

STI Trends in Michigan, 2012 - 2021

All data as of July 1, 2022

Surveillance & Epidemiology Section
Division of HIV & STI Programs
Bureau of Infectious Disease
Michigan Department of Health and Human Services



www.michigan.gov/hivsti

Overview

Michigan's STI Surveillance Program collects, interprets, and disseminates population level data regarding persons with sexually transmitted infections. Data is collected in the Michigan Disease Surveillance System (MDSS) where reports from laboratories, private providers, and local public health give information about diagnosis, demographics, and patient behaviors. The most commonly reported sexually transmitted infections are Chlamydia, gonorrhea, and syphilis. In this report, counts of symptomatic syphilis (primary and secondary) are included, as latent syphilis trends are more reflective of screening than of incidence.

Key Definitions

The Basics

- New Diagnoses:** The number of cases newly diagnosed over a given period of time, usually a year. The date assigned to an STI report is the onset date, or if that is missing the specimen collection date is used. If both dates are missing, the referral date, or the date the report was referred to MDHHS, is used.
- Diagnosis Rate:** For every 100,000 people in a population, the number who were newly diagnosed. This is used to compare groups.
- P&S Syphilis:** Primary and secondary, or the earliest stages of syphilis infection. During primary syphilis, symptoms appear where syphilis entered the body and last 3-6 weeks. In the following phase, secondary syphilis, symptoms typically manifest with body rash and last 2-10 weeks. Following these symptomatic stages, syphilis is considered latent but still can be infectious and can have long term health consequences, but for the purposes of surveillance reports, symptomatic syphilis (P&S) is used for annual statistics and year-to-year comparisons.

The following measures are displayed in this report:

- Count:** The number of persons newly diagnosed during the given year.
- Pop:** The total population (census) during the given year.
- Rate:** The new diagnosis rate per 100,000 persons in the specified population during the given year ($\text{count/pop} \times 100,000$ or $\text{count/est pop} \times 100,000$).
- % change (95CI):** Average annual percent change and 95% confidence interval. This measure is only displayed when statistically significant changes are observed ($p < 0.05$). Average annual percent change is calculated by assessing the count offset by the underlying population. *This represents an average change over a one-year period.*

Risk Categories and Hierarchy

- MSM:** Men who have sex with men.
- PWID:** Persons who inject drugs.
- Heterosexual:** Males: men who are not MSM or PWID and reported sex with a female.
Females: females who are not a PWID and reported sex with a male.

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Methods

Case counts of sexually transmitted infections (STIs) were aggregated by diagnosis year from the Michigan Diseases Surveillance System (MDSS). Population estimates come from the American Community Survey (ACS). Test of trend was calculated using negative binomial regression and trends with $p < 0.05$ were considered statistically significant. Percent annual change and 95% confidence intervals were calculated from this model offset by population.

Overview

Since 2012, **P&S Syphilis** rates have increased annually statewide by **10 percent (95% CI 6% - 14%)**. This, and all percent changes presented in this report, is an *average annual* change. In 2013, Michigan experienced a localized outbreak of Primary and Secondary syphilis in the Detroit area, but in the following years saw a decrease in cases. Since 2016, there has been a stronger trend of increasing reports.

Over that same time period, **Chlamydia** rates have, on average, not changed.

Since 2012, **gonorrhea** rates have increased **9 percent (95% CI 6% - 13%)** annually, with a slight drop in 2021. This average annual increase matches a national trend of increasing gonorrhea diagnoses in the United States.

