

## Supplementary Online Content

Le Blanc JM, Heller DR, Friedrich A, Lannin DR, Park TS. Association of Medicaid expansion under the Affordable Care Act with breast cancer stage at diagnosis. *JAMA Surg*. Published online July 1, 2020. doi:10.1001/jamasurg.2020.1495

**eTable 1.** Change in Stage of Breast Cancer by State and Insurance Type

**eTable 2.** Percent Uninsured and Percent Late Stage Among Breast Cancer Patients by State

**eTable 3.** Breast Cancer Stage at Diagnosis by Race, Age and State

**eTable 4.** 2016 State Demographic Information

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. Change in Stage of Breast Cancer by State and Insurance Type**

		2012-2013	2015-2016	P value
<b>Non-Expansion states<sup>a</sup></b>				
Private/Medicare	Early stage (0-2)	127,714 (89%)	141,670 (86%)	< 0.00001
	Late stage (3,4)	15,860 (11%)	22,415 (14%)	
	Total	143,574	164,085	
<b>Uninsured/Medicaid</b>				
Uninsured/Medicaid	Early stage (0-2)	11,266 (76%)	10,016 (77%)	0.135
	Late stage (3,4)	3,604 (24%)	3,072 (23%)	
	Total	14,870	13,088	
<b>Expansion states<sup>b</sup></b>				
Private/Medicare	Early stage (0-2)	213,208 (89%)	229,250 (89%)	< 0.00001
	Late stage (3,4)	26,614 (11%)	26,936 (11%)	
	Total	239,822	256,186	
<b>Uninsured/Medicaid</b>				
Uninsured/Medicaid	Early stage (0-2)	16,524 (78%)	17,870 (81%)	< 0.00001
	Late stage (3,4)	4,603 (22%)	4,280 (19%)	
	Total	21,127	22,150	

a) Alabama, Florida, Georgia, Kansas, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Wisconsin, Wyoming, Idaho, Nebraska, Utah

b) Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Virginia, Washington, West Virginia

**eTable 2. Percent Uninsured and Percent Late Stage Among Breast Cancer Patients by State**

	Percent uninsured		Percent late stage	
	2012-2013	2015-2016	2012-2013	2015-2016
<b>Non-expansion states</b>				
Alabama	132/448 (29%)	114/453 (25%)	115/448 (26%)	98/453 (22%)
Florida	1194/2709 (44%)	764/1923 (40%)	653/2709 (24%)	413/1923 (21%)
Georgia	442/1980 (22%)	433/1787 (24%)	510/1980 (26%)	463/1787 (26%)
Kansas	56/175 (32%)	34/149 (23%)	41/175 (23%)	35/149 (23%)
Mississippi	137/325 (42%)	100/290 (34%)	90/325 (28%)	86/290 (30%)
Missouri	143/933 (15%)	110/734 (15%)	224/933 (24%)	171/734 (23%)
North Carolina	579/1562 (37%)	478/1473 (32%)	381/1562 (24%)	359/1473 (24%)
Oklahoma	69/300 (23%)	66/238 (28%)	76/300 (25%)	58/238 (24%)
South Carolina	320/786 (41%)	267/660 (40%)	174/786 (22%)	147/660 (22%)
South Dakota	21/49 (43%)	16/44 (36%)	12/49 (24%)	11/44 (25%)
Tennessee	201/938 (21%)	168/884 (19%)	213/938 (23%)	198/884 (22%)
Texas	1892/3466 (55%)	1893/3316 (57%)	862/3466 (25%)	808/3316 (24%)
Wisconsin	92/811 (11%)	63/752 (8%)	164/811 (20%)	133/752 (18%)
Nebraska	36/134 (27%)	50/135 (37%)	37/134 (28%)	23/135 (17%)
Utah	117/254 (46%)	107/250 (43%)	52/254 (20%)	69/250 (28%)
<b>Total non-expansion states</b>	<b>5,431/14870 (37%)</b>	<b>4,663/13088 (36%)</b>	<b>3604/14870 (24%)</b>	<b>3072/13088 (23%)</b>
<b>Expansion states</b>				
Arizona	56/139 (40%)	61/231 (26%)	24/139 (17%)	46/231 (20%)
California	453/4411 (10%)	281/4417 (6%)	1012/4411 (23%)	938/4417 (21%)
Colorado	279/832 (34%)	110/920 (12%)	171/832 (21%)	156/920 (17%)
Connecticut	74/745 (10%)	98/854 (11%)	108/745 (14%)	120/854 (14%)
Hawaii	10/143 (7%)	13/182 (7%)	31/143 (22%)	37/182 (20%)
Illinois	433/2030 (21%)	416/1945 (21%)	441/2030 (22%)	400/1945 (21%)
Indiana	242/790 (31%)	145/636 (23%)	176/790 (22%)	113/636 (18%)
Iowa	67/219 (31%)	19/193 (10%)	35/219 (16%)	31/193 (16%)
Kentucky	148/661 (22%)	49/887 (6%)	165/661 (25%)	175/887 (20%)
Louisiana	160/554 (29%)	156/606 (26%)	138/554 (25%)	116/606 (19%)
Maine	57/219 (26%)	33/155 (21%)	41/219 (19%)	29/155 (19%)
Maryland	131/575 (23%)	109/464 (23%)	145/575 (25%)	121/464 (26%)
Michigan	212/1070 (20%)	91/1309 (7%)	236/1070 (22%)	238/1309 (18%)
Minnesota	45/485 (9%)	40/527 (8%)	96/485 (20%)	114/527 (22%)
Montana	23/99 (23%)	17/84 (20%)	26/99 (26%)	19/84 (23%)
Nevada	42/144 (29%)	15/147 (10%)	50/144 (35%)	34/147 (23%)
New Hampshire	40/128 (31%)	17/106 (16%)	29/128 (23%)	21/106 (20%)
New Jersey	646/1115 (58%)	337/1214 (28%)	265/1115 (24%)	250/1214 (21%)
North Dakota	17/44 (39%)	4/60 (7%)	16/44 (36%)	13/60 (22%)
Ohio	718/2117 (24%)	275/2252 (12%)	472/2117 (22%)	408/2252 (18%)
Oregon	102/545 (19%)	50/620 (8%)	92/545 (17%)	97/620 (16%)
Pennsylvania	137/1320 (10%)	95/1421 (7%)	255/1320 (19%)	279/1421 (20%)
Rhode Island	42/289 (15%)	26/338 (8%)	33/289 (11%)	48/338 (14%)
Virginia	460/1128 (41%)	462/1078 (43%)	259/1128 (23%)	234/1078 (22%)
Washington	124/1011 (12%)	60/1202 (5%)	221/1011 (22%)	196/1202 (16%)
West Virginia	53/314 (17%)	20/302 (7%)	66/314 (21%)	47/302 (16%)
<b>Total expansion states</b>	<b>4771/21127 (23%)</b>	<b>2999/22150 (14%)</b>	<b>4603/21127 (22%)</b>	<b>4280/2215 (19%)</b>

