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Medicaid Expansion Has Saved at Least 19,000 Lives, New Research Finds

State Decisions Not to Expand Have Led to 15,000 Premature Deaths

By Matt Broaddus and Aviva Aron-Dine

The Affordable Care Act's (ACA) expansion of Medicaid to low-income adults is preventing thousands of premature deaths each year, a landmark study finds.¹ It saved the lives of at least 19,200 adults aged 55 to 64 over the four-year period from 2014 to 2017. Conversely, 15,600 older adults died prematurely because of state decisions not to expand Medicaid. (See Figure 1; see Table 1 for state-by-state estimates.) The lifesaving impacts of Medicaid expansion are large: an estimated 39 to 64 percent reduction in annual mortality rates for older adults gaining coverage.

The new research fills a void, using a novel dataset to document sizable declines in mortality that smaller surveys could not detect. But its findings are consistent with a large body of research that has already documented that Medicaid expansion improves access to care and health outcomes.² For example, research shows that Medicaid expansion increased the share of low-income adults using medications to control chronic conditions like heart disease and diabetes. The new study finds particularly clear evidence of a drop in mortality from conditions like these, which are amenable to medication and other treatment.

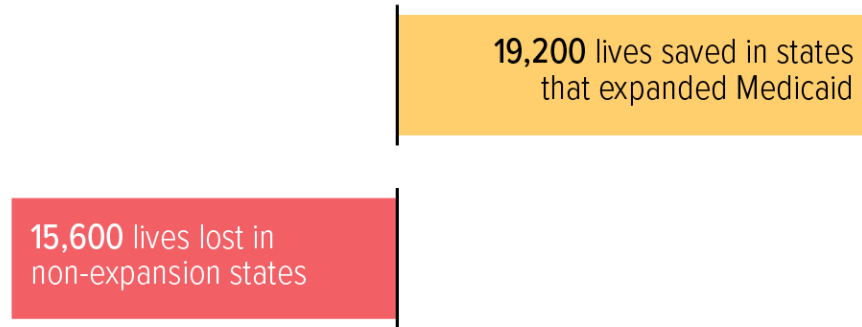
¹ Sarah Miller *et al.*, "Medicaid and Mortality: New Evidence from Linked Survey and Administrative Data," National Bureau of Economic Research working paper, August 2019, <https://www.nber.org/papers/w26081>.

² Larisa Antonisse *et al.*, "The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review," Kaiser Family Foundation, August 15, 2019, <https://www.kff.org/medicaid/issue-brief/the-effects-of-medicare-expansion-under-the-aca-updated-findings-from-a-literature-review-august-2019/>.

FIGURE 1

State Decisions to Expand Medicaid a Matter of Life and Death, New Research Shows

Cumulative impact on mortality among older adults, 2014-2017



Note: Older adults are those aged 55 to 64 at the onset of the study period, 2014.

Source: Miller et al, "Medicaid and Mortality," 2019

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This new evidence that thousands of lives are at stake should give states that have not yet expanded Medicaid one more reason to do so. It should also finally put to rest claims that Medicaid doesn't provide quality coverage, such as Center for Medicare & Medicaid Services (CMS) Administrator Seema Verma's suggestion that Medicaid expansion gave low-income adults "a[n insurance] card without care."³ On top of the already well-documented gains in access to care and financial security, the new study shows that gaining Medicaid coverage is literally a matter of life and death, particularly for people with serious health needs.

Sharp Drop in Premature Deaths After Expansion

The new study, by Sarah Miller, Sean Altekruze, Norman Johnson, and Laura Wherry (researchers at the University of Michigan, National Institutes of Health, Census Bureau, and University of California Los Angeles, respectively), compares mortality rates among 55- to 64-year-olds likely eligible for Medicaid in expansion states to mortality rates among similar older adults in non-expansion states.⁴

³ Centers for Medicare & Medicaid Services, "Speech: Remarks by Administrator Seema Verma at the National Association of Medicaid Directors (NAMD) 2017 Fall Conference," November 7, 2017, <https://www.cms.gov/newsroom/fact-sheets/speech-remarks-administrator-seema-verma-national-association-medicaid-directors-namd-2017-fall>.