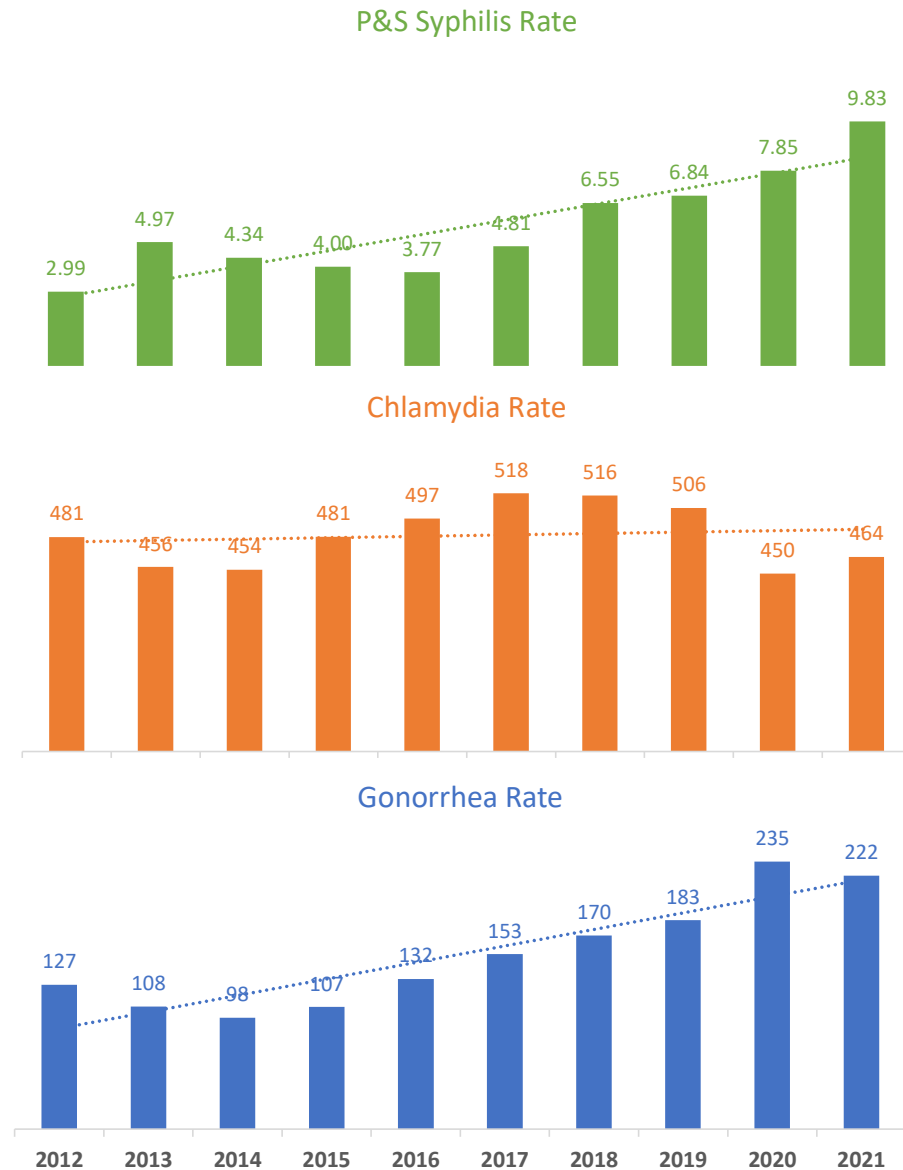
NOTE: 2021 population estimates come from the 2020 American Community Survey published estimates

More information:

Additional trend tables follow which stratify by reported demographic and geographic variables.

For more interactive data, visit MDHHS Data & Statistics at michigan.gov/hivsti

Overall trends in rates (per 100,000 population)



Annual Review of STI Trends in Michigan, 2012 - 2021 - Chlamydia

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Michigan Total	count	47556	45131	44985	47750	49398	51649	51492	50477	44848	46265	
	rate	480	455	453	481	496	518	516	506	450	464	No significant change

By Age

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Less than 15 years	count	658	562	449	418	445	436	412	414	328	328	-5.6%
	rate	18	15	12	12	12	12	12	12	9	9	(-7.6%--3.5%)
15-19 years	count	16873	14873	13694	14002	14901	15338	15302	14437	12264	11979	
	rate	1202	1079	1008	1040	1113	1159	1172	1120	968	945	No significant change
20-24 years	count	18789	18471	18542	19059	19137	19700	19153	18659	16920	17398	
	rate	1299	1252	1247	1299	1333	1396	1380	1369	1259	1294	No significant change
25-29 years	count	6185	6292	6866	8139	8534	9340	9479	9306	8170	8385	2.7%
	rate	527	531	566	648	651	687	683	666	596	611	(0.9%-4.7%)
30-39 years	count	3738	3641	4011	4508	4736	5073	5312	5669	5382	6147	5.1%
	rate	162	157	173	193	201	213	221	234	219	250	(3.9%-6.3%)
40-49 years	count	945	910	1006	1174	1180	1238	1240	1391	1210	1377	6.6%
	rate	35	35	39	47	48	51	52	59	52	59	(4.8%-8.5%)
50-59 years	count	272	238	326	335	361	398	478	462	439	497	9.8%
	rate	9	8	11	12	13	14	17	17	17	19	(7.5%-12.1%)
60+ years	count	96	144	91	115	104	126	116	139	135	154	
	rate	2	3	2	3	2	3	2	3	3	3	No significant change

By Race/Sex

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Am Indian/AN Female	count	163	168	165	149	156	159	190	135	163	161	
	rate	586	602	589	531	554	562	670	474	570	563	No significant change
Am Indian/AN Male	count	56	52	52	45	62	67	59	59	56	69	
	rate	203	188	188	162	223	240	211	210	199	245	No significant change
Asian/NH/PI Female	count	174	163	194	211	266	240	215	262	198	226	
	rate	127	114	130	137	166	145	128	154	116	133	No significant change
Asian/NH/PI Male	count	63	67	59	86	98	107	113	128	96	119	5.2%
	rate	49	50	42	59	64	67	69	77	58	72	(1.9%-8.7%)
Black Female	count	13918	12649	12355	11773	12044	13126	12636	12399	12050	12021	
	rate	1912	1742	1704	1628	1667	1816	1748	1715	1670	1666	No significant change
Black Male	count	6238	5845	5778	5911	6509	7468	7510	7681	7086	7245	3.7%
	rate	949	891	882	904	995	1143	1150	1178	1092	1117	(2.1%-5.3%)
Hispanic Female	count	936	928	1064	1193	1260	1430	1345	1443	1400	1757	3.9%
	rate	414	402	452	498	514	570	524	550	525	659	(2.3%-5.5%)
Hispanic Male	count	380	373	431	423	512	567	594	635	500	644	4.1%
	rate	163	157	178	171	202	219	224	234	182	234	(1.5%-6.7%)
Multi/Other Female*	count	387	404	437	534	917	1082	1565	1607	1475	1629	21.0%
	rate	392	400	422	505	847	975	1376	1383	1240	1370	(16.1%-26.1%)
Multi/other Male*	count	136	173	166	181	296	447	715	781	806	957	26.3%
	rate	144	178	166	176	281	413	645	688	691	821	(20.7%-32.0%)
White Female	count	9755	9257	10155	10353	10973	11470	11591	10565	9672	10106	
	rate	255	243	267	273	289	303	307	280	258	269	No significant change
White Male	count	2919	2955	3448	3701	4201	4570	4500	4251	3494	3853	4.7%
	rate	79	80	93	100	113	123	122	115	95	105	(1.5%-7.9%)

