

2019 Lung Cancer Screening Registry Report from the American College of Radiology

We are pleased to release the 2019 annual State Aggregate report for Lung Cancer Screening Registry. The PDF report contains the following:

- 1. Measures definition**
- 2. Pre-exam measures aggregated by states**
- 3. During-exam measures aggregated by states**
- 4. Post-exam measures aggregated by states**

Currently the Post-exam (outcome) measures provided within this report are limited to the Abnormal Interpretation Rate. Other measures such as Cancer Detection Rate or Positive Predictive Value are not available at the state aggregate level at this time. Some sites may have limited ability to fully capture outcome (tissue diagnoses) data and state performance may be misconstrued.

Aggregate measure data only reported for states where there are 5 or more sites. Less than 5 are indicated as NR (Not reported).

Measure Definitions

Appropriateness of screening by USPSTF criteria

Percent of screening population who are adults aged 55 to 80 years, have a 30 pack-year smoking history, and currently smoke or have quit within the past 15 years.

Smoking cessation offered

Percent of patients who are offered smoking cessation guidance.

Smoking cessation offered among current smokers

Percent of current smokers who are offered smoking cessation guidance.

Radiation exposure Mean CTDIvol - overall, and by BMI category

Mean Volumetric CT Dose Index (CTDIvol) across all screening exams performed, across all screening exams performed on underweight patients (BMI<18.5), across all screening exams performed on normal weight patients (BMI of 18.5-24.9), across all screening exams performed on overweight patients (BMI of 25-29.9), and across all screening exams performed on obese patients (BMI of 30 or more).

Radiation exposure (DLP) - overall, and by BMI category

Mean Dose Length Product (DLP) across all screening exams performed, across all screening exams performed on underweight patients (BMI<18.5), across all screening exams performed on normal weight patients (BMI of 18.5-24.9), across all screening exams performed on overweight patients (BMI of 25-29.9), and across all screening exams performed on obese patients (BMI of 30 or more).

Abnormal Interpretation Rate, all exams

Percent of screening exams that have a Lung-RADS assessment of 3, 4a, 4b, or 4x (and lead to additional imaging or biopsy).

Abnormal Interpretation Rate, at baseline exam

Percent of baseline screening exams that have a Lung-RADS assessment of 3, 4a, 4b, or 4x (and lead to additional imaging or biopsy).

Abnormal Interpretation Rate, at annual exam

Percent of annual screening exams that have a Lung-RADS assessment of 3, 4a, 4b, or 4x (and lead to additional imaging or biopsy).

Lung Cancer Screening Statistics, Pre-Exam Measures – Screening Exams performed in 2019

