The following appendices are supplemental to a Commonwealth Fund issue brief, L. Ku, E. Steinmetz, E. Brantley et al., *The American Health Care Act: Economic and Employment Consequences for States* (The Commonwealth Fund, June 2017), available on the Fund's website at: http://www.commonwealthfund.org/publications/issue-briefs/2017/jun/ahca-economic-and-employment-consequences.

Appendix A1. State-Level Changes in Employment Due to the American Health Care Act, 2018 to 2026 (thousands of jobs)

	Status*	2018	2019	2020	2021	2022	2023	2024	2025	2026
Alabama		12.9	15.8	6.4	-0.2	-2.8	-4.8	-6.1	-7.4	-10.2
Alaska	M	2.2	2.1	0.3	-0.8	-1.3	-1.6	-1.8	-2.1	-2.6
Arizona	M	23.8	25.9	14.7	7.0	3.6	1.6	-0.5	-2.8	-7.6
Arkansas	M, T	-0.3	1.1	-4.3	-8.6	-10.5	-12.1	-12.5	-13.0	-14.3
California	M	136.3	97.9	63.3	22.7	6.1	2.5	-2.3	-10.7	-32.1
Colorado	M	22.5	23.2	19.6	14.5	11.8	10.4	9.2	7.3	2.8
Connecticut	M	12.2	9.6	-1.2	-9.4	-12.9	-14.5	-15.8	-17.4	-20.3
Delaware	M	2.7	2.3	-0.6	-2.8	-3.7	-4.2	-4.7	-5.1	-5.9
Dist. Columbia	M	2.5	1.9	-0.2	-1.8	-2.4	-2.8	-3.2	-3.6	-4.3
Florida		57.8	69.9	3.7	-40.1	-51.7	-60.8	-66.2	-71.1	-83.2
Georgia		32.2	41.2	21.4	6.0	0.3	-4.1	-7.0	-10.0	-16.2
Hawaii	M	7.1	6.5	6.0	5.2	4.5	3.5	3.2	2.7	1.8
Idaho		4.8	5.5	3.4	1.6	1.0	0.4	0.1	-0.4	-1.4
Illinois	M, T	-1.7	3.1	-14.3	-29.4	-35.4	-39.2	-39.0	-39.9	-45.5
Indiana	M, T	5.3	7.4	-3.8	-12.9	-17.0	-19.9	-21.2	-22.6	-26.0
Iowa	M	8.0	7.7	2.9	-1.5	-3.6	-5.0	-5.9	-7.0	-9.2
Kansas		8.4	10.1	5.0	1.1	-0.5	-1.7	-2.5	-3.3	-5.3
Kentucky	M	8.5	6.6	1.1	-5.2	-8.6	-10.8	-12.3	-13.8	-16.5
Louisiana	M	14.8	17.6	2.5	-8.3	-12.8	-15.8	-16.0	-17.6	-21.0
Maine		3.0	3.4	-1.6	-5.2	-6.6	-7.5	-8.2	-8.9	-10.0
Maryland	M	19.2	16.7	4.8	-5.5	-10.3	-12.5	-14.4	-16.7	-21.2
Massachusetts	M	21.2	24.6	10.5	-1.4	-7.4	-10.0	-12.5	-15.9	-22.2
Michigan	M, T	-15.7	-13.4	-24.9	-36.2	-41.8	-45.8	-46.1	-47.0	-50.8
Minnesota	M	16.7	15.1	4.9	-5.0	-9.9	-13.0	-15.3	-17.7	-22.1
Mississippi		7.6	9.3	3.8	0.0	-1.7	-3.0	-3.7	-4.5	-6.2
Missouri		13.7	16.3	1.9	-8.1	-12.0	-14.9	-16.6	-18.5	-22.6
Montana	M	3.4	3.4	1.6	-0.1	-0.9	-1.7	-2.1	-2.5	-3.3
Nebraska		5.7	6.5	2.8	-0.1	-1.4	-2.3	-2.9	-3.6	-5.0
Nevada	M	10.5	8.9	6.6	4.2	3.1	2.7	2.2	1.5	-0.5
New Hampshire	M, T	2.5	3.0	0.0	-2.4	-3.6	-4.2	-4.4	-4.9	-6.0
New Jersey	M	31.3	25.3	1.3	-17.5	-25.3	-28.6	-31.6	-35.2	-41.9
New Mexico	M, T	-3.7	-3.9	-6.3	-8.3	-9.4	-10.3	-10.3	-10.3	-11.0
New York	M	60.8	58.5	5.1	-29.6	-45.7	-53.4	-61.5	-70.6	-86.1
North Carolina		26.3	30.0	0.3	-19.4	-25.6	-30.0	-32.8	-35.3	-41.2
North Dakota	M	3.1	3.3	1.8	0.2	-0.7	-1.3	-1.7	-2.1	-2.9
Ohio	M	23.8	20.0	6.9	-9.8	-19.4	-24.9	-29.1	-33.7	-41.7
Oklahoma		11.4	14.4	7.5	2.3	0.0	-1.7	-2.7	-3.7	-6.0
Oregon	M	10.5	4.8	0.0	-5.7	-8.5	-10.0	-11.2	-12.4	-15.0
Pennsylvania	M	34.9	27.0	-11.4	-42.0	-55.2	-62.9	-69.0	-74.8	-84.9
Rhode Island	M	2.6	1.7	-1.1	-3.4	-4.5	-5.1	-5.6	-6.1	-7.0
South Carolina		13.0	15.2	5.4	-1.3	-3.6	-5.3	-6.5	-7.7	-10.4
South Dakota		2.7	2.9	1.3	-0.2	-0.8	-1.3	-1.6	-1.9	-2.6
Tennessee		18.1	21.8	3.8	-9.5	-15.1	-19.2	-21.8	-24.0	-28.4
Texas		118.3	151.1	94.9	51.1	31.6	17.1	8.6	0.0	-19.8
Utah		12.2	14.4	12.1	9.6	8.5	7.8	7.2	6.2	3.9
Vermont	M	1.9	2.0	0.1	-1.3	-2.0	-2.4	-2.8	-3.1	-3.7
Virginia		24.9	27.3	13.4	2.6	-1.6	-3.7	-5.4	-7.7	-12.9
Washington	M, T	7.0	9.5	12.5	12.2	11.3	11.0	11.7	11.1	7.8
West Virginia	M	3.3	2.5	-1.7	-5.1	-6.7	-7.7	-8.4	-9.1	-10.2
Wisconsin		11.1	12.8	0.4	-9.0	-12.9	-15.6	-17.2	-18.8	-22.5
Wyoming		2.1	2.4	1.9	1.3	1.0	0.7	0.6	0.4	-0.1