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Allegan County	count	264	315	294	323	360	429	389	411	324	317	3.4%
	rate	237	281	259	283	313	369	332	348	272	267	(0.5%-6.4%)
Barry-Eaton	count	437	469	565	575	651	573	605	595	578	505	2.8%
	rate	262	280	336	342	385	337	354	347	336	293	(0.6%-5.1%)
Bay County	count	301	308	316	321	344	416	419	390	332	395	3.9%
	rate	281	288	298	305	329	400	404	379	324	386	(1.5%-6.4%)
Benzie-Leelanau	count	79	59	77	80	85	104	81	66	43	68	No significant change
	rate	204	152	197	205	218	265	206	167	109	172	No significant change
Berrien County	count	948	801	795	847	831	875	972	863	784	913	No significant change
	rate	605	513	509	546	538	567	632	563	512	597	No significant change
Branch-Hillsdale-St. Joseph	count	371	312	383	446	405	421	466	409	394	431	2.4%
	rate	246	207	254	297	270	281	311	273	263	287	(0.0%-4.8%)
Calhoun County	count	779	756	908	913	944	995	1064	947	710	893	No significant change
	rate	578	561	673	679	703	742	795	708	532	669	No significant change
Central Michigan District	count	438	446	444	409	471	596	561	588	518	511	4.1%
	rate	230	236	235	216	249	316	298	312	275	272	(1.9%-6.4%)
Chippewa County	count	105	134	94	105	117	104	84	60	68	79	-6.2%
	rate	269	347	246	276	310	276	224	161	184	214	(-9.9%--2.4%)
Delta-Menominee	count	123	96	133	130	162	132	171	169	77	83	No significant change
	rate	203	159	221	217	273	224	291	289	132	143	No significant change
Detroit City	count	14098	12328	10804	11556	11600	11573	11000	11145	9947	10005	-2.2%
	rate	2013	1782	1582	1701	1712	1714	1633	1662	1495	1504	(-3.5%--0.9%)
Dickinson-Iron	count	83	54	66	90	90	77	93	97	68	87	No significant change
	rate	220	144	177	243	245	211	255	267	188	240	No significant change
District 2	count	72	79	101	122	113	155	124	92	111	97	No significant change
	rate	109	121	155	188	174	240	192	142	171	149	No significant change
District 4	count	100	123	125	104	134	149	121	133	112	131	No significant change
	rate	129	160	163	136	176	196	159	176	148	173	No significant change
District 10	count	641	531	680	809	729	729	707	756	574	603	No significant change
	rate	246	204	261	310	279	277	267	285	215	226	No significant change
Genesee County	count	3195	2548	2924	2773	2681	2823	2757	2953	2787	2686	No significant change
	rate	764	613	708	675	655	692	678	728	688	664	No significant change
Grand Traverse County	count	243	249	285	277	278	287	276	273	248	231	No significant change
	rate	272	276	314	302	302	312	298	293	265	247	No significant change
Huron County	count	35	47	57	64	57	57	67	50	59	57	4.4%
	rate	108	146	178	202	181	182	215	162	192	186	(0.7%-8.2%)

