

MEDICAID BLOOD LEAD TESTING



Michigan Department of Health & Human Services

April 2017

Blood Lead Testing Methodology

- **Children must have been eligible for one of the following programs in April 2017**
 - Medicaid Managed Care (MC)
 - enrolled in a Medicaid Health Plan (MHP)
 - Medicaid Fee-for-Service (FFS)
 - enrolled for Medicaid Only FFS coverage
 - Medicaid and CSHCS Dual Eligible (Duals)
 - dually eligible for both Medicaid and CSHCS
- **Blood Lead testing results include children tested:**
 - on or before indicated birthday for 2 and 3 year olds
 - at any time between ages 1 to 6
- **Unique Client Identifier (UCI) used to establish link between Medicaid and lead databases.**

Blood Lead Testing Summary

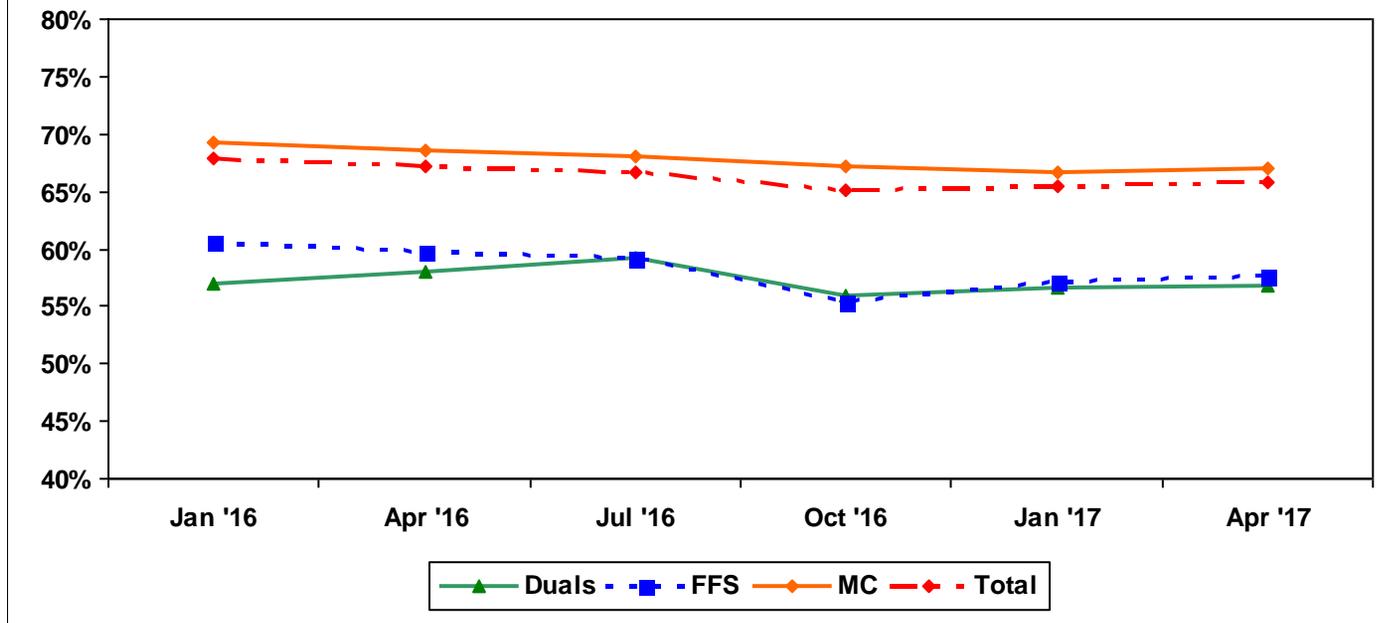
- **2 year old children tested on or before their 2nd birthday**

- 66% Statewide
- 62% City of Detroit
- 67% Statewide for Medicaid MC
 - 77% Statewide for Medicaid MC with 12-Month Continuous Enrollment
- 58% Statewide for Medicaid Only FFS Eligibles
- 57% Statewide for CSHCS Duals