				Appropriateness of screening by USPSTF criteria		Smoking cessation offered		Smoking cessation offered among current smokers	
Aggregation Level	Year	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
Alabama	2019	58	11252	93.91%	(10567/11252)	84.69%	(9529/11252)	88.78%	(6439/7253)
Alaska	2019	12	1431	92.59%	(1325/1431)	92.59%	(1325/1431)	96.34%	(763/792)
Arizona	2019	38	5319	91.52%	(4868/5319)	88.19%	(4691/5319)	93.24%	(2705/2901)
Arkansas	2019	31	4177	94.54%	(3949/4177)	76.87%	(3211/4177)	87.11%	(2501/2871)
California	2019	133	13751	76.93%	(10579/13751)	68.42%	(9408/13751)	78.98%	(5840/7394)
Colorado	2019	53	5540	84.93%	(4705/5540)	74.12%	(4106/5540)	77.52%	(2383/3074)
Connecticut	2019	40	9195	84.73%	(7791/9195)	51.54%	(4739/9195)	60.74%	(3142/5173)
Delaware	2019	17	3442	89.02%	(3064/3442)	94.19%	(3242/3442)	95.89%	(1795/1872)
District of Columbia	2019	<5	NR	NR	NR	NR	NR	NR	NR
Florida	2019	219	27615	91.56%	(25283/27615)	75.77%	(20923/27615)	82.32%	(12285/14923)
Georgia	2019	123	18781	89.76%	(16857/18781)	80.92%	(15197/18781)	87.68%	(9384/10702)
Hawaii	2019	9	1439	97.5%	(1403/1439)	56.36%	(811/1439)	73.18%	(655/895)
Idaho	2019	24	4016	95.77%	(3846/4016)	91.88%	(3690/4016)	96.61%	(2055/2127)
Illinois	2019	118	24703	94.22%	(23274/24703)	76.94%	(19007/24703)	82.53%	(11942/14470)
Indiana	2019	111	20296	78.65%	(15962/20296)	62.48%	(12681/20296)	76.24%	(8329/10925)
Iowa	2019	70	10171	94.31%	(9592/10171)	75.48%	(7677/10171)	82.64%	(5054/6116)
Kansas	2019	54	7378	93.07%	(6867/7378)	73.81%	(5446/7378)	78.76%	(3353/4257)
Kentucky	2019	102	22465	93.24%	(20946/22465)	70.37%	(15809/22465)	75.76%	(10807/14265)
Louisiana	2019	35	5012	89.62%	(4492/5012)	76.02%	(3810/5012)	89.22%	(2755/3088)
Maine	2019	20	5495	94.18%	(5175/5495)	73.36%	(4031/5495)	81.02%	(2681/3309)
Maryland	2019	50	13900	95.12%	(13221/13900)	83.5%	(11606/13900)	90.35%	(7485/8284)
Massachusetts	2019	69	39420	94.03%	(37065/39420)	79.9%	(31498/39420)	83.48%	(18300/21922)
Michigan	2019	120	34372	94.27%	(32401/34372)	74.07%	(25458/34372)	79.3%	(16821/21211)
Minnesota	2019	91	14791	88.43%	(13079/14791)	59.35%	(8778/14791)	73.76%	(5847/7927)
Mississippi	2019	35	5662	92.39%	(5231/5662)	64.62%	(3659/5662)	74.75%	(2552/3414)

Lung Cancer Screening Statistics, Pre-Exam Measures – Screening Exams performed in 2019

				Appropriateness of screening by USPSTF criteria		Smoking cessation offered		Smoking cessation offered among current smokers	
Aggregation Level	Year	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
Missouri	2019	70	16643	94.18%	(15674/16643)	70.22%	(11686/16643)	75%	(7501/10002)
Montana	2019	16	2617	96.71%	(2531/2617)	92.05%	(2409/2617)	95.31%	(1421/1491)
Nebraska	2019	39	2979	95.84%	(2855/2979)	76.94%	(2292/2979)	84.86%	(1491/1757)
Nevada	2019	10	1326	79.19%	(1050/1326)	73.38%	(973/1326)	87.33%	(572/655)
New Hampshire	2019	22	5902	95%	(5607/5902)	45.21%	(2668/5902)	49.79%	(1684/3382)
New Jersey	2019	107	9688	85.56%	(8289/9688)	71.9%	(6966/9688)	82.33%	(4197/5098)
New Mexico	2019	10	1055	94.03%	(992/1055)	93.84%	(990/1055)	96.11%	(569/592)
New York	2019	208	34425	89.72%	(30886/34425)	76.14%	(26212/34425)	81%	(16270/20087)
North Carolina	2019	117	31090	88.13%	(27401/31090)	82.8%	(25743/31090)	89.6%	(17017/18993)
North Dakota	2019	9	2472	94.5%	(2336/2472)	80.46%	(1989/2472)	93.92%	(1143/1217)
Ohio	2019	165	31270	93.78%	(29325/31270)	84.68%	(26478/31270)	90.62%	(16873/18620)
Oklahoma	2019	19	2627	85.65%	(2250/2627)	56.22%	(1477/2627)	60.88%	(895/1470)
Oregon	2019	44	10641	93.6%	(9960/10641)	83.21%	(8854/10641)	87.67%	(5142/5865)
Pennsylvania	2019	173	40851	91.94%	(37560/40851)	71.37%	(29155/40851)	78.43%	(18869/24058)
Rhode Island	2019	17	4691	77.77%	(3648/4691)	69.22%	(3247/4691)	79.27%	(2031/2562)
South Carolina	2019	40	10716	92.2%	(9880/10716)	75.45%	(8085/10716)	78.85%	(4607/5843)
South Dakota	2019	25	2706	96.82%	(2620/2706)	69.33%	(1876/2706)	84.47%	(1284/1520)
Tennessee	2019	101	17761	82.88%	(14720/17761)	85.82%	(15243/17761)	88.72%	(9164/10329)
Texas	2019	175	18127	86.54%	(15687/18127)	79.2%	(14357/18127)	83.18%	(8959/10771)
Utah	2019	25	1441	95.42%	(1375/1441)	76.47%	(1102/1441)	85.27%	(654/767)
Vermont	2019	9	2974	97.85%	(2910/2974)	75.25%	(2238/2974)	96.53%	(1588/1645)
Virginia	2019	88	19678	94.22%	(18540/19678)	84.66%	(16660/19678)	88.03%	(10096/11469)
Washington	2019	79	13921	92.92%	(12936/13921)	77.39%	(10773/13921)	87.29%	(6678/7650)
West Virginia	2019	20	2512	92.99%	(2336/2512)	63.81%	(1603/2512)	66.34%	(1084/1634)
Wisconsin	2019	110	21524	91.71%	(19740/21524)	82.54%	(17766/21524)	87.49%	(10346/11826)