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Ingham County	<i>count</i>	1784	1833	1719	1766	2014	1921	1946	1812	1676	1783	No significant change
	<i>rate</i>	629	645	602	615	695	659	668	622	577	614	
Ionia County	<i>count</i>	132	131	140	181	170	220	230	174	192	199	6.0% (2.5%-9.6%)
	<i>rate</i>	207	205	218	282	265	342	358	269	297	308	
Jackson County	<i>count</i>	748	633	804	895	930	846	958	925	692	774	No significant change
	<i>rate</i>	468	396	504	562	587	533	604	584	441	493	
Kalamazoo County	<i>count</i>	1832	1856	2059	2136	2181	2303	2356	2332	1931	1895	No significant change
	<i>rate</i>	717	721	795	822	834	874	889	878	726	712	
Kent County	<i>count</i>	3508	3760	3665	3825	3538	4180	4018	3625	3340	3831	No significant change
	<i>rate</i>	570	602	580	600	549	643	615	552	507	582	
Lapeer County	<i>count</i>	138	156	140	165	143	163	186	178	148	167	No significant change
	<i>rate</i>	156	177	159	187	162	185	211	203	169	191	
Lenawee County	<i>count</i>	217	207	215	284	300	309	290	266	245	240	3.4% (0.1%-6.7%)
	<i>rate</i>	219	209	218	289	304	314	296	270	250	245	
Livingston County	<i>count</i>	290	267	274	367	386	379	375	351	299	315	No significant change
	<i>rate</i>	159	145	148	196	205	200	196	183	155	164	
Luce-Mack-Alger-School	<i>count</i>	38	52	39	39	73	79	65	56	46	56	No significant change
	<i>rate</i>	107	148	112	113	214	230	190	164	135	164	
Macomb County	<i>count</i>	2376	2600	2424	2726	3232	3548	3590	3578	3046	3306	4.9% (2.5%-7.4%)
	<i>rate</i>	280	303	281	315	372	407	412	410	350	380	
Marquette County	<i>count</i>	168	217	221	212	277	268	320	240	208	190	4.2% (0.0%-8.5%)
	<i>rate</i>	248	320	326	315	416	403	482	360	316	289	
Mid-Michigan District	<i>count</i>	440	433	438	493	550	536	596	581	501	526	3.4% (1.4%-5.3%)
	<i>rate</i>	243	238	242	272	303	293	325	316	273	287	
Midland County	<i>count</i>	143	166	174	160	214	221	198	195	164	152	No significant change
	<i>rate</i>	171	198	208	191	256	265	237	234	197	182	
Monroe County	<i>count</i>	336	360	350	409	400	369	380	412	407	333	2.0% (0.7%-3.4%)
	<i>rate</i>	223	240	233	274	268	247	253	274	270	221	

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Muskegon County	<i>count</i>	1343	1198	1239	1344	1310	1425	1312	1336	1336	1363	No significant change
	<i>rate</i>	789	695	719	779	756	820	755	769	768	784	
Northwest MI Com Hlth Agency	<i>count</i>	247	184	195	190	238	284	214	218	178	207	No significant change
	<i>rate</i>	232	173	183	179	223	265	199	203	165	192	
Oakland County	<i>count</i>	3471	3556	3616	3942	4198	4214	4526	4443	3924	3955	2.6% (1.2%-4.0%)
	<i>rate</i>	284	288	291	317	335	335	360	353	313	316	
Ottawa County	<i>count</i>	756	733	706	854	855	974	924	804	808	1006	No significant change
	<i>rate</i>	279	267	254	304	301	340	319	276	274	341	
Saginaw County	<i>count</i>	1236	1190	1222	1264	1137	1340	1484	1306	1243	1248	1.9% (0.2%-3.6%)
	<i>rate</i>	623	604	626	654	590	698	778	686	655	657	
Sanilac County	<i>count</i>	74	64	83	95	86	96	81	73	72	51	No significant change
	<i>rate</i>	175	153	199	229	208	233	196	177	177	125	
Shiawassee County	<i>count</i>	159	148	207	199	210	217	197	246	170	156	No significant change
	<i>rate</i>	229	215	301	290	306	317	289	361	251	230	
St Clair County	<i>count</i>	445	443	413	401	444	479	498	463	364	336	No significant change
	<i>rate</i>	277	276	258	251	278	301	313	291	229	211	
Tuscola County	<i>count</i>	97	121	114	127	148	147	136	121	114	98	No significant change
	<i>rate</i>	177	223	211	236	278	278	258	231	218	187	
Van Buren-Cass	<i>count</i>	292	337	367	374	384	442	467	488	373	396	4.7% (2.1%-7.4%)
	<i>rate</i>	230	265	289	296	303	348	367	383	294	312	
Washtenaw County	<i>count</i>	1397	1369	1438	1648	1778	1693	1727	1804	1567	1449	2.3% (0.7%-4.0%)
	<i>rate</i>	396	384	399	453	485	458	466	490	428	395	
Wayne County	<i>count</i>	3533	3430	3632	3671	4063	4412	4373	4330	3939	3956	3.2% (1.8%-4.7%)
	<i>rate</i>	322	315	334	338	375	407	404	401	366	368	
Western UP District	<i>count</i>	91	84	97	107	118	122	109	133	134	125	6.6% (4.0%-9.2%)
	<i>rate</i>	130	120	140	156	173	179	162	202	206	193	

*Detroit LHD refers to Detroit City and Hamtramck, Highland Park, the Grosse Points, and Harper Woods. Wayne LHD covers Western Wayne County for STIs.