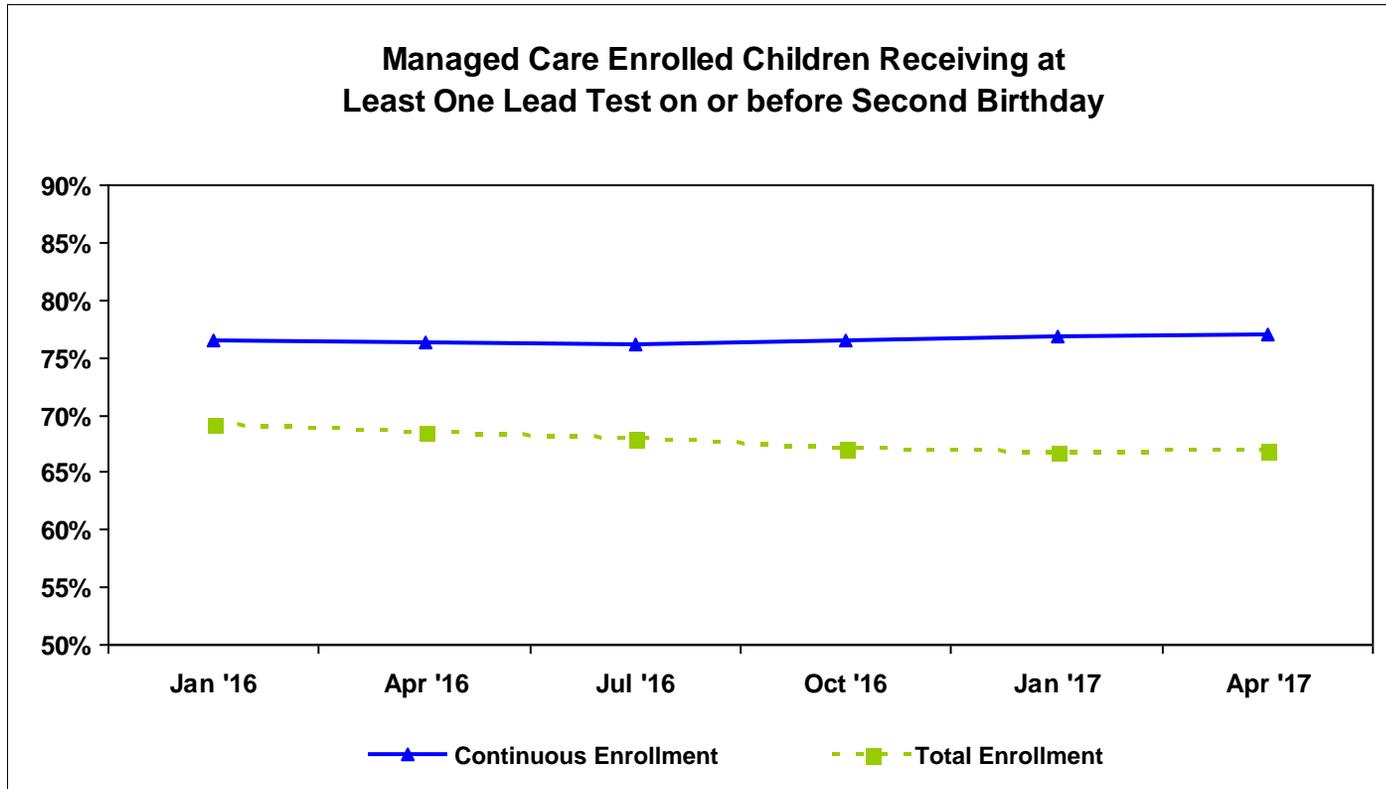
- **3 year old children tested on or before their 3rd birthday**

- 74% Statewide
- 74% City of Detroit
- 75% Statewide for Medicaid MC
 - 81% Statewide for Medicaid MC with 12-Month Continuous Enrollment
- 67% Statewide for Medicaid Only FFS Eligibles
- 63% Statewide for CSHCS Duals

Children Receiving at Least One Blood Lead Test on or before Second Birthday by Program Eligibility



Managed Care Enrolled Children Receiving at Least One Lead Test on or before Second Birthday



Total Enrollment

-Enrolled in measurement month

Continuous Enrollment

-Based on MMIS eligibility system

-Enrolled in same health plan for the measurement month and 12 months preceding 2nd birthday, with a 1-month allowable gap.

