

MEDICAID BLOOD LEAD TESTING



Michigan Department of Health & Human Services

March 2017

Blood Lead Testing Methodology

- **Children must have been eligible for one of the following programs in March 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

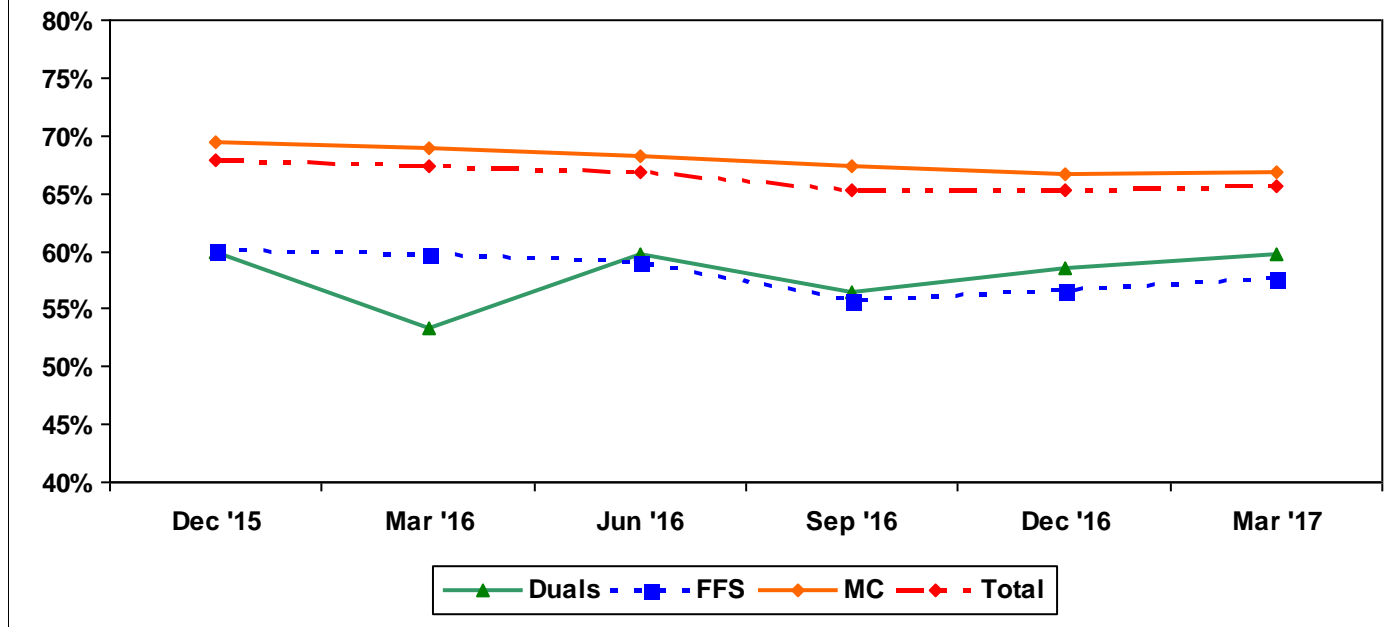
- **2 year old children tested on or before their 2nd birthday**

- 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
- 60% Statewide for CSHCS Duals