Note: cases with missing data for characteristics were omitted from the respective analyses

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		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Michigan Total	count	294	493	431	397	375	480	654	683	782	980	10.0%
	rate	3	5	4	4	4	5	7	7	8	10	(5.8%-14.3%)

By Age

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Less than 15 years	count	0	0	0	0	0	2	2	1	0	1	No significant change
	rate	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	
15-19 years	count	18	39	23	27	31	39	29	33	29	41	No significant change
	rate	1.3	2.8	1.7	2.0	2.3	2.9	2.2	2.6	2.3	3.2	
20-24 years	count	91	157	125	79	95	103	129	102	121	168	No significant change
	rate	6.3	10.6	8.4	5.4	6.6	7.3	9.3	7.5	9.0	12.5	
25-29 years	count	62	97	95	111	94	107	158	164	175	185	9.1% (5.7%-12.6%)
	rate	5.3	8.2	7.8	8.8	7.2	7.9	11.4	11.7	12.8	13.5	
30-39 years	count	64	109	97	97	72	105	169	190	223	306	13.1% (7.4%-19.1%)
	rate	2.8	4.7	4.2	4.2	3.1	4.4	7.0	7.8	9.1	12.4	
40-49 years	count	37	52	60	46	41	77	94	105	119	146	17.0% (12.2%-22.1%)
	rate	1.4	2.0	2.3	1.8	1.7	3.2	3.9	4.5	5.1	6.3	
50-59 years	count	16	33	25	33	30	36	53	64	85	88	21.4% (16.3%-26.7%)
	rate	0.5	1.1	0.9	1.1	1.0	1.3	1.9	2.4	3.2	3.3	
60+ years	count	6	6	6	4	12	11	20	24	30	45	25.6% (16.1%-35.9%)
	rate	0.1	0.1	0.1	0.1	0.3	0.2	0.4	0.5	0.6	0.9	

By Race/Sex

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Am Indian/AN Female	count	0	0	0	0	0	0	2	1	2	2	97.3% (4.2%-273.6%)
	rate	0.0	0.0	0.0	0.0	0.0	0.0	7.1	3.5	7.0	7.0	
Am Indian/AN Male	count	0	2	0	1	1	2	3	3	4	3	30.2% (4.8%-61.8%)
	rate	0.0	7.2	0.0	3.6	3.6	7.2	10.7	10.7	14.2	10.7	
Asian/NH/PI Female	count	0	0	0	0	0	1	0	0	0	1	No significant change
	rate	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.6	
Asian/NH/PI Male	count	2	4	0	4	4	5	11	7	8	14	18.0% (4.4%-33.5%)
	rate	1.6	3.0	0.0	2.7	2.6	3.1	6.7	4.2	4.8	8.4	
Black Female	count	20	25	22	26	19	17	38	49	70	126	15.4% (7.6%-23.9%)
	rate	2.7	3.4	3.0	3.6	2.6	2.4	5.3	6.8	9.7	17.5	
Black Male	count	181	312	239	206	168	210	306	320	398	499	6.3% (0.7%-12.3%)
	rate	27.5	47.6	36.5	31.5	25.7	32.1	46.9	49.1	61.3	76.9	
Hispanic Female	count	1	1	0	0	2	0	6	7	4	4	39.4% (9.8%-77.0%)
	rate	0.4	0.4	0.0	0.0	0.8	0.0	2.3	2.7	1.5	1.5	
Hispanic Male	count	7	15	16	15	26	34	31	39	30	37	14.7% (7.8%-22.0%)
	rate	3.0	6.3	6.6	6.1	10.3	13.1	11.7	14.4	10.9	13.4	
Multi/Other Female	count	0	0	0	0	0	0	2	0	0	3	No significant change
	rate	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	2.5	
Multi/other Male	count	1	3	2	6	2	4	8	7	17	14	29.7% (14.4%-47.0%)
	rate	1.1	3.1	2.0	5.9	1.9	3.7	7.2	6.2	14.6	12.0	
White Female	count	6	5	8	8	11	14	21	38	36	70	33.0% (23.7%-43.1%)
	rate	0.2	0.1	0.2	0.2	0.3	0.4	0.6	1.0	1.0	1.9	
White Male	count	76	126	144	131	138	192	226	209	210	200	11.8% (8.0%-15.7%)
	rate	2.0	3.4	3.9	3.5	3.5	5.2	6.1	5.7	5.7	5.4	

Annual Review of STI Trends in Michigan, 2012 - 2021 - P&S Syphilis

By Transmission Risk *(population denominators not available)*

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Het Female	<i>count</i>	20	26	24	30	31	25	56	83	100	177	26.9%
	<i>(Women who have sex with men)</i>											(19.8%-34.5%)
Het Male	<i>count</i>	33	63	64	49	42	63	110	166	214	277	23.9%
	<i>(Men who have sex with women only)</i>											(16.7%-31.4%)
MSM	<i>count</i>	200	354	284	271	269	337	396	344	387	376	5.0%
	<i>(Men who have sex with men)</i>											(1.9%-8.2%)
PWID	<i>count</i>	6	4	7	4	5	7	16	25	16	12	22.5%
	<i>(People who inject drugs)</i>											(12.9%-32.9%)