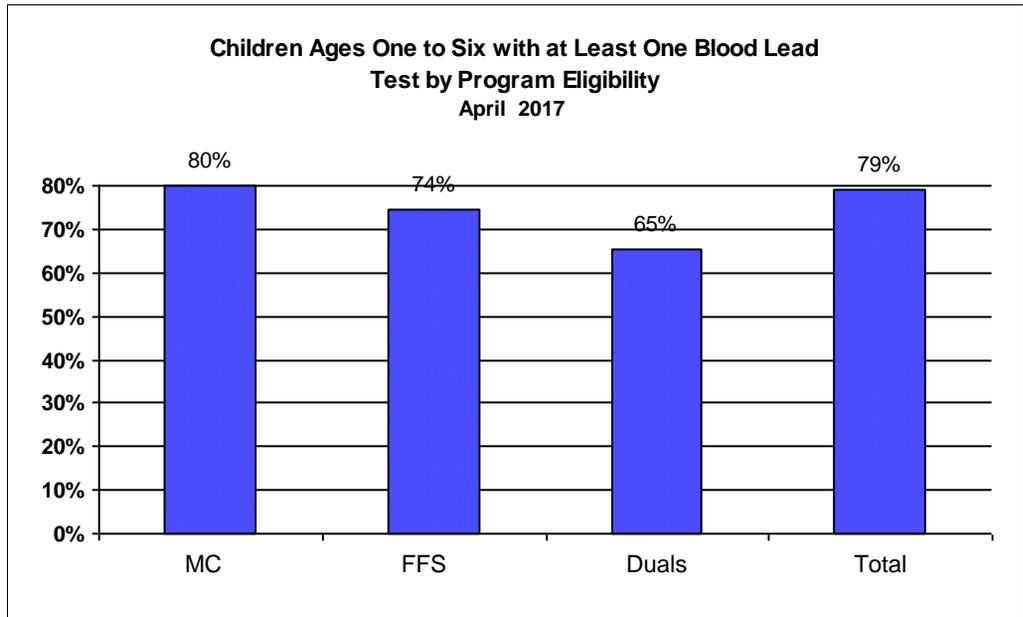
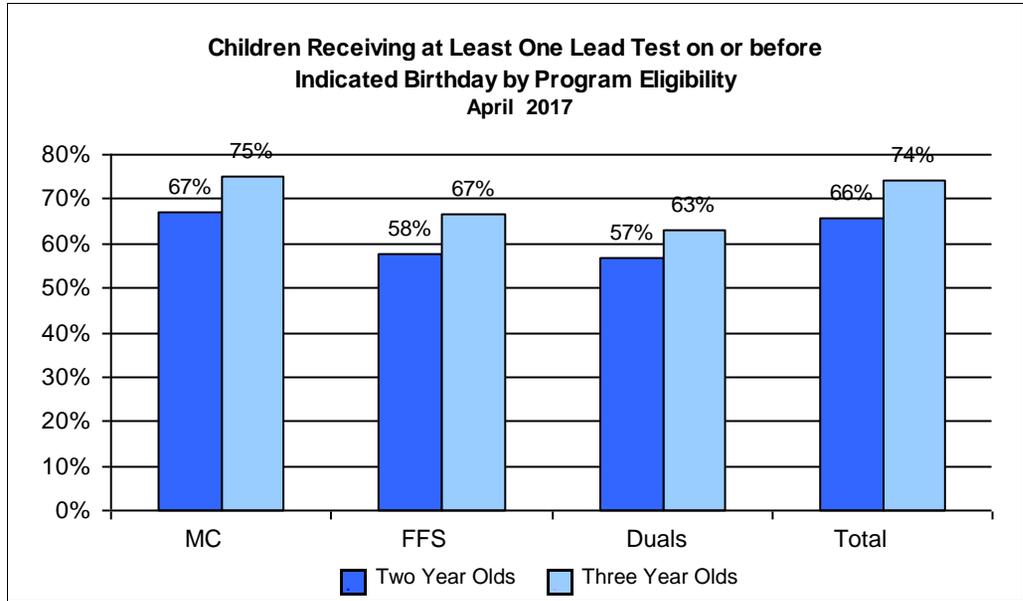