⁴ The study sample population comprises those who were aged 55 to 64 in 2014, who either are in a household with income under 138 percent of the federal poverty line or have less than a high school education, who are citizens, and who do not receive Supplemental Security Income. These restrictions are intended to capture a population of older adults who are likely to benefit from Medicaid expansion.

A challenge in assessing the impact of Medicaid expansion on mortality is that mortality rates among non-elderly adults are low (about 33 deaths per 10,000 people each year),⁵ and only a fraction of those deaths are from “health-care-amenable” causes — preventable deaths that better medical care could help avoid (for example, from heart disease or diabetes) — versus causes less amenable to treatment (such as car accidents). This means that even sizable reductions in health-care-amenable mortality are hard to detect in most data sets.

The authors overcome this challenge in two ways. First, as noted, they focus on older adults, who have higher mortality rates overall and are at greater risk of premature death from treatable conditions. Second, they construct a novel dataset that links the American Community Survey — the largest federal survey with information on income, age, and other determinants of Medicaid eligibility — with administrative death records. The large sample lets them detect small changes in mortality that aren’t evident in other data.

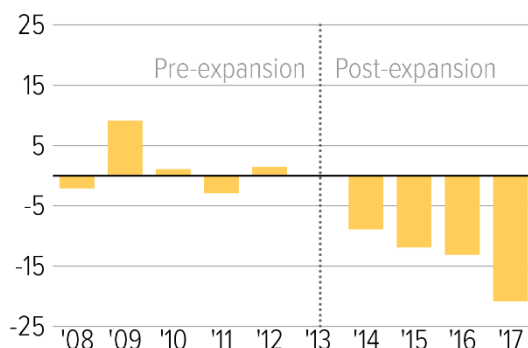
Prior to Medicaid expansion, the study finds, mortality trends among low-income older adults were similar in states that would and would not later expand Medicaid. But they sharply diverged starting in 2014, the first year of expansion. In 2014 the annual mortality rate for low-income older adults in expansion states fell by about 9 deaths per 10,000 people, compared to similar adults in non-expansion states, with the impact growing each year to about 21 deaths per 10,000 people in year 4.⁶ (See Figure 2.) These differences amount to about 19,200 lives saved among older adults in expansion states over four years, and about 15,600 lives lost among older adults in states choosing not to expand. By 2017 the *annual* impact is more than 7,000 lives saved in expansion states and almost 6,000 lives lost in non-expansion states.⁷

Even these estimates may understate the full effects of expansion. First, as the authors note, the effects grow in each year covered by the study (2014-2017), so it appears that “prolonged exposure to Medicaid results in increasing health improvements,” indicating that annual impacts in later years might be larger. Second, the study omits four states and Washington, D.C. that expanded Medicaid

FIGURE 2

Deaths Among Low-Income Older Adults Fell Sharply After Medicaid Expansion

Annual change in deaths per 10,000 people in states expanding Medicaid versus those that didn’t



Note: Older people are those aged 55 to 64 at the onset of the study period, 2014. Estimates are for the six years before and four years after implementation of expansion. In most states, these are 2008-2017, as shown, but a few states implemented expansion in 2015 or 2016.

Source: Miller et al., “Medicaid and Mortality,” 2019

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⁵ CBPP calculates a non-elderly mortality rate using mortality rate data by age group from the Centers for Disease Control and Prevention (CDC) weighted by population data by age group from the American Community Survey (ACS). The most recent available data are for 2017. Note that due to data limitations “non-elderly adults” here refers to those aged 15 to 64. For mortality rate data see Sherry Murphy *et al.*, “Mortality in the United States, 2017,” Centers for Disease Control and Prevention, November 2018, <https://www.cdc.gov/nchs/data/databriefs/db328-h.pdf>.

⁶ Estimates are for the six years before and four years after implementation of Medicaid expansion. In most states, the first year of expansion was 2014, but a few states implemented the policy in 2015 or 2016.

⁷ These estimates are CBPP calculations based on the mortality impacts and sample sizes reported in the paper.

under the ACA but did so before 2014. In total, these states now cover about 8.6 million people, or about 20 percent as many as are covered in the expansion states the study does include.⁸

Nonetheless, the estimates show that Medicaid expansion ranks with other major public health interventions in terms of its lifesaving potential. If all states had expanded Medicaid, the number of lives saved just among older adults in 2017 would roughly equal the number of lives that seatbelts saved among the full population, based on estimates from the National Highway Traffic Safety Commission.⁹ (See Figure 3.)