* M = Medicaid expansion state, T = state terminates expansion if match rate is reduced.

Source: George Washington University analysis.

Appendix A2. State-Level Changes in Health Employment Due to American Health Care Act, 2018 to 2026 (thousands of jobs)

	Status*	2018	2019	2020	2021	2022	2023	2024	2025	2026
Alabama		0.4	0.8	-2.9	-5.3	-6.0	-6.8	-7.3	-7.7	-8.1
Alaska	M	0.1	0.0	-0.9	-1.4	-1.5	-1.6	-1.7	-1.8	-1.9
Arizona	M	1.9	2.0	-2.9	-6.0	-7.2	-8.0	-8.9	-9.6	-10.4
Arkansas	M, T	-3.5	-3.0	-5.3	-7.0	-7.7	-8.4	-8.6	-8.7	-8.9
California	M	6.2	-11.2	-26.2	-42.9	-49.9	-53.8	-57.7	-60.8	-64.2
Colorado	M	1.3	0.4	-1.0	-2.8	-3.6	-4.2	-4.6	-5.0	-5.5
Connecticut	M	0.4	-1.4	-6.2	-9.5	-10.8	-11.6	-12.5	-13.2	-13.9
Delaware	M	0.1	-0.2	-1.5	-2.3	-2.6	-2.9	-3.1	-3.2	-3.4
Dist. Columbia	M	0.1	-0.2	-1.2	-1.9	-2.2	-2.4	-2.5	-2.7	-2.9
Florida		-0.1	2.7	-23.9	-40.5	-44.0	-47.9	-50.5	-52.2	-54.1
Georgia		1.1	3.3	-4.0	-9.3	-10.9	-12.5	-13.5	-14.3	-15.2
Hawaii	M	1.0	0.6	0.3	-0.1	-0.4	-0.9	-1.1	-1.1	-1.3
Idaho		0.1	0.2	-0.8	-1.6	-1.9	-2.1	-2.3	-2.4	-2.6
Illinois	M, T	-15.7	-13.8	-20.0	-25.5	-27.7	-29.8	-30.1	-30.3	-30.8
Indiana	M, T	-4.7	-4.2	-8.7	-12.1	-13.5	-14.7	-15.3	-15.8	-16.3
Iowa	M	-0.3	-0.8	-2.5	-4.0	-4.6	-5.1	-5.5	-5.7	-6.1
Kansas		0.2	0.5	-1.6	-3.0	-3.5	-4.0	-4.3	-4.6	-4.9
Kentucky	M	-0.6	-2.0	-4.2	-6.6	-7.9	-8.8	-9.4	-10.0	-10.5
Louisiana	M	0.1	0.1	-6.3	-10.2	-11.4	-12.4	-12.2	-12.8	-13.5
Maine		-0.3	-0.3	-2.6	-4.1	-4.6	-5.0	-5.3	-5.5	-5.8
Maryland	M	1.0	-1.0	-5.9	-9.8	-11.3	-12.4	-13.3	-14.1	-15.0
Massachusetts	M	0.6	1.6	-4.4	-9.0	-11.1	-12.4	-13.7	-15.0	-16.4
Michigan	M, T	-17.4	-15.9	-20.4	-25.1	-27.4	-29.5	-29.8	-30.1	-30.6
Minnesota	M	0.4	-1.0	-5.0	-8.7	-10.3	-11.5	-12.4	-13.2	-14.0
Mississippi		0.1	0.3	-1.9	-3.3	-3.7	-4.2	-4.5	-4.7	-5.0
Missouri		-0.8	-0.3	-6.4	-10.2	-11.4	-12.5	-13.3	-13.9	-14.6
Montana	M	0.2	0.0	-0.9	-1.6	-1.8	-2.2	-2.3	-2.4	-2.6
Nebraska		0.1	0.2	-1.3	-2.4	-2.7	-3.0	-3.3	-3.4	-3.6
Nevada	M	0.4	-0.5	-1.3	-2.2	-2.5	-2.7	-2.9	-3.1	-3.3
New Hampshire	M, T	-1.1	-1.0	-2.1	-2.9	-3.3	-3.5	-3.7	-3.8	-4.0
New Jersey	M	1.7	-2.5	-12.3	-19.6	-22.3	-24.1	-25.9	-27.4	-29.0
New Mexico	M, T	-4.3	-4.3	-5.3	-6.1	-6.6	-7.0	-7.0	-7.0	-7.0
New York	M	5.0	3.4	-21.8	-36.7	-43.6	-48.1	-53.0	-57.2	-61.8
North Carolina		-0.1	0.0	-12.1	-19.3	-21.0	-22.8	-24.1	-25.0	-26.1
North Dakota	M	0.0	-0.1	-0.7	-1.2	-1.4	-1.5	-1.7	-1.7	-1.8
Ohio	M	-1.8	-4.9	-10.0	-16.7	-20.4	-22.7	-24.7	-26.3	-28.1
Oklahoma		0.4	0.8	-2.1	-3.9	-4.6	-5.2	-5.6	-5.9	-6.2
Oregon	M	-0.1	-3.1	-5.4	-8.0	-9.2	-10.1	-10.8	-11.2	-11.8
Pennsylvania	M	0.6	-4.9	-22.4	-35.3	-40.2	-43.8	-47.1	-49.7	-52.5
Rhode Island	M	0.0	-0.7	-2.0	-3.0	-3.5	-3.8	-4.1	-4.3	-4.6
South Carolina		0.3	0.6	-3.0	-5.3	-5.9	-6.5	-6.9	-7.3	-7.7
South Dakota		0.0	0.0	-0.8	-1.3	-1.5	-1.7	-1.8	-1.9	-2.0
Tennessee		0.1	0.6	-5.8	-9.9	-11.4	-12.7	-13.6	-14.3	-15.0
Texas		8.3	13.5	-8.7	-23.1	-27.6	-32.1	-35.1	-37.3	-40.1
Utah		0.7	1.0	-0.1	-1.0	-1.4	-1.7	-1.9	-2.1	-2.3
Vermont	M	0.1	0.0	-0.8	-1.4	-1.6	-1.8	-1.9	-2.0	-2.2
Virginia		0.9	1.0	-4.2	-7.8	-8.9	-9.8	-10.6	-11.1	-11.8
Washington	M, T	-5.3	-4.3	-3.5	-4.1	-4.8	-5.5	-5.4	-5.4	-5.6
West Virginia	M	-0.2	-0.7	-2.7	-4.1	-4.7	-5.1	-5.5	-5.8	-6.1
Wisconsin		-1.4	-1.1	-6.1	-9.5	-10.7	-11.7	-12.4	-12.9	-13.5
Wyoming		0.1	0.0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5