Table 1. Percent of Children with at Least One Blood Lead Test on or before their Second Birthday

Program	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
MC	68.6%	68.5%	68.2%	68.0%	67.4%	67.4%	67.2%	67.0%	66.7%	66.7%	66.6%	66.8%	67.0%
FFS	59.7%	59.0%	59.0%	59.1%	55.7%	55.8%	55.4%	56.1%	56.7%	57.2%	58.3%	57.7%	57.7%
Duals	58.0%	59.4%	59.8%	59.2%	58.0%	56.5%	55.9%	57.8%	58.6%	56.6%	56.9%	59.7%	56.8%
Total	67.2%	67.0%	66.9%	66.7%	65.3%	65.3%	65.2%	65.2%	65.3%	65.4%	65.5%	65.5%	65.8%

Table 2. Percent of Children with at Least One Blood Lead Test on or before their Third Birthday

Program	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
MC	76.5%	76.5%	76.5%	76.3%	76.3%	75.9%	75.8%	75.6%	75.4%	75.3%	75.4%	75.4%	75.2%
FFS	68.4%	67.3%	67.0%	66.9%	63.9%	64.6%	64.9%	63.8%	65.0%	66.2%	66.4%	66.4%	66.8%
Duals	63.0%	62.7%	63.7%	65.7%	65.0%	69.1%	68.6%	65.3%	63.6%	63.1%	63.3%	62.6%	63.0%
Total	75.2%	75.1%	75.0%	74.9%	74.1%	73.9%	73.9%	73.7%	73.8%	74.0%	74.2%	74.1%	74.0%

Table 3. Percent of Children Ages One to Six with at Least One Blood Lead Test

Program	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
MC	80.7%	80.9%	81.1%	81.1%	83.3%	82.8%	82.1%	81.2%	80.6%	80.3%	79.8%	79.9%	80.0%
FFS	68.6%	68.9%	69.2%	69.5%	69.9%	70.4%	70.6%	71.1%	71.8%	72.2%	73.6%	73.8%	74.4%
Duals	66.9%	67.5%	66.8%	67.3%	67.9%	67.4%	67.8%	67.3%	66.9%	64.0%	65.1%	66.0%	65.2%
Total	78.7%	79.0%	79.2%	79.3%	80.8%	80.4%	80.0%	79.5%	79.2%	79.0%	78.9%	79.0%	79.2%

Table 4. Statewide Blood Lead Testing of Two and Three Year Old Children for All Programs

April 2017

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
ALCONA	38	25	66%	50	35	70%
ALGER	31	20	65%	34	31	91%
ALLEGAN	633	401	63%	581	392	67%
ALPENA	142	115	81%	160	135	84%
ANTRIM	126	98	78%	118	93	79%
ARENAC	81	67	83%	83	71	86%
BARAGA	51	39	76%	42	37	88%
BARRY	253	166	66%	233	159	68%
BAY	504	413	82%	524	454	87%
BENZIE	86	75	87%	82	69	84%
BERRIEN	968	592	61%	1,006	728	72%
BRANCH	280	175	63%	297	214	72%
CALHOUN	932	629	67%	951	680	72%
CASS	298	176	59%	287	191	67%
CHARLEVOIX	108	86	80%	109	91	83%
CHEBOYGAN	138	92	67%	139	102	73%
CHIPPEWA	202	117	58%	189	157	83%
CLARE	210	156	74%	189	157	83%
CLINTON	259	168	65%	240	185	77%
CRAWFORD	78	53	68%	70	50	71%
DELTA	215	166	77%	175	133	76%
DICKINSON	108	67	62%	151	116	77%
EATON	446	308	69%	461	325	70%
EMMET	152	120	79%	136	114	84%
GENESEE	3,063	2,320	76%	3,073	2,572	84%
GLADWIN	126	94	75%	129	108	84%
GOGEBIC	75	55	73%	73	52	71%
GRAND TRAVERSE	362	260	72%	423	302	71%
GRATIOT	234	179	76%	227	182	80%
HILLSDALE	306	220	72%	305	237	78%
HOUGHTON	180	131	73%	159	130	82%
HURON	139	98	71%	145	111	77%
INGHAM	1,606	1,107	69%	1,565	1,208	77%
IONIA	334	226	68%	328	256	78%
IOSCO	174	120	69%	142	105	74%
IRON	66	46	70%	53	39	74%
ISABELLA	283	177	63%	273	215	79%
JACKSON	928	740	80%	895	766	86%
KALAMAZOO	1,376	1,050	76%	1,386	1,105	80%
KALKASKA	123	80	65%	108	83	77%
KENT	3,751	2,831	75%	3,555	2,885	81%
KEWEENAW	9	6	67%	6	5	83%