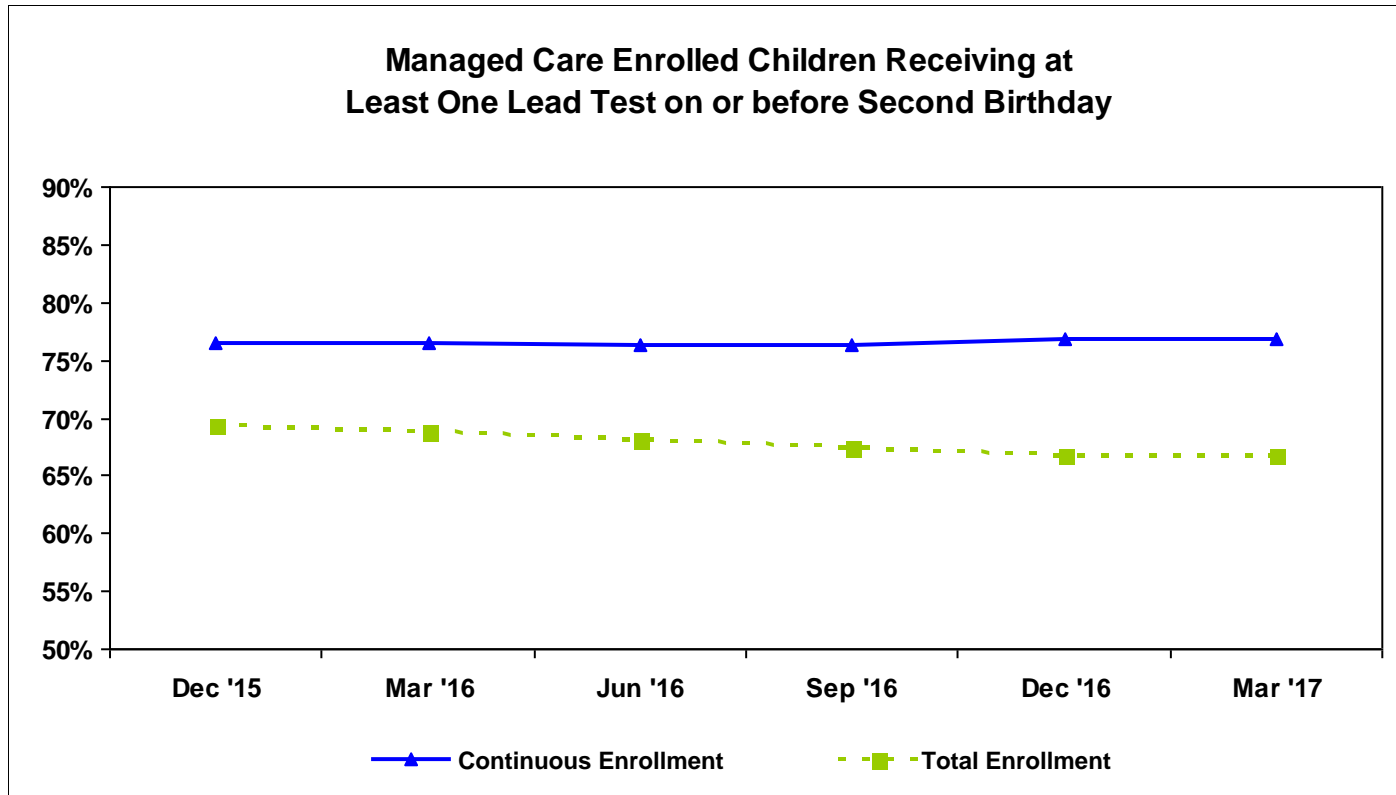
- **3 year old children tested on or before their 3rd birthday**

- 74% Statewide
- 74% City of Detroit
- 75% Statewide for Medicaid MC
 - 82% Statewide for Medicaid MC with 12-Month Continuous Enrollment
- 66% 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.