* M = Medicaid expansion state, T = state terminates expansion if match rate is reduced.

Source: George Washington University analysis.

Appendix A3. State-Level Changes in Gross State Product Due to American Health Care Act, 2018 to 2026 (millions of current $)

	Status*	2018	2019	2020	2021	2022	2023	2024	2025	2026
Alabama		$1,135	$1,434	$672	$93	-$136	-$328	-$455	-$597	-$932
Alaska	M	$265	$277	$87	-$52	-$115	-$158	-$196	-$237	-$324
Arizona	M	$2,187	$2,474	$1,552	$888	$608	$452	$279	$55	-$513
Arkansas	M, T	$65	$194	-$259	-$646	-$837	-$1,009	-$1,088	-$1,170	-$1,365
California	M	$15,362	$12,129	$8,750	$4,457	$2,784	$2,645	$2,373	$1,502	-$1,582
Colorado	M	$2,289	$2,463	$2,167	$1,708	$1,487	$1,408	$1,345	$1,173	$608
Connecticut	M	$1,504	$1,338	$216	-$704	-$1,136	-$1,345	-$1,538	-$1,795	-$2,295
Delaware	M	$282	$259	-$18	-$242	-$347	-$413	-$473	-$540	-$658
Dist. Columbia	M	$380	$329	$54	-$180	-$298	-$372	-$445	-$534	-$689
Florida		$5,186	$6,470	$782	-$3,248	-$4,481	-$5,532	-$6,269	-$7,010	-$8,689
Georgia		$3,009	$3,937	$2,181	$753	$229	-$200	-$496	-$836	-$1,648
Hawaii	M	$701	$671	$652	$588	$530	$437	$411	$370	$259
Idaho		$394	$469	$316	$176	$128	$91	$67	$34	-$72
Illinois	M, T	$445	$929	-$790	-$2,401	-$3,143	-$3,658	-$3,757	-$4,007	-$4,929
Indiana	M, T	$707	$939	-$54	-$926	-$1,361	-$1,680	-$1,854	-$2,061	-$2,560
Iowa	M	$819	$843	$415	$1	-$206	-$346	-$440	-$562	-$852
Kansas		$794	$976	$545	$193	$48	-$62	-$129	-$219	-$458
Kentucky	M	$782	$686	$234	-$329	-$655	-$877	-$1,052	-$1,240	-$1,586
Louisiana	M	$1,461	$1,803	$485	-$551	-$1,032	-$1,371	-$1,427	-$1,646	-$2,127
Maine		$268	$306	-$105	-$415	-$557	-$663	-$750	-$841	-$995
Maryland	M	$1,918	$1,797	$677	-$370	-$896	-$1,173	-$1,427	-$1,755	-$2,402
Massachusetts	M	$2,485	$2,941	$1,483	$163	-$522	-$820	-$1,121	-$1,594	-$2,570
Michigan	M, T	-$804	-$614	-$1,692	-$2,830	-$3,484	-$3,988	-$4,167	-$4,418	-$5,070
Minnesota	M	$1,830	$1,793	$795	-$229	-$771	-$1,136	-$1,423	-$1,750	-$2,420
Mississippi		$611	$775	$354	$42	-$96	-$210	-$280	-$361	-$552
Missouri		$1,297	$1,590	$350	-$575	-$968	-$1,276	-$1,484	-$1,736	-$2,284
Montana	M	$294	$308	$153	$2	-$79	-$155	-$202	-$251	-$350
Nebraska		$545	$640	$322	$47	-$74	-$168	-$234	-$313	-$494
Nevada	M	$999	$908	$720	$496	$399	$364	$326	$247	$8
New Hampshire	M, T	$294	$355	$78	-$168	-$291	-$357	-$393	-$455	-$611
New Jersey	M	$3,493	$3,106	$681	-$1,341	-$2,276	-$2,714	-$3,132	-$3,687	-$4,780
New Mexico	M, T	-$202	-$203	-$428	-$631	-$757	-$868	-$893	-$925	-$1,047
New York	M	$7,635	$7,718	$2,023	-$2,068	-$4,128	-$5,184	-$6,326	-$7,777	-$10,465
North Carolina		$2,406	$2,829	$274	-$1,523	-$2,149	-$2,623	-$2,963	-$3,320	-$4,126
North Dakota	M	$375	$426	$255	$63	-$55	-$136	-$193	-$257	-$390
Ohio	M	$2,471	$2,326	$1,150	-$422	-$1,371	-$1,966	-$2,450	-$3,029	-$4,126
Oklahoma		$1,096	$1,422	$833	$349	$138	-$25	-$106	-$199	-$494
Oregon	M	$1,016	$591	$177	-$354	-$636	-$798	-$926	-$1,077	-$1,426
Pennsylvania	M	$3,562	$3,105	-$347	-$3,313	-$4,771	-$5,708	-$6,526	-$7,402	-$8,920
Rhode Island	M	$256	$200	-$41	-$263	-$377	-$445	-$509	-$584	-$713
South Carolina		$1,163	$1,410	$585	-$11	-$228	-$396	-$515	-$653	-$992
South Dakota		$253	$285	$139	$7	-$55	-$103	-$138	-$179	-$268
Tennessee		$1,696	$2,134	$352	-$1,067	-$1,716	-$2,247	-$2,623	-$2,993	-$3,676
Texas		$11,773	$15,491	$10,557	$6,443	$4,660	$3,384	$2,742	$1,951	-$547
Utah		$1,092	$1,334	$1,172	$979	$912	$881	$859	$789	$541
Vermont	M	$166	$179	$25	-$101	-$166	-$215	-$251	-$292	-$368
Virginia		$2,461	$2,798	$1,481	$387	-$59	-$302	-$495	-$795	-$1,523
Washington	M, T	$1,027	$1,335	$1,688	$1,700	$1,669	$1,714	$1,887	$1,871	$1,418
West Virginia	M	$345	$314	-$57	-$387	-$559	-$680	-$778	-$875	-$1,044
Wisconsin		$1,104	$1,323	$239	-$656	-$1,059	-$1,363	-$1,560	-$1,787	-$2,290
Wyoming		$252	$298	$238	$167	$127	$102	$87	$62	-$10