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
LAKE	74	55	74%	75	60	80%
LAPEER	442	288	65%	392	269	69%
LEELANAU	56	37	66%	63	48	76%
LENAWEE	529	302	57%	556	355	64%
LIVINGSTON	462	304	66%	412	305	74%
LUCE	32	28	88%	31	24	77%
MACKINAC	40	31	78%	41	38	93%
MACOMB	4,163	2,631	63%	4,166	2,921	70%
MANISTEE	103	83	81%	105	92	88%
MARQUETTE	280	185	66%	240	172	72%
MASON	171	149	87%	138	122	88%
MECOSTA	205	143	70%	209	157	75%
MENOMINEE	101	61	60%	107	81	76%
MIDLAND	357	147	41%	357	183	51%
MISSAUKEE	106	70	66%	93	67	72%
MONROE	607	320	53%	619	420	68%
MONTCALM	398	270	68%	412	329	80%
MONTMORENCY	34	28	82%	52	39	75%
MUSKEGON	1,232	686	56%	1,274	796	62%
NEWAYGO	329	248	75%	306	230	75%
OAKLAND	3,927	2,473	63%	3,882	2,753	71%
OCEANA	194	144	74%	199	153	77%
OGEMAW	124	92	74%	121	81	67%
ONTONAGON	12	11	92%	13	11	85%
OSCEOLA	131	101	77%	143	108	76%
OSCODA	50	32	64%	51	34	67%
OTSEGO	148	100	68%	151	112	74%
OTTAWA	919	538	59%	939	644	69%
PRESQUE ISLE	58	42	72%	61	43	70%
ROSCOMMON	133	101	76%	103	76	74%
SAGINAW	1,296	1,054	81%	1,231	1,055	86%
SAINT CLAIR	878	706	80%	831	701	84%
SAINT JOSEPH	439	293	67%	467	343	73%
SANILAC	212	124	58%	196	152	78%
SCHOOLCRAFT	29	26	90%	35	33	94%
SHIAWASSEE	367	312	85%	363	310	85%
TUSCOLA	323	247	76%	279	231	83%
VAN BUREN	502	256	51%	542	337	62%
WASHTENAW	1,107	670	61%	1,054	703	67%
DETROIT, CITY OF	7,298	4,500	62%	7,324	5,418	74%
DETROIT, CITY OF	7,298	4,500	62%	7,324	5,418	74%
WAYNE, ex Detroit	7,487	4,404	59%	7,416	5,046	68%
WEXFORD	259	187	72%	277	211	76%
MICHIGAN	62,386	41,043	66%	61,802	45,761	74%

Table 5. Statewide Blood Lead Testing of Two and Three Year Old Children Enrolled in Managed Care