Lung Cancer Screening Statistics, Pre-Exam Measures – Screening Exams performed in 2019

				Appropriateness of screening by USPSTF criteria		Smoking cessation offered		Smoking cessation offered among current smokers	
Aggregation Level	Year	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
Wyoming	2019	<5	NR	NR	NR	NR	NR	NR	NR
LCSR	2019	3339	620260	90.86%	(564164/620911)	76.06%	(472294/620911)	82.6%	(296877/359421)

Lung Cancer Screening Statistics, During Exam Measures – Screening Exams performed in 2019

			CTDIvol - Mean (mGy)					DLP - Mean (mGy-cm)				
Aggregation Level	# Facilities	# Screening Exams	Overall	underweight (BMI<18.5)	normal (BMI 18.5-24.9)	overweight (BMI 25.0-29.9)	obese (BMI 30 or greater)	Overall	underweight (BMI<18.5)	normal (BMI 18.5-24.9)	overweight (BMI 25.0-29.9)	obese (BMI 30 or greater)
Alabama	58	11252	2.97	2.29	2.48	3	3.38	96.34	90.11	81.4	93.55	110.97
Alaska	12	1431	2.58	1.85	2.32	2.76	2.6	80.27	67.98	72.06	77.08	87.97
Arizona	38	5319	2.63	2.48	2.2	2.58	3.08	87.23	71.24	78.41	85.42	97.38
Arkansas	31	4177	2.85	2.15	2.27	2.98	3.68	96.71	80.83	82.29	96.59	121.38
California	133	13751	3.8	2.76	2.98	3.68	4.77	113.9	86.27	96.69	111.18	138.03
Colorado	53	5540	3.29	4.93	2.72	2.87	4.25	99.57	68.05	90.45	94.52	118.81
Connecticut	40	9195	3.13	1.67	2.28	2.97	4.01	79.76	60.14	63.93	75.35	96.75
Delaware	17	3442	2.78	3.92	2.22	2.71	3.14	96.94	75.73	83.79	94.24	108.92
District of Columbia	<5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Florida	219	27615	2.86	1.94	2.46	2.69	3.5	96.07	70.92	82.41	92.02	114.24
Georgia	123	18781	3.59	2.45	2.9	3.48	4.38	109.27	83.07	92.71	105.43	124.1
Hawaii	9	1439	3.09	1.81	3.18	3.17	3.07	86.28	70.28	73.13	83.84	110.22
Idaho	24	4016	2.82	2.51	1.68	2.44	3.86	93.21	50.83	59.8	83.65	127.64
Illinois	118	24703	3.03	3.04	2.49	2.86	3.41	98.7	82.14	84.05	94.32	111.45
Indiana	111	20296	2.99	2.76	2.46	2.73	3.52	95.41	72.87	77.48	86.51	111.79
Iowa	70	10171	3.22	2.34	2.61	2.87	3.81	97.45	91.54	71.94	89.93	116.58
Kansas	54	7378	3.08	5.13	2.75	2.69	3.74	98.08	74.93	81.87	89.59	123.86
Kentucky	102	22465	3.58	2.38	2.76	3.49	4.38	91.18	72.69	77.68	87.12	107.57
Louisiana	35	5012	3.22	2.26	2.86	3.14	3.62	102.75	80.53	82.73	95.94	120.64
Maine	20	5495	2.84	1.98	2.46	2.38	3.76	88.82	74.83	80.51	85.27	100.51
Maryland	50	13900	4.51	3.44	3.55	4.43	5.52	93.82	73.63	77.08	91.49	110.32
Massachusetts	69	39420	3.3	2.39	2.52	3.2	4.01	89.12	80.61	69.67	83.48	107.1
Michigan	120	34372	2.99	2.48	2.5	2.91	3.42	99.9	72.01	79.82	96.31	116.8
Minnesota	91	14791	2.97	2.76	2.38	2.76	3.5	93.84	61.9	72.02	86.81	113.04
Mississippi	35	5662	3.24	2.36	2.36	2.57	3.48	90.35	68.91	74.64	85.38	106.35
Missouri	70	16643	2.82	1.91	2.34	2.74	3.26	93.69	70.35	78.8	89.51	109.09