* M = Medicaid expansion state, T = state terminates expansion if match rate is reduced.

Source: George Washington University analysis.

Appendix A4. State-Level Changes in Business Output Due to the American Health Care Act, 2018 to 2026 (millions of current $)

	Status*	2018	2019	2020	2021	2022	2023	2024	2025	2026
Alabama		$2,152	$2,721	$1,393	$382	-$2	-$300	-$475	-$685	-$1,270
Alaska	M	$505	$530	$180	-$77	-$192	-$268	-$333	-$405	-$564
Arizona	M	$3,508	$3,991	$2,471	$1,361	$882	$607	$309	-$70	-$995
Arkansas	M, T	$231	$485	-$314	-$991	-$1,311	-$1,588	-$1,702	-$1,829	-$2,169
California	M	$25,920	$20,485	$14,739	$7,455	$4,628	$4,386	$3,935	$2,480	-$2,650
Colorado	M	$3,900	$4,207	$3,691	$2,898	$2,513	$2,370	$2,260	$1,968	$1,013
Connecticut	M	$2,596	$2,340	$469	-$1,056	-$1,756	-$2,084	-$2,382	-$2,797	-$3,626
Delaware	M	$479	$442	-$31	-$413	-$592	-$703	-$802	-$914	-$1,113
Dist. Columbia	M	$643	$557	$87	-$311	-$510	-$633	-$755	-$906	-$1,166
Florida		$8,273	$10,418	$1,147	-$5,437	-$7,442	-$9,140	-$10,318	-$11,508	-$14,193
Georgia		$5,207	$6,793	$3,797	$1,378	$516	-$172	-$628	-$1,165	-$2,524
Hawaii	M	$1,221	$1,182	$1,147	$1,032	$926	$764	$715	$640	$444
Idaho		$683	$808	$539	$292	$204	$139	$97	$38	-$147
Illinois	M, T	$1,045	$1,927	-$1,055	-$3,837	-$5,091	-$5,930	-$6,050	-$6,449	-$8,040
Indiana	M, T	$1,688	$2,182	$359	-$1,233	-$1,986	-$2,490	-$2,707	-$3,011	-$3,924
Iowa	M	$1,779	$1,863	$970	$134	-$255	-$482	-$593	-$778	-$1,346
Kansas		$1,460	$1,797	$1,027	$396	$142	-$44	-$148	-$297	-$723
Kentucky	M	$1,490	$1,370	$540	-$462	-$1,022	-$1,391	-$1,665	-$1,972	-$2,582
Louisiana	M	$2,809	$3,476	$1,155	-$674	-$1,492	-$2,032	-$2,070	-$2,403	-$3,240
Maine		$486	$556	-$147	-$679	-$916	-$1,087	-$1,219	-$1,364	-$1,627
Maryland	M	$3,127	$2,957	$1,150	-$540	-$1,386	-$1,827	-$2,222	-$2,742	-$3,778
Massachusetts	M	$4,239	$4,996	$2,541	$319	-$822	-$1,318	-$1,815	-$2,606	-$4,238
Michigan	M, T	-$895	-$478	-$2,380	-$4,365	-$5,458	-$6,260	-$6,497	-$6,885	-$8,032
Minnesota	M	$3,259	$3,217	$1,454	-$341	-$1,276	-$1,888	-$2,347	-$2,887	-$4,045
Mississippi		$1,167	$1,489	$745	$193	-$39	-$219	-$313	-$433	-$767
Missouri		$2,334	$2,873	$741	-$852	-$1,513	-$2,013	-$2,327	-$2,728	-$3,664
Montana	M	$555	$587	$298	$16	-$131	-$262	-$339	-$423	-$604
Nebraska		$1,076	$1,260	$667	$158	-$56	-$207	-$298	-$422	-$755
Nevada	M	$1,666	$1,524	$1,202	$813	$639	$574	$504	$369	-$33