April 2017

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
ALCONA	32	21	66%	42	31	74%
ALGER	23	15	65%	28	25	89%
ALLEGAN	519	333	64%	470	328	70%
ALPENA	126	105	83%	141	119	84%
ANTRIM	108	84	78%	95	74	78%
ARENAC	68	58	85%	68	57	84%
BARAGA	32	24	75%	23	21	91%
BARRY	199	137	69%	188	131	70%
BAY	441	366	83%	466	413	89%
BENZIE	75	67	89%	70	62	89%
BERRIEN	852	526	62%	875	639	73%
BRANCH	243	160	66%	254	187	74%
CALHOUN	757	505	67%	766	560	73%
CASS	257	155	60%	238	160	67%
CHARLEVOIX	89	73	82%	93	78	84%
CHEBOYGAN	122	85	70%	115	83	72%
CHIPPEWA	119	73	61%	113	95	84%
CLARE	183	136	74%	162	137	85%
CLINTON	220	144	65%	205	161	79%
CRAWFORD	67	47	70%	63	47	75%
DELTA	184	144	78%	143	110	77%
DICKINSON	88	56	64%	116	90	78%
EATON	368	262	71%	382	280	73%
EMMET	131	108	82%	111	94	85%
GENESEE	2,724	2,099	77%	2,749	2,331	85%
GLADWIN	108	82	76%	114	97	85%
GOGEBIC	68	51	75%	66	47	71%
GRAND TRAVERSE	298	217	73%	355	251	71%
GRATIOT	207	162	78%	197	164	83%
HILLSDALE	270	195	72%	264	205	78%
HOUGHTON	169	123	73%	142	117	82%
HURON	118	84	71%	121	98	81%
INGHAM	1,375	985	72%	1,321	1,035	78%
IONIA	278	192	69%	267	208	78%
IOSCO	142	101	71%	125	94	75%
IRON	61	44	72%	51	39	76%
ISABELLA	239	158	66%	228	182	80%
JACKSON	794	636	80%	763	660	87%
KALAMAZOO	1,192	929	78%	1,186	959	81%
KALKASKA	110	73	66%	92	72	78%
KENT	3,212	2,485	77%	3,002	2,479	83%
KEWEENAW	8	5	63%	6	5	83%

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
LAKE	73	55	75%	61	48	79%
LAPEER	378	250	66%	334	230	69%
LEELANAU	48	33	69%	52	39	75%
LENAWEE	456	267	59%	457	290	63%
LIVINGSTON	388	267	69%	343	260	76%
LUCE	28	25	89%	26	20	77%
MACKINAC	30	25	83%	26	24	92%
MACOMB	3,603	2,316	64%	3,580	2,578	72%
MANISTEE	85	66	78%	86	76	88%
MARQUETTE	246	171	70%	211	155	73%
MASON	139	126	91%	113	100	88%
MECOSTA	174	124	71%	169	132	78%
MENOMINEE	77	48	62%	77	61	79%
MIDLAND	307	130	42%	297	159	54%
MISSAUKEE	85	59	69%	81	58	72%
MONROE	510	267	52%	505	350	69%
MONTCALM	342	240	70%	347	281	81%
MONTMORENCY	29	26	90%	42	34	81%
MUSKEGON	1,047	587	56%	1,088	679	62%
NEWAYGO	280	211	75%	255	195	76%
OAKLAND	3,404	2,196	65%	3,375	2,434	72%
OCEANA	169	128	76%	159	122	77%
OGEAW	106	81	76%	109	75	69%
ONTONAGON	12	11	92%	12	10	83%
OSCEOLA	109	86	79%	110	90	82%
OSCODA	45	30	67%	44	31	70%
OTSEGO	122	86	70%	126	94	75%
OTTAWA	707	427	60%	732	518	71%
PRESQUE ISLE	52	38	73%	53	41	77%
ROSCOMMON	116	91	78%	92	68	74%
SAGINAW	1,146	936	82%	1,085	946	87%
SAINT CLAIR	779	635	82%	712	615	86%
SAINT JOSEPH	375	249	66%	393	296	75%
SANILAC	177	107	60%	164	129	79%
SCHOOLCRAFT	27	25	93%	30	28	93%
SHIAWASSEE	316	277	88%	311	268	86%
TUSCOLA	270	211	78%	233	194	83%
VAN BUREN	417	221	53%	451	284	63%
WASHTENAW	933	587	63%	894	615	69%
DETROIT, CITY OF	6,610	4,126	62%	6,603	4,924	75%
DETROIT, CITY OF	6,610	4,126	62%	6,603	4,924	75%
WAYNE, ex Detroit	6,583	3,948	60%	6,409	4,449	69%
WEXFORD	212	155	73%	230	178	77%
MICHIGAN	54,298	36,375	67%	53,356	40,127	75%

**Table 6. Statewide Blood Lead Testing of Two and Three Year Old Children Eligible for Medicaid Only Fee-for-Service Coverage
April 2017**