By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Allegan County	<i>count</i>	0	2	4	1	1	4	1	2	3	6	No significant change
	<i>rate</i>	0.0	1.8	3.5	0.9	0.9	3.4	0.9	1.7	2.5	5.0	
Barry-Eaton	<i>count</i>	1	2	1	0	1	3	3	8	7	8	37.2%
	<i>rate</i>	0.6	1.2	0.6	0.0	0.6	1.8	1.8	4.7	4.1	4.6	(14.6%-64.0%)
Bay County	<i>count</i>	0	2	1	4	0	5	6	1	2	3	No significant change
	<i>rate</i>	0.0	1.9	0.9	3.8	0.0	4.8	5.8	1.0	2.0	2.9	
Benzie-Leelanau	<i>count</i>	1	0	0	0	0	0	2	0	0	0	No significant change
	<i>rate</i>	2.6	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	
Berrien County	<i>count</i>	0	3	5	3	0	3	8	2	3	4	No significant change
	<i>rate</i>	0.0	1.9	3.2	1.9	0.0	1.9	5.2	1.3	2.0	2.6	
Branch-Hillsdale-St. Joseph	<i>count</i>	0	2	4	1	2	4	1	2	1	5	No significant change
	<i>rate</i>	0.0	1.3	2.7	0.7	1.3	2.7	0.7	1.3	0.7	3.3	
Calhoun County	<i>count</i>	1	4	4	0	1	3	1	5	7	12	No significant change
	<i>rate</i>	0.7	3.0	3.0	0.0	0.7	2.2	0.7	3.7	5.2	9.0	
Central Michigan District	<i>count</i>	1	2	2	1	1	3	11	6	3	5	25.6%
	<i>rate</i>	0.5	1.1	1.1	0.5	0.5	1.6	5.8	3.2	1.6	2.7	(3.0%-53.0%)
Chippewa County	<i>count</i>	0	0	0	0	0	0	2	4	1	1	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	5.3	10.7	2.7	2.7	
Delta-Menominee	<i>count</i>	0	0	0	0	0	0	0	0	0	1	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	
Detroit City	<i>count</i>	136	214	147	115	105	118	218	249	302	357	8.2%
	<i>rate</i>	19.4	30.9	21.5	16.9	15.5	17.5	32.4	37.1	45.4	53.7	(1.0%-16.0%)
Dickinson-Iron	<i>count</i>	0	0	0	0	0	0	0	0	0	1	--
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	
District 2	<i>count</i>	0	0	0	0	0	1	0	0	1	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	
District 4	<i>count</i>	0	0	0	0	1	0	3	2	1	0	52.2%
	<i>rate</i>	0.0	0.0	0.0	0.0	1.3	0.0	3.9	2.6	1.3	0.0	(3.4%-124.0%)
District 10	<i>count</i>	0	0	3	5	2	3	4	2	4	5	No significant change
	<i>rate</i>	0.0	0.0	1.2	1.9	0.8	1.1	1.5	0.8	1.5	1.9	

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Genesee County	<i>count</i>	3	14	9	12	16	21	10	23	26	18	16.7% (8.1%-26.0%)
	<i>rate</i>	0.7	3.4	2.2	2.9	3.9	5.2	2.5	5.7	6.4	4.4	
Grand Traverse County	<i>count</i>	0	2	2	0	1	2	0	6	4	1	26.8% (1.4%-59.0%)
	<i>rate</i>	0.0	2.2	2.2	0.0	1.1	2.2	0.0	6.4	4.3	1.1	
Huron County	<i>count</i>	0	0	0	1	1	0	0	0	1	1	No significant change
	<i>rate</i>	0.0	0.0	0.0	3.1	3.2	0.0	0.0	0.0	3.3	3.3	
Ingham County	<i>count</i>	6	10	9	11	14	29	28	26	33	21	22.0% (14.4%-30.0%)
	<i>rate</i>	2.1	3.5	3.1	3.8	4.8	9.9	9.6	8.9	11.4	7.2	
Ionia County	<i>count</i>	1	0	0	2	1	0	1	5	2	3	No significant change
	<i>rate</i>	1.6	0.0	0.0	3.1	1.6	0.0	1.6	7.7	3.1	4.6	
Jackson County	<i>count</i>	5	3	6	5	3	8	9	6	9	4	No significant change
	<i>rate</i>	3.1	1.9	3.8	3.1	1.9	5.0	5.7	3.8	5.7	2.5	
Kalamazoo County	<i>count</i>	17	6	8	7	5	8	12	20	29	67	No significant change
	<i>rate</i>	6.7	2.3	3.1	2.7	1.9	3.0	4.5	7.5	10.9	25.2	
Kent County	<i>count</i>	7	10	9	17	26	34	29	25	37	64	19.4% (11.3%-28.0%)
	<i>rate</i>	1.1	1.6	1.4	2.7	4.0	5.2	4.4	3.8	5.6	9.7	
Lapeer County	<i>count</i>	0	1	1	2	0	1	2	1	2	1	No significant change
	<i>rate</i>	0.0	1.1	1.1	2.3	0.0	1.1	2.3	1.1	2.3	1.1	
Lenawee County	<i>count</i>	0	1	1	2	0	4	5	1	1	2	No significant change
	<i>rate</i>	0.0	1.0	1.0	2.0	0.0	4.1	5.1	1.0	1.0	2.0	
Livingston County	<i>count</i>	0	2	4	3	4	2	1	2	5	3	No significant change
	<i>rate</i>	0.0	1.1	2.2	1.6	2.1	1.1	0.5	1.0	2.6	1.6	
Luce-Mack-Alger-School	<i>count</i>	0	0	0	0	1	1	0	0	0	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	2.9	2.9	0.0	0.0	0.0	0.0	
Macomb County	<i>count</i>	20	34	30	38	27	44	73	55	79	91	15.8% (10.0%-22.0%)
	<i>rate</i>	2.4	4.0	3.5	4.4	3.1	5.1	8.4	6.3	9.1	10.5	
Marquette County	<i>count</i>	0	0	0	2	0	0	0	1	0	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.5	0.0	0.0	
Mid-Michigan District	<i>count</i>	2	1	0	1	2	3	3	3	4	3	No significant change
	<i>rate</i>	1.1	0.6	0.0	0.6	1.1	1.6	1.6	1.6	2.2	1.6	
Midland County	<i>count</i>	0	1	1	0	1	1	0	3	1	0	No significant change
	<i>rate</i>	0.0	1.2	1.2	0.0	1.2	1.2	0.0	3.6	1.2	0.0	