These aggregate mortality reductions translate into large drops in the annual risk of premature death for older adults gaining coverage: a 39 to 64 percent decrease in annual mortality rates, the authors estimate.¹⁰ To put that figure in context, it's close to the gap in mortality rates for older adults with incomes below the poverty line versus those above 400 percent of the poverty line.¹¹

The authors conduct several additional analyses to confirm that these gains are the result of expansion. First, they examine mortality trends in expansion and non-expansion states for people over 65, a group that was not affected by Medicaid expansion (since they already had coverage through Medicare), but likely would have been affected by other changes in public health or health care that differed between expansion and non-expansion states. There was no divergence in mortality rates for seniors between expansion and non-expansion states in 2014.

⁸ CBPP calculations based on the Centers for Medicare & Medicaid Services' (CMS) most recent Medicaid and CHIP Monthly Enrollment Report reflecting May 2019 enrollment, <https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-enrollment-data/index.html>. Excluded states are Delaware, Massachusetts, Washington, D.C., New York, and Vermont.

⁹ National Highway Traffic Safety Administration, accessed August 2019, <https://www.nhtsa.gov/risky-driving/seatbelts>. See also National Highway Traffic Safety Commission, "Lives Saved Calculations for Seat Belts and Frontal Air Bags," U.S. Department of Transportation, December 2009, <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811206>.

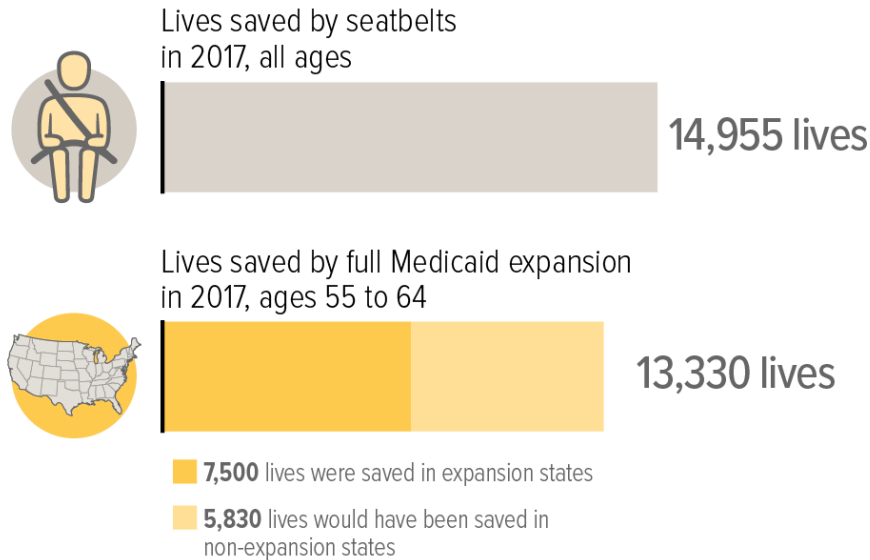
¹⁰ This estimate is larger than the estimated reduction in mortality for the study's full sample of older adults because only about 15 percent of those in the expansion state sample gained coverage through expansion.

¹¹ CBPP calculation based on estimates from the Miller *et al.* study. The mortality rate for 55- to 64-year-olds under 138 percent of the federal poverty line (FPL) is 1.7 percent, as compared to 0.4 percent for 55- to 64-year-olds above 400 percent FPL, according to data from the National Center for Health Statistics that is included in the study. The mortality rate for those above 400 percent FPL is roughly 76 percent lower. The poverty line is \$16,910 for a family of two, and 400 percent of the poverty line is \$67,640 for a family of two.

FIGURE 3

Medicaid Expansion Could Save as Many Lives as Seatbelts

If all states expanded Medicaid, the lives saved each year among older adults would nearly equal those of all ages saved by seatbelts.



Note: Older people are those aged 55 to 64 at the onset of the study period, 2014.
Source: National Highway and Transportation Safety Administration and Miller et al., "Medicaid and Mortality," 2019

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The authors also demonstrate that the mortality reductions were driven by reductions in deaths from “health-care-amenable” causes such as cardiovascular disease, diabetes, and kidney disease, conditions known to be responsive to medical care. As discussed further below, that’s consistent with the drop in overall mortality being driven by the types of gains in access to care that other research has already attributed to expansion.