New Hampshire	M, T	$500	$600	$134	-$280	-$484	-$594	-$656	-$762	-$1,023
New Jersey	M	$5,840	$5,282	$1,388	-$1,846	-$3,319	-$3,979	-$4,592	-$5,447	-$7,198
New Mexico	M, T	-$314	-$306	-$691	-$1,038	-$1,247	-$1,426	-$1,461	-$1,511	-$1,716
New York	M	$13,428	$13,546	$4,115	-$2,691	-$6,023	-$7,663	-$9,410	-$11,742	-$16,216
North Carolina		$4,177	$4,917	$601	-$2,425	-$3,455	-$4,215	-$4,744	-$5,313	-$6,663
North Dakota	M	$702	$802	$485	$126	-$93	-$240	-$343	-$459	-$701
Ohio	M	$4,518	$4,377	$2,281	-$435	-$2,023	-$2,975	-$3,702	-$4,617	-$6,488
Oklahoma		$1,925	$2,513	$1,498	$659	$299	$29	-$95	-$243	-$747
Oregon	M	$1,744	$1,040	$332	-$579	-$1,066	-$1,344	-$1,563	-$1,823	-$2,420
Pennsylvania	M	$6,270	$5,603	-$180	-$5,138	-$7,533	-$9,027	-$10,294	-$11,693	-$14,217
Rhode Island	M	$434	$353	-$42	-$401	-$584	-$690	-$789	-$908	-$1,118
South Carolina		$2,059	$2,510	$1,112	$99	-$258	-$521	-$696	-$904	-$1,474
South Dakota		$455	$515	$248	$7	-$106	-$191	-$251	-$323	-$480
Tennessee		$3,032	$3,822	$752	-$1,682	-$2,765	-$3,633	-$4,225	-$4,821	-$5,981
Texas		$20,230	$26,706	$18,307	$11,264	$8,242	$6,131	$5,131	$3,857	-$365
Utah		$1,863	$2,279	$2,000	$1,666	$1,546	$1,489	$1,451	$1,333	$910
Vermont	M	$284	$307	$43	-$171	-$281	-$362	-$422	-$491	-$619
Virginia		$4,174	$4,749	$2,523	$677	-$69	-$470	-$782	-$1,277	-$2,492
Washington	M, T	$1,920	$2,464	$3,039	$3,042	$2,996	$3,096	$3,419	$3,414	$2,629
West Virginia	M	$626	$587	-$65	-$642	-$934	-$1,134	-$1,285	-$1,442	-$1,729
Wisconsin		$2,104	$2,513	$575	-$1,027	-$1,737	-$2,252	-$2,565	-$2,944	-$3,841
Wyoming		$487	$574	$462	$329	$255	$211	$186	$142	$6

* M = Medicaid expansion state, T = state terminates expansion if match rate is reduced.

Source: George Washington University analysis.

Appendix B. Study Methods

Our approach is similar to the methodology described in our previous reports on ACA repeal.[1,2] We use REMI's PI+ model (version 2.0), which is a dynamic, structural equation system that has been widely used for a variety of economic analyses by public agencies, state legislatures, universities, and private clients across the nation.[3] More information about the model, its methodology, and data sources is available at REMI's website (www.remi.com). The figure below illustrates the structural linkages in the model. The economic, demographic, and employment data used in PI+ come from a variety of sources, particularly from the Bureau of Economic Analysis.