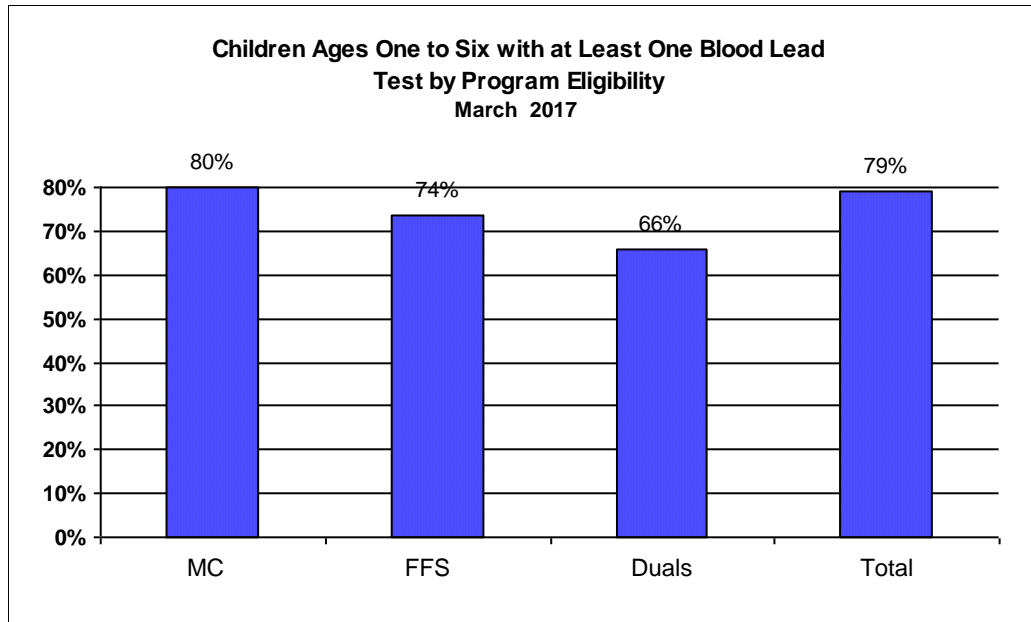
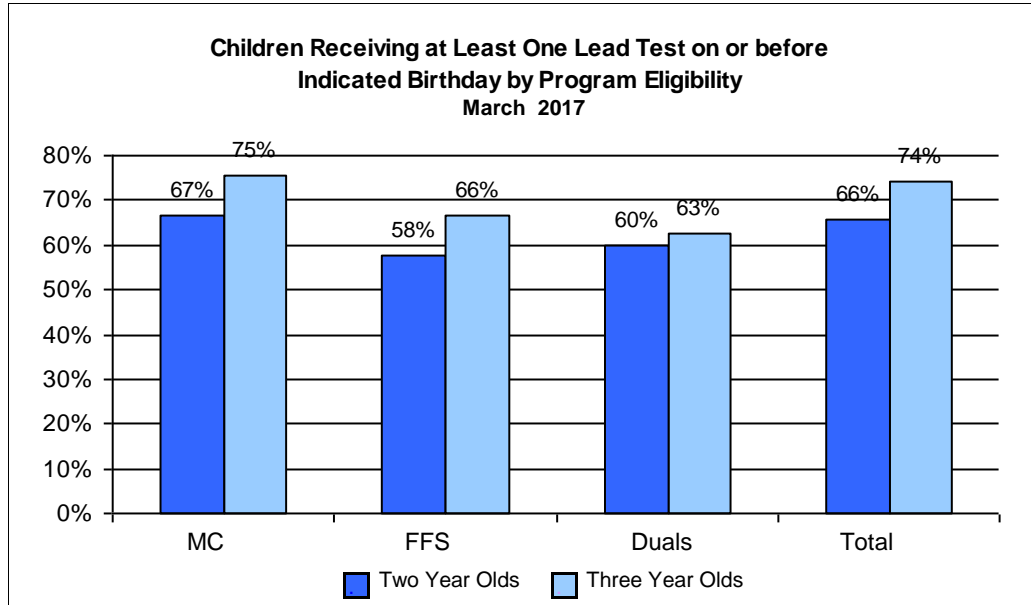


Table 1. Percent of Children with at Least One Blood Lead Test on or before their Second Birthday

Program	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MC	69.0%	68.6%	68.5%	68.2%	68.0%	67.4%	67.4%	67.2%	67.0%	66.7%	66.7%	66.6%	66.8%
FFS	59.8%	59.7%	59.0%	59.0%	59.1%	55.7%	55.8%	55.4%	56.1%	56.7%	57.2%	58.3%	57.7%
Duals	53.4%	58.0%	59.4%	59.8%	59.2%	58.0%	56.5%	55.9%	57.8%	58.6%	56.6%	56.9%	59.7%
Total	67.3%	67.2%	67.0%	66.9%	66.7%	65.3%	65.3%	65.2%	65.2%	65.3%	65.4%	65.5%	65.5%

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

Program	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MC	76.6%	76.5%	76.5%	76.5%	76.3%	76.3%	75.9%	75.8%	75.6%	75.4%	75.3%	75.4%	75.4%
FFS	67.7%	68.4%	67.3%	67.0%	66.9%	63.9%	64.6%	64.9%	63.8%	65.0%	66.2%	66.4%	66.4%
Duals	66.2%	63.0%	62.7%	63.7%	65.7%	65.0%	69.1%	68.6%	65.3%	63.6%	63.1%	63.3%	62.6%
Total	75.0%	75.2%	75.1%	75.0%	74.9%	74.1%	73.9%	73.9%	73.7%	73.8%	74.0%	74.2%	74.1%