Findings Consistent With Other Research on Benefits of Expansion

The new study’s results are striking but not surprising, since a large body of research has already documented mechanisms by which Medicaid expansion could be preventing premature deaths, and other studies have found reductions in mortality from pre-ACA coverage expansions.

For example, other studies (summarized in Figure 4) have found that Medicaid expansion resulted in:

- Large increases in prescriptions filled for heart disease, diabetes, mental health conditions, and other chronic conditions.¹²
- Large increases in the share of low-income adults getting regular check-ups and other preventive care, and large decreases in the share without a personal physician or usual source of care.¹³
- Large decreases in the share of low-income adults skipping medications due to cost.¹⁴
- Decreases in the share of low-income adults screening positive for depression.¹⁵
- An increase in the share of people getting surgical care consistent with clinical guidelines, for example less invasive surgical techniques where feasible.¹⁶
- Increases in cancer screenings and early-stage cancer diagnoses.¹⁷
- A decrease in one-year mortality rates for patients diagnosed with end-stage renal disease.¹⁸

As noted above, the authors find that post-expansion drops in mortality were driven by drops in deaths from the types of conditions expected to improve with health treatment, such as diabetes and cardiovascular disease. Other research finds that access to medications in particular has a large impact on mortality from these conditions.¹⁹

¹² Ausmita Ghosh, Kosali Simon, and Benjamin Sommers, “The Effect of Health Insurance on Prescription Drug Use Among Low-Income Adults: Evidence from Recent Medicaid Expansions,” *Journal of Health Economics*, Vol. 63, January 2019, <https://www.sciencedirect.com/science/article/pii/S0167629617300206>.

¹³ Benjamin Sommers *et al.*, “Changes in Utilization and Health Among Low-Income Adults After Medicaid Expansion or Expanded Private Insurance,” *JAMA Internal Medicine*, October 2016, <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2542420>.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ Andrew P. Lohrer *et al.*, “Association of the Affordable Care Act Medicaid Expansion with Access to and Quality of Care for Surgical Conditions,” *JAMA Surgical Medicine*, March 21, 2018, <https://jamanetwork.com/journals/jamasurgery/fullarticle/2670459>.

¹⁷ Aparna Soni *et al.*, “Effect of Medicaid Expansions of 2014 on Overall and Early-Stage Cancer Diagnoses,” *American Journal of Public Health*, February 2018, <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2017.304166>; Ahmedin Jenal *et al.*, “Changes in Insurance Coverage and Stage at Diagnosis Among Nonelderly Patients with Cancer After the Affordable Care Act,” *Journal of Clinical Oncology*, December 2017, <https://ascopubs.org/doi/10.1200/JCO.2017.73.7817>; and Emanuel Eguia *et al.*, “Impact of the Affordable Care Act (ACA) Medicaid Expansion on Cancer Admissions and Surgeries,” *Annals of Surgery*, Vol. 268, No. 4, October 2018, https://journals.lww.com/annalsurgery/Abstract/2018/10000/Impact_of_the_Affordable_Care_Act_ACA_Medicaid.6.aspx.