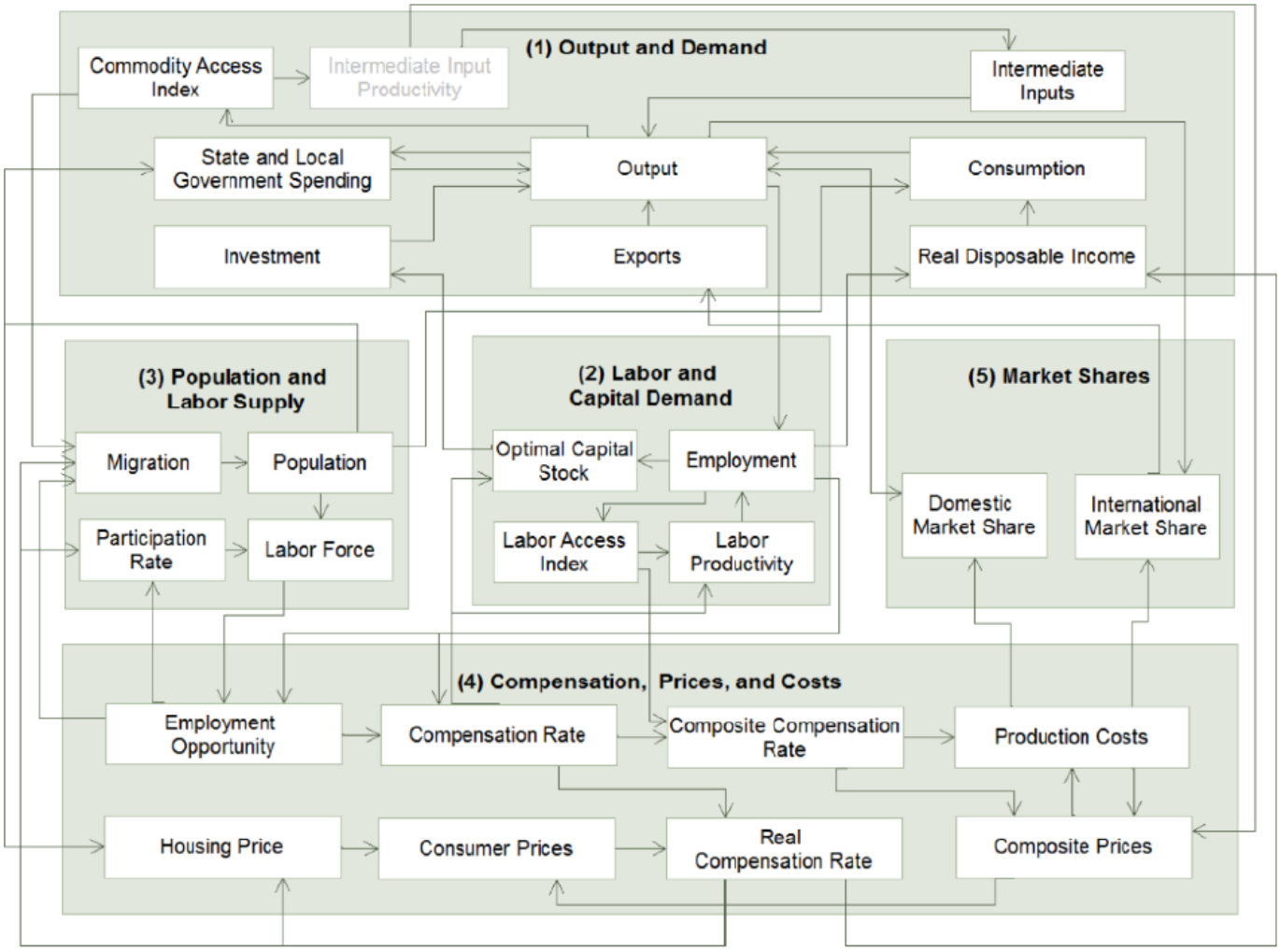
Researchers at George Washington University estimated changes in federal funds (spending or revenue) for all major provisions of the AHCA for all states for every year from calendar year 2018 to 2026. At the national level, our estimates are aligned with the Congressional Budget Office's (CBO's) May 24 estimates[4] and we allocated these changes to every state. The state-level estimates were then applied as policy changes (or inputs) to the economic baselines in the PI+ model. The model includes year- and state-specific baseline projections for models of employment and other economic parameters for each state and modifies the estimates based on changes in the inputs. Estimates of the effects of the AHCA are based on differences between the baseline and estimates that result after the addition or subtraction of funds in various parts of the economies. For example, changes related to direct health care spending, such as changes in Medicaid spending or health insurance tax credits, are modeled as changes in hospital, ambulatory, pharmaceutical, and long-term care spending, while changes in general taxes are related to changes in general consumer or business consumption.

The AHCA's tax cuts predominantly help those with high incomes. Urban Institute analyses found that 90 percent of the tax reductions help those in the top 20 percent of income. Economic research indicates that tax cuts, which primarily help high-income people, have less of a stimulative effect than spending or transfers for low- or moderate-income people.[5,6,7] Essentially, if a low- or moderate-income person gains $1,000 in benefits, the income gained will rapidly translate into about $1,000 in additional consumption of goods and services, providing rapid stimulus to economies and employment. But if a high-income person gains an additional $1,000 through tax cuts, much of it will be saved and less spent, resulting in less of a stimulative effect in the near term.

However, the tax module in PI+ does not account for the distribution of income by those receiving the tax gains. After consultation with REMI economists, we adjusted estimates of the effects of tax repeal policies to account for lower levels of the consumption by those with high incomes. Our estimates of the marginal propensity to consume among those in the top quintile of income were based on 2015 data from the Bureau of Labor Statistics and the Consumer Expenditure Survey,[8] which indicated that expected consumption should be reduced by about one-third. These adjustments were applied to three tax repeal categories for individuals that are skewed to those with high incomes, noted below. To be conservative, we apply these adjustments only to those three categories and not to the other tax categories. It is likely that most of the other individual and business tax changes also preferentially help those with high incomes, and thus also are somewhat less stimulative. Thus, we probably still overestimate the extent to which overall AHCA tax cuts enhance employment or economic growth.

In our previous publication, we estimated the effects of repeal on state and local tax revenues, but do not do so in this report. Many of the AHCA's economic effects are due to federal tax policy changes. When federal tax policies change, states often "piggyback" on the federal changes, changing state taxes, too.[9] While federal tax cuts might lead to increases in gross state products because of increased economic activity, piggybacking would reduce state tax revenue because state taxes are also cut. Since we do not know the extent to which states would adopt the AHCA's federal tax changes, we cannot estimate effects on state and local tax revenues. If states do not piggyback on the federal changes, state and local revenues may rise, but if they piggyback, they likely will fall.