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

Program	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MC	80.9%	80.7%	80.9%	81.1%	81.1%	83.3%	82.8%	82.1%	81.2%	80.6%	80.3%	79.8%	79.9%
FFS	68.1%	68.6%	68.9%	69.2%	69.5%	69.9%	70.4%	70.6%	71.1%	71.8%	72.2%	73.6%	73.8%
Duals	66.5%	66.9%	67.5%	66.8%	67.3%	67.9%	67.4%	67.8%	67.3%	66.9%	64.0%	65.1%	66.0%
Total	78.6%	78.7%	79.0%	79.2%	79.3%	80.8%	80.4%	80.0%	79.5%	79.2%	79.0%	78.9%	79.0%

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

March 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	35	25	71%	50	34	68%
ALGER	28	18	64%	34	31	91%
ALLEGAN	638	398	62%	592	399	67%
ALPENA	144	112	78%	163	137	84%
ANTRIM	120	90	75%	107	87	81%
ARENAC	77	64	83%	82	70	85%
BARAGA	51	40	78%	39	35	90%
BARRY	247	159	64%	228	165	72%
BAY	516	421	82%	524	457	87%
BENZIE	83	73	88%	78	64	82%
BERRIEN	984	590	60%	989	709	72%
BRANCH	277	178	64%	290	215	74%
CALHOUN	947	635	67%	943	676	72%
CASS	306	178	58%	284	189	67%
CHARLEVOIX	114	92	81%	111	91	82%
CHEBOYGAN	138	94	68%	139	102	73%
CHIPPEWA	209	120	57%	185	157	85%
CLARE	207	152	73%	196	161	82%
CLINTON	255	165	65%	245	182	74%
CRAWFORD	72	47	65%	79	55	70%
DELTA	219	167	76%	173	133	77%
DICKINSON	114	69	61%	153	118	77%
EATON	443	304	69%	468	336	72%
EMMET	151	118	78%	132	110	83%
GENESEE	3,039	2,293	75%	3,119	2,601	83%
GLADWIN	121	90	74%	135	115	85%
GOGEBIC	76	58	76%	72	50	69%
GRAND TRAVERSE	370	264	71%	408	300	74%
GRATIOT	230	176	77%	239	196	82%
HILLSDALE	315	234	74%	318	241	76%
HOUGHTON	171	126	74%	159	127	80%
HURON	141	98	70%	138	104	75%
INGHAM	1,609	1,126	70%	1,549	1,183	76%
IONIA	335	227	68%	328	256	78%
IOSCO	170	121	71%	143	99	69%
IRON	67	47	70%	55	40	73%
ISABELLA	290	186	64%	272	212	78%
JACKSON	938	739	79%	897	768	86%
KALAMAZOO	1,388	1,048	76%	1,384	1,093	79%
KALKASKA	120	78	65%	111	84	76%
KENT	3,713	2,783	75%	3,576	2,911	81%
KEWEENAW	7	5	71%	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	53	72%	70	57	81%
LAPEER	458	292	64%	408	278	68%
LEELANAU	54	35	65%	66	48	73%
LENAWEE	524	293	56%	543	345	64%
LIVINGSTON	462	309	67%	424	307	72%
LUCE	32	28	88%	33	26	79%
MACKINAC	39	32	82%	46	42	91%
MACOMB	4,170	2,639	63%	4,148	2,923	70%
MANISTEE	112	92	82%	95	83	87%
MARQUETTE	283	187	66%	242	177	73%
MASON	167	145	87%	139	122	88%
MECOSTA	203	142	70%	210	162	77%
MENOMINEE	98	60	61%	99	77	78%
MIDLAND	337	139	41%	359	187	52%
MISSAUKEE	109	74	68%	94	66	70%
MONROE	607	325	54%	624	430	69%
MONTCALM	412	280	68%	391	312	80%
MONTMORENCY	40	32	80%	45	33	73%
MUSKEGON	1,251	702	56%	1,280	810	63%
NEWAYGO	324	243	75%	313	232	74%
OAKLAND	3,960	2,478	63%	3,881	2,758	71%
OCEANA	194	145	75%	194	148	76%
OGEMAW	122	92	75%	120	80	67%
ONTONAGON	12	9	75%	13	9	69%
OSCEOLA	131	99	76%	142	106	75%
OSCODA	51	30	59%	50	31	62%
OTSEGO	154	102	66%	140	104	74%
OTTAWA	903	526	58%	960	652	68%
PRESQUE ISLE	54	36	67%	64	45	70%
ROSCOMMON	131	101	77%	109	79	72%
SAGINAW	1,282	1,026	80%	1,266	1,076	85%
SAINT CLAIR	889	719	81%	832	699	84%
SAINT JOSEPH	441	293	66%	467	341	73%
SANILAC	217	128	59%	198	154	78%
SCHOOLCRAFT	32	29	91%	39	36	92%
SHIAWASSEE	382	323	85%	365	312	85%
TUSCOLA	272	212	79%	281	233	83%
VAN BUREN	494	250	51%	535	329	61%
WASHTENAW	1,113	670	60%	1,071	712	66%
DETROIT, CITY OF	7,333	4,514	62%	7,344	5,443	74%
DETROIT, CITY OF	7,333	4,514	62%	7,344	5,443	74%
WAYNE, ex Detroit	7,461	4,338	58%	7,415	5,070	68%
WEXFORD	275	194	71%	280	211	75%
MICHIGAN	62,509	40,973	66%	61,932	45,886	74%