Lung Cancer Screening Statistics, During Exam Measures – Screening Exams performed in 2019

			CTDIvol - Mean (mGy)					DLP - Mean (mGy-cm)				
Aggregation Level	# Facilities	# Screening Exams	Overall	underweight (BMI<18.5)	normal (BMI 18.5-24.9)	overweight (BMI 25.0-29.9)	obese (BMI 30 or greater)	Overall	underweight (BMI<18.5)	normal (BMI 18.5-24.9)	overweight (BMI 25.0-29.9)	obese (BMI 30 or greater)
Montana	16	2617	2	1.35	1.78	1.82	2.18	67.73	53.36	55.38	61.01	81.32
Nebraska	39	2979	3.02	1.74	2.45	2.87	3.3	103.34	63.65	75.73	91.95	116.7
Nevada	10	1326	3.01	2.03	2.36	3.34	3.27	105.91	80.93	92.2	103.4	121.69
New Hampshire	22	5902	2.91	2.68	2.23	2.64	3.53	90.09	66.31	69.28	86.53	109.64
New Jersey	107	9688	3.21	2.41	2.66	2.88	3.88	92.78	74.72	77.35	90.99	102.46
New Mexico	10	1055	2.57	1.82	2.06	2.86	3.07	83.29	73.22	72.42	78.24	105.61
New York	208	34425	2.92	2.59	2.25	2.69	3.66	93.31	67.42	72.91	88.65	114.51
North Carolina	117	31090	3.2	2.49	2.7	2.96	3.82	101.29	84.58	83.56	95.01	121.67
North Dakota	9	2472	2.95	1.36	1.99	2.7	3.62	88.85	50.56	60.88	79.58	109.2
Ohio	165	31270	3.72	2.5	3.29	3.5	4.29	90.57	77.41	80.59	87.32	100.54
Oklahoma	19	2627	3.92	2.18	3.29	3.46	5.12	112.51	74.2	117.11	97.91	122.3
Oregon	44	10641	2.76	1.68	2.03	2.5	3.65	96.8	66.31	75.27	89.31	122.35
Pennsylvania	173	40851	3.18	3.27	2.66	2.94	3.79	93.76	73.61	77.3	91.84	107.71
Rhode Island	17	4691	2.7	1.77	2.08	2.51	2.86	79.45	63.03	71.51	78.09	87.63
South Carolina	40	10716	3.01	3	2.38	2.86	3.63	91.76	73.58	76.12	85.03	111.26
South Dakota	25	2706	3.76	8.11	2.29	2.75	5.2	108.65	58.18	75.45	88.19	145.19
Tennessee	101	17761	2.99	2.53	2.52	3	3.29	94.79	75.33	83.47	89.19	107.59
Texas	175	18127	3	2.2	2.43	2.93	3.49	102.94	75.75	87.1	96.33	124.27
Utah	25	1441	3.6	2.31	4.56	3.27	3.42	113.68	84.77	97.26	116.91	125.69
Vermont	9	2974	3.29	1.92	2.89	3.02	3.9	109.97	75.41	88.41	101.85	134.54
Virginia	88	19678	2.91	2.72	2.41	2.96	3.5	83.64	69.04	73	81.8	99.06
Washington	79	13921	2.81	1.71	2.53	2.64	3.25	77.51	55.8	65.7	71.74	91.65
West Virginia	20	2512	25.68	8.67	15.09	23.02	39.07	113.74	64.68	86.38	103.32	141.19
Wisconsin	110	21524	3.28	1.99	2.31	3.02	4.06	103.23	61.99	73.94	90.7	131.39
Wyoming	<5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
LCSR	3339	620260	3.26	2.55	2.62	3.07	3.93	95.16	74.13	78.63	90.15	112.49