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		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Monroe County	<i>count</i>	3	2	1	5	6	10	6	4	1	3	No significant change
	<i>rate</i>	2.0	1.3	0.7	3.3	4.0	6.7	4.0	2.7	0.7	2.0	
Muskegon County	<i>count</i>	0	1	5	1	2	4	0	1	3	5	No significant change
	<i>rate</i>	0.0	0.6	2.9	0.6	1.2	2.3	0.0	0.6	1.7	2.9	
Northwest MI Com Hlth Agency	<i>count</i>	0	0	0	2	1	4	2	3	0	2	No significant change
	<i>rate</i>	0.0	0.0	0.0	1.9	0.9	3.7	1.9	2.8	0.0	1.9	
Oakland County	<i>count</i>	41	71	73	64	64	62	87	88	77	120	5.2% (1.5%-9.0%)
	<i>rate</i>	3.4	5.7	5.9	5.1	5.1	4.9	6.9	7.0	6.1	9.6	
Ottawa County	<i>count</i>	0	0	5	4	5	1	6	3	7	8	19.5% (0.7%-42.0%)
	<i>rate</i>	0.0	0.0	1.8	1.4	1.8	0.3	2.1	1.0	2.4	2.7	
Saginaw County	<i>count</i>	1	4	4	3	2	2	2	4	4	8	No significant change
	<i>rate</i>	0.5	2.0	2.0	1.6	1.0	1.0	1.0	2.1	2.1	4.2	
Sanilac County	<i>count</i>	0	0	0	0	2	0	0	1	1	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	4.8	0.0	0.0	2.4	2.5	0.0	
Shiawassee County	<i>count</i>	0	1	0	1	0	1	2	0	6	1	48.4% (5.8%-108.0%)
	<i>rate</i>	0.0	1.5	0.0	1.5	0.0	1.5	2.9	0.0	8.9	1.5	
St Clair County	<i>count</i>	4	2	3	2	3	2	5	4	7	9	No significant change
	<i>rate</i>	2.5	1.2	1.9	1.3	1.9	1.3	3.1	2.5	4.4	5.6	
Tuscola County	<i>count</i>	0	0	0	0	0	0	0	0	1	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	
Van Buren-Cass	<i>count</i>	1	0	0	0	1	1	1	2	4	3	44.7% (6.5%-96.0%)
	<i>rate</i>	0.8	0.0	0.0	0.0	0.8	0.8	0.8	1.6	3.1	2.4	
Washtenaw County	<i>count</i>	9	22	25	27	17	28	25	24	31	35	6.6% (1.1%-12.0%)
	<i>rate</i>	2.6	6.2	6.9	7.4	4.6	7.6	6.7	6.5	8.5	9.6	
Wayne LHD*	<i>count</i>	36	74	64	54	56	60	85	89	71	99	6.5% (1.6%-12.0%)
	<i>rate</i>	3.3	6.8	5.9	5.0	5.2	5.5	7.9	8.2	6.6	9.2	
Western UP District	<i>count</i>	0	0	0	1	0	0	0	0	1	0	No significant change
	<i>rate</i>	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.5	0.0	

*Detroit LHD refers to Detroit City and Hamtramck, Highland Park, the Grosse Points, and Harper Woods. Wayne LHD covers Western Wayne County for STIs.