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

March 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	26	17	65%	43	31	72%
ALGER	21	13	62%	28	26	93%
ALLEGAN	517	327	63%	485	340	70%
ALPENA	131	104	79%	142	119	84%
ANTRIM	102	79	77%	89	70	79%
ARENAC	63	54	86%	68	57	84%
BARAGA	34	27	79%	24	22	92%
BARRY	198	135	68%	181	134	74%
BAY	442	364	82%	462	412	89%
BENZIE	70	63	90%	69	60	87%
BERRIEN	858	518	60%	859	624	73%
BRANCH	245	165	67%	246	185	75%
CALHOUN	760	508	67%	752	550	73%
CASS	267	156	58%	228	152	67%
CHARLEVOIX	96	80	83%	93	76	82%
CHEBOYGAN	119	84	71%	119	88	74%
CHIPPEWA	118	68	58%	111	96	86%
CLARE	183	134	73%	170	142	84%
CLINTON	220	142	65%	206	156	76%
CRAWFORD	62	41	66%	70	51	73%
DELTA	188	146	78%	142	110	77%
DICKINSON	91	59	65%	120	93	78%
EATON	354	246	69%	388	288	74%
EMMET	130	108	83%	103	88	85%
GENESEE	2,697	2,078	77%	2,772	2,350	85%
GLADWIN	107	79	74%	114	98	86%
GOGEBIC	69	53	77%	59	41	69%
GRAND TRAVERSE	303	211	70%	338	248	73%
GRATIOT	203	160	79%	208	175	84%
HILLSDALE	270	196	73%	264	201	76%
HOUGHTON	157	119	76%	143	116	81%
HURON	116	81	70%	118	94	80%
INGHAM	1,365	993	73%	1,305	1,022	78%
IONIA	274	190	69%	256	197	77%
IOSCO	143	104	73%	120	87	73%
IRON	58	44	76%	55	40	73%
ISABELLA	248	169	68%	220	172	78%
JACKSON	800	637	80%	765	662	87%
KALAMAZOO	1,188	913	77%	1,173	944	80%
KALKASKA	110	74	67%	96	73	76%
KENT	3,134	2,416	77%	3,005	2,494	83%
KEWEENAW	6	4	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	70	52	74%	59	47	80%
LAPEER	389	252	65%	339	235	69%
LEELANAU	46	31	67%	53	37	70%
LENAWEE	443	253	57%	455	287	63%
LIVINGSTON	382	269	70%	356	266	75%
LUCE	28	25	89%	27	21	78%
MACKINAC	29	26	90%	30	27	90%
MACOMB	3,578	2,315	65%	3,544	2,564	72%
MANISTEE	87	69	79%	74	67	91%
MARQUETTE	246	172	70%	207	157	76%
MASON	137	121	88%	111	97	87%
MECOSTA	170	122	72%	174	137	79%
MENOMINEE	71	45	63%	71	58	82%
MIDLAND	279	118	42%	292	165	57%
MISSAUKEE	91	63	69%	84	58	69%
MONROE	501	269	54%	509	355	70%
MONTCALM	345	238	69%	320	257	80%
MONTMORENCY	32	27	84%	34	27	79%
MUSKEGON	1,065	601	56%	1,083	680	63%
NEWAYGO	272	204	75%	257	194	75%
OAKLAND	3,405	2,187	64%	3,344	2,430	73%
OCEANA	164	123	75%	148	111	75%
OGEAW	105	83	79%	107	73	68%
ONTONAGON	12	9	75%	12	9	75%
OSCEOLA	105	81	77%	105	82	78%
OSCODA	45	27	60%	41	27	66%
OTSEGO	130	90	69%	116	87	75%
OTTAWA	688	410	60%	741	515	70%
PRESQUE ISLE	49	33	67%	52	39	75%
ROSCOMMON	113	92	81%	94	68	72%
SAGINAW	1,138	918	81%	1,115	964	86%
SAINT CLAIR	785	647	82%	706	605	86%
SAINT JOSEPH	379	249	66%	383	285	74%
SANILAC	174	108	62%	165	129	78%
SCHOOLCRAFT	28	26	93%	32	29	91%
SHIAWASSEE	321	278	87%	306	264	86%
TUSCOLA	259	212	82%	235	194	83%
VAN BUREN	403	214	53%	437	277	63%
WASHTENAW	940	585	62%	905	619	68%
DETROIT, CITY OF	6,610	4,110	62%	6,569	4,930	75%
DETROIT, CITY OF	6,610	4,110	62%	6,569	4,930	75%
WAYNE, ex Detroit	6,495	3,864	59%	6,370	4,447	70%
WEXFORD	223	161	72%	231	175	76%
MICHIGAN	53,985	36,048	67%	53,077	40,014	75%