Lung Cancer Screening Statistics, Post-Exam Measures – Screening Exams performed in 2019

			Abnormal Interpretation Rate, baseline, annual, not indicated (%)		Abnormal Interpretation Rate, at baseline exam (%)		Abnormal Interpretation Rate, at annual exam (%)	
Aggregation Level	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
Alabama	58	11252	17.45%	(1963/11252)	20.37%	(1279/6278)	13.65%	(658/4819)
Alaska	12	1431	14.33%	(205/1431)	16%	(180/1125)	8.2%	(25/305)
Arizona	38	5319	17.6%	(936/5319)	18.56%	(735/3960)	14.69%	(195/1327)
Arkansas	31	4177	16.26%	(679/4177)	18.26%	(526/2881)	11.45%	(147/1284)
California	133	13751	15.05%	(2069/13751)	17.27%	(1402/8116)	11.52%	(616/5347)
Colorado	53	5540	16.05%	(889/5540)	18%	(667/3705)	11.5%	(204/1774)
Connecticut	40	9195	15.63%	(1437/9195)	18.44%	(877/4756)	12.8%	(535/4181)
Delaware	17	3442	13.51%	(465/3442)	13.61%	(222/1631)	13.83%	(225/1627)
District of Columbia	<5	NR	NR	NR	NR	NR	NR	NR
Florida	219	27615	14.79%	(4083/27615)	16.7%	(3025/18118)	10.87%	(1000/9196)
Georgia	123	18781	13.33%	(2504/18781)	15.72%	(1701/10820)	9.97%	(748/7501)
Hawaii	9	1439	13.27%	(191/1439)	14.69%	(150/1021)	9.59%	(40/417)
Idaho	24	4016	13.45%	(540/4016)	13.98%	(352/2518)	12.27%	(182/1483)
Illinois	118	24703	14.59%	(3603/24703)	17.85%	(2361/13225)	10.39%	(1181/11364)
Indiana	111	20296	15.5%	(3146/20296)	17.15%	(2466/14381)	11%	(630/5726)
Iowa	70	10171	13.89%	(1413/10171)	16.54%	(959/5798)	9.86%	(382/3876)
Kansas	54	7378	16.47%	(1215/7378)	19.03%	(871/4576)	12.22%	(318/2603)
Kentucky	102	22465	15.83%	(3556/22465)	18.38%	(2371/12898)	11.26%	(1032/9167)
Louisiana	35	5012	14.37%	(720/5012)	16.28%	(537/3298)	10.37%	(176/1697)
Maine	20	5495	14.21%	(781/5495)	15.24%	(493/3234)	11.36%	(224/1972)
Maryland	50	13900	16.66%	(2316/13900)	19.65%	(1727/8791)	11.49%	(585/5093)
Massachusetts	69	39420	12.37%	(4876/39420)	15.83%	(2187/13813)	10.32%	(2631/25489)
Michigan	120	34372	13.62%	(4680/34372)	15.83%	(3353/21184)	9.95%	(1250/12557)
Minnesota	91	14791	12.15%	(1797/14791)	14.77%	(1211/8201)	8.66%	(555/6406)