**eTable 3. Breast Cancer Stage at Diagnosis by Race, Age and State**

Stage	Non – Expansion States <sup>a</sup>		Expansion States <sup>b</sup>	
	2012-2013	2015-2016	2012-2013	2015-2016
Age < 50 years				
0	882	782	1,332	1,328
1	1,461	1,313	2,069	2,249
2	1,963	1,632	2,536	2,576
3	986	820	1,197	1,021
4	506	525	567	583
Age ≥ 50 years				
0	1,395	1,373	2,323	2,498
1	2,905	2,655	4,588	5,346
2	2,660	2,261	3,735	3,843
3	1,203	921	1,648	1,477
4	909	806	1,239	1,229
White				
0	1,047	894	1,767	1,990
1	2,319	2,007	3,997	4,462
2	2,264	1,829	3,420	3,378
3	1,024	742	1,475	1,235
4	659	615	1,071	1,033
Black				
0	687	641	796	790
1	1,154	1,074	1,068	1,311
2	1,392	1,131	1,255	1,238
3	703	591	608	512
4	517	487	409	408
Hispanic				
0	453	521	730	687
1	747	749	1,032	1,313
2	879	842	1,142	1,263
3	417	354	545	541
4	206	208	199	241
Asian/Pacific Islander				
0	72	76	305	349
1	116	134	497	575
2	136	118	485	514
3	52	45	192	191
4	26	30	104	119
All races				
Early (0,1,2)	11,266 (76%)	10,016 (77%)	16,524 (78%)	17,870 (81%)
Late (3,4)	3,604 (24%)	3,072 (23%)	4,603 (22%)	4,280 (19%)
Total	14,870	13,088	21,127	22,150

**eTable 4. 2016 State Demographic Information**

Non-expansion states	Federal Poverty Limit			Unemployment Rate
	Under 100%	100-199%	Percent Under 200%	
Alabama	17%	20%	37%	6.0%
Florida	15%	21%	36%	4.9%
Georgia	16%	19%	35%	5.4%
Kansas	12%	18%	30%	4.3%
Mississippi	21%	21%	42%	5.7%
Missouri	14%	19%	33%	4.7%
North Carolina	16%	20%	36%	5.1%
Oklahoma	16%	21%	37%	5.0%
South Carolina	15%	21%	36%	4.5%
South Dakota	14%	17%	31%	2.9%
Tennessee	16%	20%	36%	4.9%
Texas	16%	20%	36%	4.7%
Wisconsin	12%	15%	27%	4.2%
Nebraska	12%	17%	29%	3.3%
Utah	10%	17%	27%	3.3%
<b>Mean</b>	14.8%	19%	34%	5%
<b>Median</b>	15%	20%	36%	5%
<b>Expansion states</b>				
Arizona	17%	20%	37%	5.1%
California	14%	18%	32%	5.3%
Colorado	11%	16%	27%	3.2%
Connecticut	9%	12%	21%	4.8%
Hawaii	9%	13%	22%	3.0%
Illinois	13%	17%	30%	5.8%
Indiana	14%	18%	32%	4.3%
Iowa	11%	16%	27%	3.6%
Kentucky	19%	19%	38%	5.0%
Louisiana	20%	19%	39%	6.1%
Maine	13%	17%	30%	4.0%
Maryland	9%	12%	21%	4.2%
Michigan	15%	17%	32%	5.0%
Minnesota	10%	14%	24%	4.0%
Montana	13%	21%	34%	4.1%
Nevada	14%	21%	35%	5.4%
New Hampshire	7%	12%	19%	2.8%
New Jersey	10%	13%	23%	4.9%
North Dakota	12%	14%	26%	3.1%
Ohio	14%	17%	31%	5.0%
Oregon	13%	19%	32%	4.9%
Pennsylvania	13%	16%	29%	5.5%
Rhode Island	13%	15%	28%	5.3%
Virginia	11%	14%	25%	4.1%
Washington	11%	16%	27%	5.3%
West Virginia	18%	21%	39%	5.9%
<b>Mean</b>	12.8%	16.4%	29%	4.6%
<b>Median</b>	13%	16.5%	30%	4.9%