**Table 6. Statewide Blood Lead Testing of Two and Three Year Old Children Eligible for Medicaid Only Fee-for-Service Coverage
March 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	8	7	88%	7	3	43%
ALGER	7	5	71%	6	5	83%
ALLEGAN	115	68	59%	104	58	56%
ALPENA	13	8	62%	20	17	85%
ANTRIM	18	11	61%	18	17	94%
ARENAC	14	10	71%	13	13	100%
BARAGA	17	13	76%	14	12	86%
BARRY	47	24	51%	45	29	64%
BAY	70	55	79%	58	43	74%
BENZIE	11	8	73%	9	4	44%
BERRIEN	124	71	57%	129	85	66%
BRANCH	32	13	41%	43	29	67%
CALHOUN	180	122	68%	183	120	66%
CASS	39	22	56%	54	36	67%
CHARLEVOIX	15	10	67%	18	15	83%
CHEBOYGAN	19	10	53%	19	13	68%
CHIPPEWA	89	52	58%	72	60	83%
CLARE	24	18	75%	26	19	73%
CLINTON	32	22	69%	39	26	67%
CRAWFORD	10	6	60%	9	4	44%
DELTA	31	21	68%	31	23	74%
DICKINSON	23	10	43%	33	25	76%
EATON	87	58	67%	77	46	60%
EMMET	21	10	48%	28	21	75%
GENESEE	330	206	62%	337	244	72%
GLADWIN	14	11	79%	21	17	81%
GOGEBIC	7	5	71%	13	9	69%
GRAND TRAVERSE	65	51	78%	67	50	75%
GRATIOT	25	14	56%	30	20	67%
HILLSDALE	44	37	84%	52	39	75%
HOUGHTON	14	7	50%	16	11	69%
HURON	25	17	68%	20	10	50%
INGHAM	238	129	54%	234	156	67%
IONIA	59	35	59%	71	58	82%
IOSCO	27	17	63%	23	12	52%
IRON	9	3	33%	0	0	NA
ISABELLA	42	17	40%	52	40	77%
JACKSON	129	95	74%	126	101	80%
KALAMAZOO	191	128	67%	208	148	71%
KALKASKA	10	4	40%	15	11	73%
KENT	558	356	64%	557	407	73%
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	4	1	25%	11	10	91%
LAPEER	66	40	61%	67	41	61%
LEELANAU	8	4	50%	13	11	85%
LENAWEE	80	40	50%	85	56	66%
LIVINGSTON	76	37	49%	63	38	60%
LUCE	4	3	75%	6	5	83%
MACKINAC	10	6	60%	15	14	93%
MACOMB	578	317	55%	593	352	59%
MANISTEE	24	22	92%	21	16	76%
MARQUETTE	36	15	42%	34	20	59%
MASON	28	22	79%	27	24	89%
MECOSTA	30	18	60%	35	24	69%
MENOMINEE	27	15	56%	28	19	68%
MIDLAND	57	20	35%	62	20	32%
MISSAUKEE	17	11	65%	10	8	80%
MONROE	104	55	53%	113	74	65%
MONTCALM	64	40	63%	71	55	77%
MONTMORENCY	8	5	63%	10	5	50%
MUSKEGON	179	98	55%	189	123	65%
NEWAYGO	49	38	78%	55	38	69%
OAKLAND	537	280	52%	515	318	62%
OCEANA	30	22	73%	46	37	80%
OGEMAW	17	9	53%	13	7	54%
ONTONAGON	0	0	NA	1	0	0%
OSCEOLA	24	17	71%	37	24	65%
OSCODA	6	3	50%	9	4	44%
OTSEGO	23	11	48%	24	17	71%
OTTAWA	205	110	54%	211	132	63%
PRESQUE ISLE	4	2	50%	12	6	50%
ROSCOMMON	18	9	50%	15	11	73%
SAGINAW	138	105	76%	146	109	75%
SAINT CLAIR	100	68	68%	122	92	75%
SAINT JOSEPH	61	43	70%	82	54	66%
SANILAC	42	19	45%	31	24	77%
SCHOOLCRAFT	4	3	75%	7	7	100%
SHIAWASSEE	61	45	74%	57	46	81%
TUSCOLA	53	34	64%	44	38	86%
VAN BUREN	89	35	39%	95	50	53%
WASHTENAW	163	82	50%	160	90	56%
DETROIT, CITY OF	709	395	56%	759	501	66%
DETROIT, CITY OF	709	395	56%	759	501	66%
WAYNE, ex Detroit	945	462	49%	1,019	611	60%
WEXFORD	50	31	62%	48	35	73%
MICHIGAN	8,271	4,774	58%	8,617	5,723	66%