Lung Cancer Screening Statistics, Post-Exam Measures – Screening Exams performed in 2019

			Abnormal Interpretation Rate, baseline, annual, not indicated (%)		Abnormal Interpretation Rate, at baseline exam (%)		Abnormal Interpretation Rate, at annual exam (%)	
Aggregation Level	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
Mississippi	35	5662	16%	(906/5662)	19.25%	(558/2898)	12.6%	(346/2747)
Missouri	70	16643	15.63%	(2602/16643)	19.79%	(1731/8747)	10.37%	(767/7399)
Montana	16	2617	17.31%	(453/2617)	22.6%	(327/1447)	10.71%	(125/1167)
Nebraska	39	2979	14.6%	(435/2979)	16.95%	(344/2029)	9.53%	(89/934)
Nevada	10	1326	10.86%	(144/1326)	13.3%	(89/669)	7.83%	(43/549)
New Hampshire	22	5902	12.39%	(731/5902)	16.04%	(387/2413)	8.78%	(286/3256)
New Jersey	107	9688	17.71%	(1716/9688)	20.66%	(1343/6499)	11.28%	(348/3085)
New Mexico	10	1055	17.16%	(181/1055)	17.57%	(42/239)	17.12%	(139/812)
New York	208	34425	14.07%	(4843/34425)	17.1%	(3201/18715)	10.29%	(1599/15537)
North Carolina	117	31090	15.35%	(4772/31090)	17.64%	(3161/17924)	11.64%	(1487/12771)
North Dakota	9	2472	13.35%	(330/2472)	13.7%	(262/1913)	12.14%	(67/552)
Ohio	165	31270	14.66%	(4585/31270)	17.42%	(3031/17395)	10.71%	(1382/12904)
Oklahoma	19	2627	15.76%	(414/2627)	19.02%	(327/1719)	9.4%	(81/862)
Oregon	44	10641	13.55%	(1442/10641)	17.19%	(1040/6051)	8.69%	(394/4534)
Pennsylvania	173	40851	15.09%	(6163/40851)	18.42%	(4441/24116)	9.87%	(1473/14918)
Rhode Island	17	4691	17.69%	(830/4691)	19.04%	(369/1938)	16.76%	(461/2751)
South Carolina	40	10716	14.99%	(1606/10716)	16.19%	(1002/6190)	13.17%	(588/4463)
South Dakota	25	2706	12.53%	(339/2706)	14.28%	(216/1513)	8.89%	(104/1170)
Tennessee	101	17761	15.71%	(2790/17761)	17.67%	(2076/11751)	11.48%	(672/5854)
Texas	175	18127	15.52%	(2813/18127)	17.47%	(2073/11863)	11.13%	(617/5544)
Utah	25	1441	11.66%	(168/1441)	12.09%	(133/1100)	10.32%	(35/339)
Vermont	9	2974	12.47%	(371/2974)	15.69%	(179/1141)	10.51%	(192/1827)
Virginia	88	19678	14.45%	(2843/19678)	17.58%	(1766/10047)	11.05%	(1056/9558)
Washington	79	13921	13.45%	(1873/13921)	15.98%	(1323/8279)	9.17%	(451/4919)

Lung Cancer Screening Statistics, Post-Exam Measures – Screening Exams performed in 2019

			Abnormal Interpretation Rate, baseline, annual, not indicated (%)		Abnormal Interpretation Rate, at baseline exam (%)		Abnormal Interpretation Rate, at annual exam (%)	
Aggregation Level	# Facilities	# Screening Exams	Rate	Num/Den	Rate	Num/Den	Rate	Num/Den
West Virginia	20	2512	20.9%	(525/2512)	22.89%	(453/1979)	11.13%	(57/512)
Wisconsin	110	21524	12.86%	(2769/21524)	15.2%	(2023/13313)	9.04%	(722/7985)
Wyoming	<5	NR	NR	NR	NR	NR	NR	NR
LCSR	3339	620260	14.64%	(90881/620911)	17.26%	(61690/357337)	10.74%	(27150/252686)