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
ALCONA	6	4	67%	7	3	43%
ALGER	8	5	63%	6	6	100%
ALLEGAN	107	65	61%	108	63	58%
ALPENA	16	10	63%	18	15	83%
ANTRIM	18	14	78%	22	18	82%
ARENAC	13	9	69%	14	14	100%
BARAGA	18	14	78%	18	15	83%
BARRY	52	29	56%	43	26	60%
BAY	59	45	76%	56	40	71%
BENZIE	10	7	70%	12	7	58%
BERRIEN	114	65	57%	130	89	68%
BRANCH	37	15	41%	42	26	62%
CALHOUN	167	118	71%	177	114	64%
CASS	41	21	51%	48	30	63%
CHARLEVOIX	17	12	71%	16	13	81%
CHEBOYGAN	15	6	40%	23	18	78%
CHIPPEWA	81	44	54%	75	61	81%
CLARE	27	20	74%	27	20	74%
CLINTON	37	24	65%	34	23	68%
CRAWFORD	10	5	50%	7	3	43%
DELTA	31	22	71%	32	23	72%
DICKINSON	20	11	55%	35	26	74%
EATON	76	46	61%	75	43	57%
EMMET	21	12	57%	24	19	79%
GENESEE	327	212	65%	315	235	75%
GLADWIN	18	12	67%	15	11	73%
GOGEBIC	7	4	57%	7	5	71%
GRAND TRAVERSE	62	41	66%	65	49	75%
GRATIOT	24	15	63%	28	16	57%
HILLSDALE	35	24	69%	37	30	81%
HOUGHTON	11	8	73%	17	13	76%
HURON	21	14	67%	24	13	54%
INGHAM	223	117	52%	233	165	71%
IONIA	55	33	60%	60	47	78%
IOSCO	32	19	59%	17	11	65%
IRON	5	2	40%	2	0	0%
ISABELLA	44	19	43%	45	33	73%
JACKSON	131	101	77%	123	98	80%
KALAMAZOO	176	115	65%	194	143	74%
KALKASKA	13	7	54%	16	11	69%
KENT	519	333	64%	541	398	74%
KEWEENAW	1	1	100%	0	0	NA

County	2 Years of Age			3 Years of Age		
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday
LAKE	1	0	0%	14	12	86%
LAPEER	59	36	61%	56	37	66%
LEELANAU	8	4	50%	11	9	82%
LENAWEE	71	34	48%	97	64	66%
LIVINGSTON	69	33	48%	64	42	66%
LUCE	4	3	75%	5	4	80%
MACKINAC	10	6	60%	14	13	93%
MACOMB	546	309	57%	575	337	59%
MANISTEE	17	16	94%	19	16	84%
MARQUETTE	34	14	41%	28	17	61%
MASON	29	20	69%	25	22	88%
MECOSTA	29	18	62%	38	23	61%
MENOMINEE	24	13	54%	29	20	69%
MIDLAND	49	16	33%	57	22	39%
MISSAUKEE	20	11	55%	11	9	82%
MONROE	96	52	54%	112	70	63%
MONTCALM	53	28	53%	65	48	74%
MONTMORENCY	5	2	40%	9	4	44%
MUSKEGON	177	96	54%	180	113	63%
NEWAYGO	47	37	79%	50	35	70%
OAKLAND	507	269	53%	490	310	63%
OCEANA	25	16	64%	40	31	78%
OGEMAW	18	11	61%	12	6	50%
ONTONAGON	0	0	NA	1	1	100%
OSCEOLA	20	14	70%	32	17	53%
OSCODA	5	2	40%	7	3	43%
OTSEGO	25	13	52%	25	18	72%
OTTAWA	201	106	53%	199	121	61%
PRESQUE ISLE	6	4	67%	8	2	25%
ROSCOMMON	16	9	56%	11	8	73%
SAGINAW	145	116	80%	141	106	75%
SAINT CLAIR	95	68	72%	116	84	72%
SAINT JOSEPH	63	44	70%	72	45	63%
SANILAC	34	16	47%	30	22	73%
SCHOOLCRAFT	2	1	50%	5	5	100%
SHIAWASSEE	50	35	70%	50	40	80%
TUSCOLA	50	35	70%	44	36	82%
VAN BUREN	83	34	41%	88	51	58%
WASHTENAW	166	82	49%	155	86	55%
DETROIT, CITY OF	672	364	54%	705	483	69%
DETROIT, CITY OF	672	364	54%	705	483	69%
WAYNE, ex Detroit	885	445	50%	982	586	60%
WEXFORD	45	30	67%	46	32	70%
MICHIGAN	7,838	4,526	58%	8,211	5,486	67%