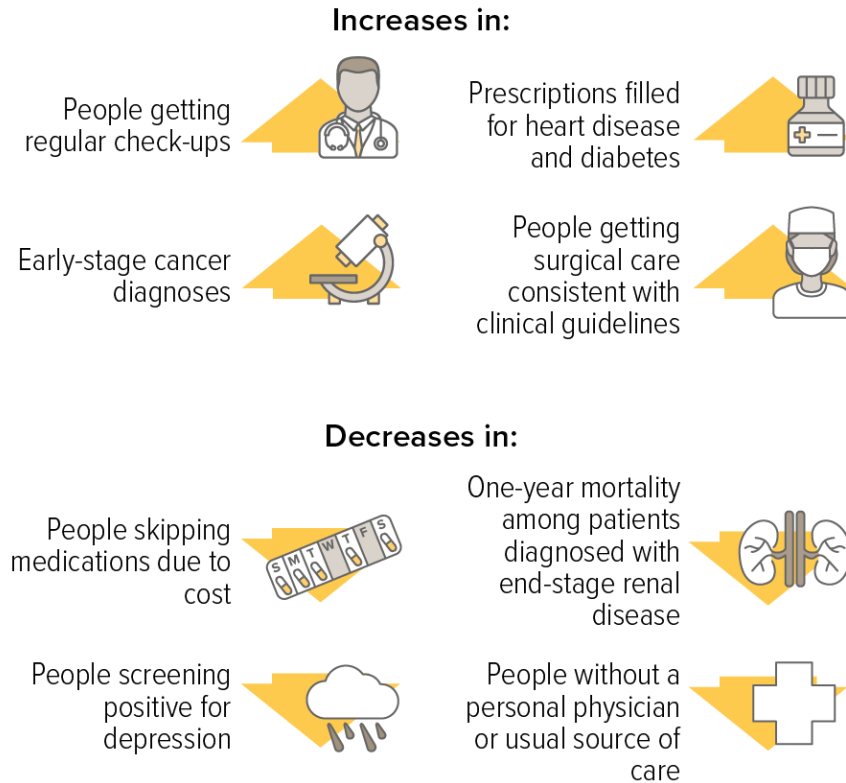
¹⁸ Swaminathan Aiyar *et al.*, “Association of Medicaid Expansion with 1-Year Mortality Among Patients with End-Stage Renal Disease,” *JAMA*, December 4, 2018, <https://www.ncbi.nlm.nih.gov/pubmed/30422251>.

¹⁹ Rebecca Myerson *et al.*, “Medicaid Eligibility Expansions May Address Gaps In Access To Diabetes Medications,” *Health Affairs*, Vol. 37, No. 8, August 2018, <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2018.0154>; and Elbert Huang, James Meigs, and Daniel Singer, “The Effect of Interventions to Prevent Cardiovascular Disease in Patients with Type 2 Diabetes Mellitus,” *American Journal of Medicine*, Vol. 111, No. 8, December 2001, [https://www.amjmed.com/article/S0002-9343\(01\)00978-0/fulltext](https://www.amjmed.com/article/S0002-9343(01)00978-0/fulltext).

FIGURE 4

Medicaid Expansion Has Saved 19,200 Lives Over Four Years, New Study Shows

The life-saving effects of expansion are no surprise, since earlier studies find that expansion leads to:



Source: Ghosh et al. 2019, Loehrer et al. 2018, Miller et al. 2019, Sommers et al. 2016, Soni et al. 2017, Swaminathan et al. 2018

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Meanwhile, studies looking at pre-ACA coverage expansions to low-income adults have found mortality reductions in line with the new estimates. One study found that early Medicaid expansions in New York, Arizona, and Maine led to a (statistically significant) 6 percent reduction in mortality after five years, which translates to roughly 3,200 fewer deaths among 20- to 64 year-olds in those three states in a single year; the study also pointed to the greatest reductions being in deaths by health-care-amenable causes.²⁰ Another study found that Massachusetts' Medicaid expansion led to a

²⁰ Benjamin Sommers, "State Medicaid Expansions and Mortality, Revisited: A Cost-Benefit Analysis," *American Journal of Health Economics*, 2017, https://www.mitpressjournals.org/doi/pdf/10.1162/ajhe_a_00080. Note, this is a follow-up to an original Sommers, Katherine Baicker, and Arnold Epstein article published in the *New England Journal of Medicine* in September 2012. That study also found a 6.1 percent relative reduction in all-cause mortality equating to nearly 20 lives saved per 100,000 adults. The revised study improves upon the comparison group selection, and uses more detailed data

significant 2.9 percent reduction in all-cause mortality, which translates to roughly 340 fewer deaths among 20- to 64 year-olds in a single year, with the majority of the reduction being deaths in health-care-amenable causes.²¹

The new study's authors also show that their results are in line with an Oregon study that some cite as evidence that expanding Medicaid to low-income adults does not save lives. In 2008 Oregon expanded Medicaid to a limited number of low-income adults chosen in a lottery from among those eligible, which enables researchers to compare outcomes for those selected to the otherwise similar adults not selected.²² Mortality among older adults who gained coverage fell by more than two-thirds compared to those who did not, but in the study's relatively small sample, the drop was not statistically significant. In contrast, with the new study's larger data set, a similar drop in annual mortality is statistically significant.

