

Data sources are also detailed below. Higher scores indicate better performance for all variables except Severe Tooth Loss. For determining the overall state rankings, the value of Severe Tooth Loss is reversed so that higher scores are more favorable.

The state overall score is calculated based on the six variables, equally weighted. To combine the six scores with different scales, the scores of the states are manipulated statistically to produce an overall state score and ranking. This process is described further in the online supplement to this report, available at astateofdecay.org.



INTRODUCTION OF NATIONAL VARIABLES

For the first time, the advisory committee outlined a procedure for analyzing national data. In Vol. IV of *A State of Decay*, the analysis looked at the 2016 Behavioral Risk Factor Surveillance System (BRFSS) data for 153,350 adults aged 65 and older.² This national analysis used two outcome variables: no severe tooth loss (the person had not lost 6 or more natural teeth to disease or decay) and having visited a dentist within the past 12 months. These favorable outcomes indicating better oral health care were examined based on their association with a person’s education, gender, income, race, residence in a metropolitan area, marital status, and age category. The national results begin on page 12.

DATA SOURCES FOR VARIABLES

Severe Tooth Loss 2016 Behavioral Risk Factor Surveillance System (BRFSS). Secondary analysis of publicly available data sets downloaded from https://www.cdc.gov/brfss/annual_data/annual_2016.html on November 13, 2017.

All results were generated using the complex survey procedures in SAS 9.3 and have been appropriately adjusted for the complex sampling design.

Dental Visit 2016 Behavioral Risk Factor Surveillance System (BRFSS). Secondary analysis of publicly available data sets downloaded from https://www.cdc.gov/brfss/annual_data/annual_2016.html on November 13, 2017.

All results were generated using the complex survey procedures in SAS 9.3 and have been appropriately adjusted for the complex sampling design.

Adult Medicaid Dental Benefit Medicaid/Medicare/CHIP Services Dental Association (MSDA) 2015 National Profile of State Medicaid and CHIP Dental Programs. <http://www.msdanationalprofile.com/>

Community Water Fluoridation Water system data reported by states to the CDC Water Fluoridation Reporting System as of December 31, 2014, and the U.S. Census Bureau state population estimates for July 2014. Revised July 2016.

State Oral Health Plan State Dental Directors Survey conducted by Oral Health America in October and November 2017 via Survey Monkey.

Basic Screening Survey State Dental Directors Survey conducted by Oral Health America in October and November 2017 via Survey Monkey.


TABLE 1. STATE PERFORMANCE ON MEASURED VARIABLES^a


STATE	% 65+ w/severe tooth loss	% 65+ w/dental visit	Number of covered Medicaid services	% Population with CWF	SOHP	BSS
Alabama	45.1%	60.9%	0	78.6%	3	4
Alaska	31.2%	67.0%	13	49.3%	0	0
Arizona	32.7%	67.5%	0	57.8%	1	2
Arkansas	45.9%	55.7%	12	70.3%	0	3
California	27.8%	70.8%	13	63.7%	3	1
Colorado	25.6%	71.3%	13	74.0%	3	3
Connecticut	30.6%	75.4%	11	89.5%	3	3
Delaware	38.7%	70.1%	2	87.1%	0	0
District of Columbia	33.3%	72.4%	13	100.0%	0	1
Florida	36.9%	68.5%	5	77.6%	0	5
Georgia	44.5%	61.0%	2	96.2%	2	4
Hawaii	24.7%	77.7%	2	11.7%	0	1
Idaho	32.0%	64.3%	11	31.9%	2	0
Illinois	37.4%	63.9%	7	98.5%	2	2
Indiana	39.8%	61.4%	12	94.7%	2	0
Iowa	35.4%	70.3%	13	92.7%	3	5
Kansas	31.2%	68.4%	0	63.5%	3	2
Kentucky	50.5%	58.5%	8	99.9%	1	3
Louisiana	44.9%	55.2%	3	44.2%	2	4
Maine	36.8%	67.4%	9	79.3%	0	0
Maryland	34.7%	70.3%	0	96.4%	0	0
Massachusetts	36.6%	71.1%	8	70.4%	0	3
Michigan	35.2%	72.8%	8	91.7%	2	5
Minnesota	28.1%	76.1%	10	98.8%	2	5
Mississippi	55.1%	52.9%	2	60.0%	2	1
Missouri	43.0%	62.4%	9	76.8%	3	2
Montana	33.9%	67.6%	13	33.7%	0	1
Nebraska	30.8%	69.0%	13	71.6%	0	1
Nevada	33.4%	63.7%	7	73.7%	0	1
New Hampshire	31.8%	74.3%	2	46.6%	2	4
New Jersey	34.5%	70.8%	12	14.6%	0	0
New Mexico	37.1%	63.5%	10	77.0%	2	0
New York	35.3%	68.9%	12	71.4%	3	0
North Carolina	43.3%	63.1%	11	87.8%	2	5
North Dakota	37.2%	64.9%	13	96.7%	3	5
Ohio	39.4%	66.0%	12	92.7%	0	0
Oklahoma	43.0%	57.6%	4	62.6%	2	1
Oregon	29.6%	70.4%	12	22.6%	2	4
Pennsylvania	40.7%	65.9%	11	54.6%	2	0
Rhode Island	32.7%	74.7%	9	84.5%	2	5
South Carolina	41.7%	60.1%	6	93.6%	2	0
South Dakota	38.6%	65.1%	11	93.6%	3	0
Tennessee	45.9%	56.7%	0	88.1%	2	0
Texas	32.4%	62.9%	0	79.0%	0	1
Utah	26.4%	72.8%	2	51.7%	1	0
Vermont	36.8%	71.0%	11	56.3%	3	4
Virginia	37.8%	70.3%	3	95.9%	2	5
Washington	28.0%	71.1%	11	63.9%	0	0
West Virginia	57.5%	52.5%	3	90.5%	3	5
Wisconsin	30.5%	75.9%	13	88.9%	2	5
Wyoming	35.4%	67.9%	8	57.1%	0	0
Mean	36.7%	66.7%	7.75	72.6%	1.51	2.08
Standard Deviation	7.1%	6.2%	4.69	22.9%	1.19	1.98