PI+ Model and System of Equations



Source: Regional Economic Models, Inc. (REMI).

Our findings are generally compatible with other recent studies that analyzed the potential economic and employment effects of repealing the ACA, including studies by the UC Berkeley Center for Labor Research and Education[10] and the Economic Policy Institute.[11] The principal policy difference is that this report provides a detailed analysis of the consequences of the AHCA, as passed by the U.S. House of Representatives. Some technical differences also exist. The Berkeley report used IMPLAN, a well-known regional economic model, while the Economic Policy Institute used a set of economic multipliers based on its analysis of the literature. Our study used REMI's PI+, which is a more sophisticated model that has dynamic and interstate capabilities.

We used the following methods to allocate changes for each state. To conduct the analysis, we estimate each component separately, but the total model includes all components, estimated jointly. All estimates in this report were developed so that the sum of state estimates is about the same as CBO's national level estimates for each provision.[12] Four important coverage-related changes are:

1. Medicaid changes. Using recent estimates of additional federal funding for Medicaid expansions[13] and state estimates of 2017 expenditures (from CMS–37 reports filed by states), we developed baseline estimates of federal funding for Medicaid expansions and overall Medicaid programs through 2026. We partitioned state effects in three phases. The

first phase assumed that the seven states (Arkansas, Illinois, Indiana, Michigan, New Hampshire, New Mexico, and Washington) that have state legislation will automatically terminate expansions if federal matching rates change. Next, there are additional, but more gradual reductions in expansion funding in the remaining expansion states. It seems plausible that some states will completely terminate their expansions, while others will find ways to curtail costs without complete termination, but we are unable to predict which or when, so we spread these reductions proportionately across all expansion states. Finally, we then gradually reduce federal funding proportionately all across all states, including nonexpansion states, in response to the per capita allocation method and other AHCA changes in Medicaid policies. Thus, the greatest reductions occur among the seven states that automatically terminate their expansions, followed by the other expansion states, but all states have some reductions that gradually deepen over time.

2. Elimination of current premium tax credits. As discussed in our previous report, we developed baselines of tax credit expenditures for each state, based on actual costs from March 2016. These estimates were used to proportionately allocate reductions in current tax credit funding through 2026.

3. Use of new tax credits. The new tax credits are to be used by people with nongroup coverage, with the value of credits based on age, with the value phasing out for higher-income people. There are no other adjustments for income or location. We used data from the 2015 American Community Survey (ACS) public use file to estimate the number of people by age band (18 to 30, 31 to 50, and 51 to 64) with nongroup health insurance coverage. We also used data from an analysis by the Kaiser Family Foundation of the effect of AHCA vs. ACA premium tax credits on health insurance premiums.[14] These data were used to estimate net health insurance costs by age in 2020 by state, based on projected health insurance premiums minus the AHCA tax credits. Our model assumed that the probability of purchasing nongroup insurance falls as the net cost of health insurance rises, adjusting for the fact that incomes and health needs tend to rise with age. This permits the distribution of utilization to vary with the age structure of each state and its health care costs. These estimates were used to allocate the value of new federal tax credits used in each state.

4. Patient and State Stability Fund. This component of the legislation includes the invisible risk-sharing program, funding for individuals affected adversely by state waivers of insurance regulations, and funding for maternity care, mental health care, and substance abuse treatment. We allocated funds to states based on estimates for fiscal year 2018 by the Oliver Wyman consulting firm, aligning national totals to the CBO annual estimates.[15] States have some flexibility in applying for these funds and gradually rising matching rates are required of states, so actual use of funds might be lower than amounts projected.

Changes related to health spending were translated into inputs for consumer demand for hospital care, ambulatory care, long-term care, pharmaceuticals, or insurance administration, using data from the 2014 Medical Expenditure Panel Survey. Changes in Medicaid and Medicare Disproportionate Share Hospital (DSH) payments were allocated to hospital care.

A variety of other state allocation methods were used for all remaining provisions:

5. Penalty payments for individuals and employers were allocated in proportion to the number of uninsured in each state, using the 2015 ACS.

6. Safety net funding for nonexpansion states. This was based on the 19 nonexpansion states (as of May 2017) and the number of people below 135 percent of the federal poverty level, according to the 2015 ACS.

7. Repeal of Medicaid DSH payment reductions. Based on projected Medicaid DSH reductions for 2018.[16]

8. Medicare DSH reductions. These were modeled for changes in the hospital sector, allocated based on

Urban Institute estimates of the number of uninsured people in each state, after the partial ACA repeal.[17]

9. Elimination of the Prevention and Public Health Fund. This was based on the fiscal year 2016 state allocations.[18]

The effect of tax repeal changes were based on the PI+ tax module, treating the changes as consumer/personal or business tax changes for the relevant type of tax change:

10. Repeal of tax on high-cost health insurance premiums (i.e., the Cadillac tax). Modeled as changes in sales taxes on net health insurance costs for businesses.

11. Repeal of net investment tax. Modeled as a personal tax, allocated to states based on the top quintile of income in the 2015 ACS. Consumption adjusted due to high income.

12. Changes related to health savings accounts. Modeled as changes in personal taxes by consumption (Section 208) or population (Sections 216 and 217).

13. Changes in health savings account and flexible spending account limits. Modeled as changes in personal taxes among the employed.

14. Adjustment of the medical deduction threshold. Modeled as a personal tax, allocated to states based on the top quintile of income in the 2015 ACS. Consumption adjusted due to high income.