Table 7: Blood Lead Testing of Two Year Old Children by Length of Enrollment
April 2017

Health Plan Name	Total Enrollment			Continuous Enrollment			
	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Eligibles	Eligibles with at least 1 test on or before their 2nd birthday	Percent of Eligibles with at least 1 test on or before their 2nd birthday	Percentage Point Difference with Continuous Enrollment
Aetna Better Health of Michigan	1,186	751	63%	448	327	73%	10
Blue Cross Complete	4,232	2,518	59%	1,109	804	72%	13
Harbor Health Plan	339	172	51%	50	37	74%	23
McLaren Health Plan	5,117	3,772	74%	2,431	2,055	85%	11
Meridian Health Plan of Michigan	14,010	9,575	68%	6,507	5,023	77%	9
Midwest Health Plan	78	47	60%	9	8	89%	29
Molina Healthcare of Michigan	9,860	6,712	68%	4,183	3,080	74%	6
Priority Health Govt Pgms	3,588	2,509	70%	1,492	1,231	83%	13
Total Health Care	1,385	817	59%	633	423	67%	8
United Healthcare Community Plan	6,768	4,557	67%	3,358	2,530	75%	8
Upper Peninsula Health Plan	1,176	843	72%	651	549	84%	13
Managed Care Totals/Percent	47,739	32,273	68%	20,871	16,067	77%	9
Current Performance Monitoring Standard	N/A			80%			
FFS (Title XIX only)	7,189	4,170	58%	1,259	821	65%	7
FFS (Title V/XIX)	234	132	56%	115	63	55%	-1
FFS Totals (Title XIX & V/XIX)	7,423	4,302	58%	1,374	884	64%	6

Total Enrollment

- Based on MMIS eligibility system
- Enrolled in plan (health plan or FFS) for the measurement month

Continuous Enrollment

- Based on MMIS eligibility system
- Enrolled in same plan (health plan or FFS) for the measurement month and 12 months preceding 2nd birthday, with 1-month allowable gap

Table 8. Blood Lead Testing of Three Year Old Children by Length of Enrollment
April 2017

Health Plan Name	Total Enrollment			Continuous Enrollment			
	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday	Eligibles	Eligibles with at least 1 test on or before their 3rd birthday	Percent of Eligibles with at least 1 test on or before their 3rd birthday	Percentage Point Difference with Continuous Enrollment
Aetna Better Health of Michigan	1,123	810	72%	609	487	80%	8
Blue Cross Complete	4,054	2,762	68%	1,346	1,027	76%	8
Harbor Health Plan	238	142	60%	81	57	70%	10
McLaren Health Plan	5,028	4,086	81%	2,935	2,528	86%	5
Meridian Health Plan of Michigan	13,801	10,398	75%	7,526	6,121	81%	6
Midwest Health Plan	63	42	67%	12	9	75%	8
Molina Healthcare of Michigan	9,576	7,313	76%	4,849	3,933	81%	5
Priority Health Govt Pgms	3,547	2,633	74%	1,640	1,343	82%	8
Total Health Care	1,306	910	70%	838	623	74%	4
United Healthcare Community Plan	6,989	5,283	76%	4,295	3,442	80%	4
Upper Peninsula Health Plan	1,080	855	79%	660	579	88%	9
Managed Care Totals/Percent	46,805	35,234	75%	24,791	20,149	81%	6
FFS (Title XIX only)	7,522	5,013	67%	1,642	1,209	74%	7
FFS (Title V/XIX)	219	137	63%	99	60	61%	-2
FFS Totals (Title XIX & V/XIX)	7,741	5,150	67%	1,741	1,269	73%	6

Total Enrollment

- Based on MMIS eligibility system
- Enrolled in plan (health plan or FFS) for the measurement month

Continuous Enrollment

- Based on MMIS eligibility system
- Enrolled in same plan (health plan or FFS) for the measurement month and 12 months preceding 3rd birthday, with 1-month allowable gap