Table 7: Blood Lead Testing of Two Year Old Children by Length of Enrollment
March 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	1,164	731	63%	427	309	72%	10
Blue Cross Complete	4,203	2,505	60%	1,060	778	73%	14
Harbor Health Plan	325	156	48%	42	30	71%	23
McLaren Health Plan	5,116	3,825	75%	2,403	2,051	85%	11
Meridian Health Plan of Michigan	13,924	9,467	68%	6,439	4,981	77%	9
Midwest Health Plan	88	51	58%	10	9	90%	32
Molina Healthcare of Michigan	9,823	6,654	68%	3,991	2,933	73%	6
Priority Health Govt Pgms	3,483	2,405	69%	1,416	1,148	81%	12
Total Health Care	1,385	808	58%	644	422	66%	7
United Healthcare Community Plan	6,748	4,519	67%	3,335	2,486	75%	8
Upper Peninsula Health Plan	1,154	836	72%	646	541	84%	11
Managed Care Totals/Percent	47,413	31,957	67%	20,413	15,688	77%	10
Current Performance Monitoring Standard	N/A			80%			
FFS (Title XIX only)	7,586	4,388	58%	1,259	816	65%	7
FFS (Title V/XIX)	239	142	59%	112	61	54%	-5
FFS Totals (Title XIX & V/XIX)	7,825	4,530	58%	1,371	877	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
March 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	1,146	821	72%	603	487	81%	9
Blue Cross Complete	3,914	2,661	68%	1,251	954	76%	8
Harbor Health Plan	238	149	63%	77	56	73%	10
McLaren Health Plan	4,987	4,026	81%	2,849	2,449	86%	5
Meridian Health Plan of Michigan	13,694	10,370	76%	7,400	6,040	82%	6
Midwest Health Plan	57	40	70%	9	7	78%	8
Molina Healthcare of Michigan	9,657	7,397	77%	4,655	3,778	81%	4
Priority Health Govt Pgms	3,471	2,583	74%	1,576	1,296	82%	8
Total Health Care	1,320	930	70%	836	627	75%	5
United Healthcare Community Plan	6,998	5,284	76%	4,237	3,409	80%	4
Upper Peninsula Health Plan	1,073	854	80%	655	579	88%	8
Managed Care Totals/Percent	46,555	35,115	75%	24,148	19,682	82%	7
FFS (Title XIX only)	7,878	5,232	66%	1,693	1,236	73%	7
FFS (Title V/XIX)	222	137	62%	105	59	56%	-6
FFS Totals (Title XIX & V/XIX)	8,100	5,369	66%	1,798	1,295	72%	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