summary of State Health Care Access Across Populations

| State | AIAN | AANHPI | Black | Latinx/Hispanic | White |
|---|---|---|---|---|---|
| Alabama | — | — | | | |
| Alaska | | — | — | | |
| Arizona | | | | | |
| Arkansas | — | — | | | |
| California | | | | | |
| Colorado | — | | | | |
| Connecticut | — | | | | |
| Delaware | — | — | | | |
| District of Columbia | — | — | | | |
| Florida | | | | | |
| Georgia | — | | | | |
| Hawaii | — | | — | | |
| Idaho | — | — | — | | |
| Illinois | — | | | | |
| Indiana | — | | | | |
| Iowa | — | | | | |
| Kansas | — | | | | |
| Kentucky | — | — | | | |
| Louisiana | — | | | | |
| Maine | — | — | — | — | |
| Maryland | — | | | | |
| Massachusetts | — | | | | |
| Michigan | | | | | |
| Minnesota | | | | | |
| Mississippi | — | — | | | |
| Missouri | — | | | | |
| Montana | | — | — | | |
| Nebraska | — | — | | | |
| Nevada | — | | | | |
| New Hampshire | — | — | — | | |
| New Jersey | — | | | | |
| New Mexico | | — | — | | |
| New York | | | | | |
| North Carolina | | | | | |
| North Dakota | | — | | | |
| Ohio | — | | | | |
| Oklahoma | | | | | |
| Oregon | — | | | | |
| Pennsylvania | — | | | | |
| Rhode Island | — | — | | | |
| South Carolina | — | | | | |
| South Dakota | | — | — | | |
| Tennessee | — | — | | | |
| Texas | | | | | |
| Utah | — | | — | | |
| Vermont | — | — | — | — | |
| Virginia | — | | | | |
| Washington | | | | | |
| West Virginia | — | — | | — | |
| Wisconsin | — | — | | | |
| Wyoming | | — | — | | |

**LEGEND**

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

Notes: Color shades represent the quartile distribution of health care access 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.

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

| State | AIAN | AANHPI | Black | Latinx/Hispanic | White |
|---|---|---|---|---|---|
| Alabama | — | | | | |
| Alaska | | | | | |
| Arizona | | | | | |
| Arkansas | — | | | | |
| California | | | | | |
| Colorado | — | | | | |
| Connecticut | — | | | | |
| Delaware | — | | | | |
| District of Columbia | — | | | | |
| Florida | | | | | |
| Georgia | — | | | | |
| Hawaii | — | | — | | |
| Idaho | — | — | — | | |
| Illinois | — | | | | |
| Indiana | — | | | | |
| Iowa | — | | | | |
| Kansas | — | | | | |
| Kentucky | — | | | | |
| Louisiana | — | | | | |
| Maine | — | — | — | — | |
| Maryland | — | | | | |
| Massachusetts | — | | | | |
| Michigan | | | | | |
| Minnesota | | | | | |
| Mississippi | — | — | | | |
| Missouri | — | | | | |
| Montana | | — | — | | |
| Nebraska | — | | | | |
| Nevada | — | | | | |
| New Hampshire | — | | — | | |
| New Jersey | — | | | | |
| New Mexico | | — | — | | |
| New York | | | | | |
| North Carolina | | | | | |
| North Dakota | | — | — | | |
| Ohio | — | | | | |
| Oklahoma | | | | | |
| Oregon | — | | | | |
| Pennsylvania | — | | | | |
| Rhode Island | — | | | | |
| South Carolina | — | | | | |
| South Dakota | | — | — | | |
| Tennessee | — | | | | |
| Texas | | | | | |
| Utah | — | | — | | |
| Vermont | — | — | — | — | |
| Virginia | — | | | | |
| Washington | | | | | |
| West Virginia | — | — | | — | |
| Wisconsin | — | | | | |
| Wyoming | | — | — | | |

**LEGEND**

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

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.

## 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.

## APPENDIX B2B. Summary of State Health System Performance Rankings and Scores for Asian American, Native Hawaiian, and Pacific Islander Populations

| 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.

## 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.

## 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.

## 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.

## 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)

## APPENDIX C. Indicator Descriptions and Source Notes (continued)

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] ≥ 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).

### QUALITY AND USE OF HEALTH CARE SERVICES

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

## APPENDIX C. Indicator Descriptions and Source Notes (continued)

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 Heath). 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 accellular 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 influenza 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.