Study Highlights Importance of Medicaid Expansion for Remaining States

The study's design allowed the analysts to provide supplemental, state-level estimates of the mortality impact of expanding Medicaid to low-income adults.²³ These estimates, shown in Table 1, show that the 14 states that have not yet adopted or implemented expansion could be saving hundreds or thousands of lives.

This clear evidence of the lives that are at stake provides yet another reason — on top of the already well-documented improvements in access to care, health outcomes, financial security, and state and hospital finances — for these states to take up expansion without delay.²⁴

on causes of death. CBPP calculates the estimate of fewer deaths by applying the Sommers study results to the total population of adults aged 20 to 64 living in Arizona, Maine, or New York in 2017.

²¹ Benjamin Sommers, Sharon Long, and Katherine Baicker, "Changes in Mortality After Massachusetts Health Care Reform: A Quasi-experimental Study," *Annals of Internal Medicine*, Vol. 160, No. 9, May 6, 2014, <https://docs.house.gov/meetings/IF/IF02/20140507/102194/HHRG-113-IF02-20140507-SD006.pdf>. CBPP calculates the estimate of fewer deaths by applying the Sommers study results to the total population of adults aged 20 to 64 living in Massachusetts in 2017.

²² Amy Finkelstein *et al.*, "The Oregon Health Insurance Experiment: Evidence from the First Year," National Bureau of Economic Research Working Paper No. 17190, July 2011, <https://www.nber.org/papers/w17190>.

²³ Using population survey data, the authors determine the size of the population in each state that matches the study sample criteria and then uniformly apply the national-level mortality rate impact of Medicaid expansion to each state's sample population. These estimates were released as a supplement to the main paper. Sarah Miller *et al.*, "State Level Mortality Estimates Based on Miller *et al.* 2019 NBER Working Paper 26081," National Bureau of Economic Research working paper, August 17, 2019, http://www-personal.umich.edu/~mille/ACAMortality_ByState.pdf.

²⁴ Center on Budget and Policy Priorities, "Chart Book: The Far-Reaching Benefits of the Affordable Care Act's Medicaid Expansion," October 2, 2018, <https://www.cbpp.org/research/health/chart-book-the-far-reaching-benefits-of-the-affordable-care-acts-medicaid>.

TABLE 1

Lives Saved, and Lost, Due to States' Medicaid Expansion Decisions, Adults Aged 55-64

State	Lives at stake, 2014 to 2017
Alabama	768
Alaska*	76
Arizona	808
Arkansas	440
California	4,448
Colorado	520
Connecticut	304
Florida	2,776
Georgia	1,336
Hawaii	156
Idaho**	180
Illinois	1,380
Indiana*	796
Iowa	272
Kansas	288
Kentucky	704
Louisiana*	764
Maine*	180
Maryland	528
Michigan*	1,196
Minnesota	460
Mississippi	540
Missouri	776
Montana*	132
Nebraska**	152
Nevada	356
New Hampshire*	120
New Jersey	828
New Mexico	284
North Carolina	1,400
North Dakota	44
Ohio	1,452
Oklahoma	476
Oregon	484
Pennsylvania*	1,476
Rhode Island	120

TABLE 1

Lives **Saved**, and **Lost**, Due to States' Medicaid Expansion Decisions, Adults Aged 55-64

State	Lives at stake, 2014 to 2017
South Carolina	788
South Dakota	84
Tennessee	964
Texas	2,920
Utah**	216
Virginia*	900
Washington	688
West Virginia	348
Wisconsin	576
Wyoming	64

Figures colored orange represent lives lost in states that have not adopted Medicaid expansion for low-income adults under the Affordable Care Act. Blue represents lives saved in expansion states. Table omits the District of Columbia, Massachusetts, New York, and Vermont, because they expanded Medicaid prior to 2014 and are therefore excluded from the analysis.

* Some states expanded Medicaid to low-income adults effective after January 1, 2014: Michigan (April 2014), New Hampshire (August 2014), Pennsylvania (January 2015), Indiana (February 2015), Alaska (September 2015), Montana (January 2016), Louisiana (July 2016), Virginia (January 2019), and Maine (January 2019). In these states, estimates represent lives saved over the first four years with expansion fully in effect.

** Estimates for Idaho, Nebraska, and Utah are lives lost from 2014 to 2017. These states have adopted Medicaid expansion but have yet to implement it.

Source: CBPP calculations based on Miller *et al.* supplemental estimates.