Abbreviations used: CWF = community water fluoridation, SOHP = State Oral Health Plan, BSS = Basic Screening Survey.


^aSee previous page for definitions of variables.

KEY HIGHLIGHTS

 **IOWA** Big jump to number 3 ranking came from a new emphasis on oral care of older adults — see page 14 for details on the State Spotlights.

 **CALIFORNIA** Rebounding from years of recession, renewed attention on oral health propelled a rise into Top 10 — see page 15.

 **ALABAMA** A low ranking in the last volume got the attention of state officials, led to creation of a plan and commitment to goals in five key areas — see page 16.

 **MISSISSIPPI** The rankings don't tell the whole story, as exemplified by efforts to overcome ingrained challenges through the creation of a "culture of health" — see page 17.

Key Results

The 2018 results included in *A State of Decay, Vol. IV*, show continuation of state efforts to expand and improve the oral health of older Americans. The 2018 score includes new variables, making it a richer indicator of older adults' oral health. Performance in several categories evaluated previously show modest but definite improvements. In those areas where direct comparisons are possible with results in 2013 and 2016, consistency in the data indicate reliability of the information sources and agreement with known trends among oral health services and programs.



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STATE PERFORMANCE ON KEY MEASURES

Of the six key performance measures included in the 2018 calculations, four are policy variables that result from decisions made at the state level, and two are factors largely affected by individual attitudes, experiences, and actions. State legislators and executives, with input from departments of oral health or public health, are responsible for policy matters, while health promotion and interventions as well as public education and programming can be implemented within communities to improve individual health and behaviors.

As shown in Table 1, the four policy variables are the percentage of state residents with access to a fluoridated community water supply, the number of 13 oral health services covered by Medicaid, inclusion of older adults in an SOHP, and completion of an older adult BSS. A slight increase in the state average for the CWF variable, from 71.9% to 72.6%, may not sound like much, but with a population of 320 million in the United States, that represents about 2.2 million people. Details on the states' CWF scores are shown in Figure A2 of the Appendix that begins on page 20 of this report.

Medicaid coverage of oral health benefits also increased, with two states that provided no benefits in 2016 adding some of the 13 services measured in this survey (Delaware, with two services, and South Dakota, with 11; see Figures A1 and A3 in the Appendix for state-level data). As described in the California State Spotlight on page 15, an improvement in the state budget allowed restoration of oral health services under Medicaid. Core messages about the link between oral and systemic health also are being delivered to policymakers and legislators, and these can increase the awareness of how dollars spent on oral health are helping people control their medications.

State oral health officials have been busy including older adults in SOHPs (Figure A4) and BSSs (Figure A5). The 2018 data show 34 states have SOHPs, 31 of those include older adults, and 12 use SMART objectives. Similarly, 34 states either have completed a BSS for older adults or are planning to do so; 10 states completed a statewide BSS between 2013 and 2017, and another 6 states conducted a local pilot BSS.

FIGURE 1. STATE OVERALL SCORES ON PERCENTAGE SCALE