15. Repeal of medical device taxes. Based on consumer taxes on therapeutic appliances and devices.

16. Repeal of elimination of deduction for expenses related to Part D subsidy. Modeled based on business tax based on the production cost of insurance carriers.

17. Repeal of the Medicare tax increase for high-income people. Modeled as a personal tax increase, allocated to states based on the top quintile of income in the 2015 ACS. Later changes in the AHCA shifted the date of this change to 2023. Consumption adjusted due to high income.

18. Repeal of tax on prescription medications. Modeled as business tax on pharmaceutical and other medical products (a category of the chemical manufacturing industry), allocated by retail prescription drug fills at pharmacies in 2016.[19]

19. Repeal of health insurance tax. Modeled as a business tax on insurance carriers, allocated by direct net insurance premiums written in each state, based on National Association of Insurance Commissioners data for 2014.[20]

20. Repeal of tanning tax. Modeled as sales tax on personal services.

21. Remuneration from certain insurers. Modeled as business tax based on production costs of insurance carriers.

22. Effect of other revenues and outlays. Modeled as personal taxes and allocated by state population.

NOTES TO STUDY METHODS

[1] L. Ku, E. Steinmetz, E. Brantley et al., *Repealing Federal Health Reform: The Economic and Employment Consequences for States* (The Commonwealth Fund, Jan. 2017).

[2] L. Ku, E. Steinmetz, E. Brantley et al., *The Economic and Employment Consequences of Repealing Federal Health Reform: A 50 State Analysis* (Milken Institute School of Public Health, George Washington University, Jan. 2017).

[3] Examples of the use of REMI models include: J. Z. Ayanian, G. M. Ehrlich, D. R. Grimes et al., "Economic Effects of Medicaid Expansion in Michigan," *New England Journal of Medicine,* Feb. 2, 2017 376(5):407–10; L. Ku, B. Bruen, E. Steinmetz et al., *The Economic and Employment Costs of Not Expanding Medicaid in North Carolina: A County-Level Analysis* (Cone Health Foundation and Kate B. Reynolds Charitable Trust, Dec. 2014); R. T. Carey and G. M. Mikota, *The Projected Economic & Fiscal Impact of Exempting Military Pension Income from South Carolina Income Tax* (Strom Thurmond Institute, Clemson University, Feb. 18, 2015); and D. Wei and A. Rose, "Macroeconomic Impacts of the California Global Warming Solutions Act on the Southern California Economy," *Economics of Energy and Environmental Policy,* Sept. 2014 3(2):101–18.

[4] Congressional Budget Office, *Cost Estimate: H.R. 1628, American Health Care Act of 2017* (CBO, May 24, 2017).

[5] C. J. Whalen and F. Reichling, *The Fiscal Multiplier and Economic Policy Analysis in the United States,* Working Paper (Congressional Budget Office, Feb. 2015).

[6] G. Coenen, C. J. Erceg, C. Freedman et al., "Effects of Fiscal Stimulus in Structural Models," *American Economic Journal: Macroeconomics,* Jan. 2012 4(1): 22–68.

[7] M. Zandi, "At Last, the U.S. Begins a Serious Fiscal Debate," *Moody's Analytics,* April 14, 2011.

[8] Bureau of Labor Statistics, "Deciles of Income Before Taxes: Annual Expenditure Means, Shares, Standard Errors, and Coefficients of Variation, Table 1110, Consumer Expenditure Survey" (BLS, 2015).

[9] N. Francis, *What Federal Business Tax Changes Mean for the States* (Tax Policy Center, Urban Institute and Brookings Institution, April 20, 2017).

[10] L. Lucia and K. Jacobs, *California's Projected Economic Losses Under ACA Repeal* (University of California, Berkeley, Center for Labor Research and Education, Dec. 2016).

[11] J. Bivens, *Repealing the Affordable Care Act Would Cost Jobs in Every State* (Economic Policy Institute, Jan. 31, 2017).

[12] Congressional Budget Office, *Cost Estimate: H.R. 1628, American Health Care Act of 2017* (CBO, May 24, 2017).

[13] L. Ku, E. Steinmetz, E. Brantley et al., *The Economic and Employment Consequences of Repealing Federal Health Reform: A 50 State Analysis* (Milken Institute School of Public Health, George Washington University, Jan. 2017).

[14] The Kaiser Family Foundation kindly provided estimates they used in the report: C. Cox, G. Claxton, and L. Levitt, *How Affordable Care Act Repeal and Replace Plans Might Shift Health Insurance Tax Credits* (Henry J. Kaiser Family Foundation, March 2017).

[15] K. Giesa and T. Van Tol, *Estimating State Allocations Under the AHCA's Patient and State Stability Fund* (Oliver Wyman Health, May 4, 2017).

[16] Dobson, DaVanzo & Associates and KNG Health analysis cited by: Medicaid and CHIP Payment and Access Commission, *Report to Congress on Medicaid Disproportionate Share Hospital Payments* (MACPAC, Feb. 2016).

[17] L. J. Blumberg, M. Buettgens, and J. Holahan, *Implications of Partial Repeal of the ACA Through Reconciliation* (Urban Institute, Dec. 2016).

[18] Trust for America's Health, *Special Analysis: Prevention and Public Health Fund: Federal and State Allocations* (TFAH, Jan. 2017).

[19] Kaiser Family Foundation, *Total Retail Sales for Prescription Drugs Filled at Pharmacies* (Henry J. Kaiser Family Foundation, 2016).

[20] National Association of Insurance Commissioners, *2014 Market Share Reports For the Top 125 Accident and Health Insurance Groups and Companies by State and Countrywide* (NAIC, 2015).