Note: cases with missing data for characteristics were omitted from the respective analyses

Annual Review of STI Trends in Michigan, 2012 - 2021 - Latent Syphilis

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Michigan Total	count	488	581	678	694	766	810	1036	1213	1234	1661	12.1%
	rate	5	6	7	7	8	8	10	12	12	17	(10.5%-13.7%)
By Age												
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Less than 15 years	count	0	0	1	0	0	0	1	0	2	0	No significant change
	rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
15-19 years	count	27	31	23	26	39	32	45	46	36	54	8.0%
	rate	1.9	2.2	1.7	1.9	2.9	2.4	3.4	3.6	2.8	4.3	(3.3%-12.8%)
20-24 years	count	98	131	138	144	126	118	150	157	162	246	5.4%
	rate	6.8	8.9	9.3	9.8	8.8	8.4	10.8	11.5	12.1	18.3	(3.1%-7.8%)
25-29 years	count	67	97	114	117	168	165	209	293	235	297	14.9%
	rate	5.7	8.2	9.4	9.3	12.8	12.1	15.1	21.0	17.1	21.6	(11.3%-18.6%)
30-39 years	count	110	118	162	189	179	232	296	348	384	595	16.5%
	rate	4.8	5.1	7.0	8.1	7.6	9.7	12.3	14.3	15.6	24.2	(14.5%-18.6%)
40-49 years	count	119	138	145	139	152	161	198	199	232	244	10.0%
	rate	4.4	5.2	5.7	5.6	6.2	6.7	8.3	8.4	10.0	10.5	(7.9%-12.3%)
50-59 years	count	55	55	80	68	80	81	102	126	137	155	14.0%
	rate	1.9	1.9	2.7	2.3	2.8	2.9	3.7	4.7	5.2	5.8	(10.9%-17.3%)
60+ years	count	12	11	15	11	22	21	35	44	46	70	20.2%
	rate	0.3	0.3	0.3	0.2	0.5	0.4	0.7	0.9	0.9	1.4	(13.6%-27.1%)
By Race/Sex												
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Am Indian/AN Female	count	2	0	0	0	0	0	0	2	1	1	No significant change
	rate	7.2	0.0	0.0	0.0	0.0	0.0	0.0	7.0	3.5	3.5	
Am Indian/AN Male	count	1	2	1	2	4	1	3	3	6	3	19.0%
	rate	3.6	7.2	3.6	7.2	14.4	3.6	10.7	10.7	21.3	10.7	(0.6%-40.8%)
Asian/NH/PI Female	count	2	3	5	3	3	4	4	2	4	1	No significant change
	rate	1.5	2.1	3.4	1.9	1.9	2.4	2.4	1.2	2.3	0.6	
Asian/NH/PI Male	count	8	6	8	6	11	9	11	10	7	17	No significant change
	rate	6.2	4.5	5.7	4.1	7.1	5.6	6.7	6.0	4.2	10.2	
Black Female	count	77	102	126	119	84	103	118	173	171	255	8.0%
	rate	10.6	14.0	17.4	16.5	11.6	14.3	16.3	23.9	23.7	35.3	(3.4%-12.8%)
Black Male	count	258	285	304	298	361	365	465	519	498	668	9.8%
	rate	39.2	43.5	46.4	45.6	55.2	55.9	71.2	79.6	76.7	102.9	(8.1%-11.6%)
Hispanic Female	count	3	5	12	7	4	12	9	16	22	23	18.2%
	rate	1.3	2.2	5.1	2.9	1.6	4.8	3.5	6.1	8.3	8.6	(8.5%-28.8%)
Hispanic Male	count	21	18	25	31	33	49	62	67	72	75	17.6%
	rate	9.0	7.6	10.3	12.5	13.0	18.9	23.4	24.7	26.1	27.2	(12.8%-22.7%)
Multi/Other Female	count	5	6	4	4	5	0	0	6	6	12	No significant change
	rate	5.1	5.9	3.9	3.8	4.6	0.0	0.0	5.2	5.0	10.1	
Multi/other Male	count	1	9	10	11	8	5	15	11	14	44	No significant change
	rate	1.1	9.2	10.0	10.7	7.6	4.6	13.5	9.7	12.0	37.7	
White Female	count	21	28	28	32	30	37	51	79	100	167	22.1%
	rate	0.5	0.7	0.7	0.8	0.8	1.0	1.3	2.1	2.7	4.5	(16.2%-28.2%)
White Male	count	85	111	143	167	210	211	297	316	315	355	17.8%
	rate	2.3	3.0	3.9	4.5	5.7	5.7	8.0	8.6	8.6	9.7	(14.8%-20.9%)

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		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Het Female	<i>count</i>	55	98	110	109	96	118	145	194	214	325	16.7%
	<i>(Women who have sex with men)</i>											(12.6%-20.9%)
Het Male	<i>count</i>	74	85	87	78	100	100	127	157	180	174	11.5%
	<i>(Men who have sex with women only)</i>											(9.2%-13.9%)
MSM	<i>count</i>	183	227	259	290	341	383	487	532	445	522	12.4%
	<i>(Men who have sex with men)</i>											(9.8%-15.1%)
PWID	<i>count</i>	10	4	5	10	7	9	23	38	34	24	27.5%
	<i>(People who inject drugs)</i>											(17.6%-38.1%)

By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Allegan County	<i>count</i>	0	2	1	5	6	4	6	5	8	7	7.3%
	<i>rate</i>	0.0	1.8	0.9	4.4	5.2	3.4	5.1	4.2	6.7	5.9	(41.0%-123.0%)
Barry-Eaton	<i>count</i>	0	1	3	4	2	6	11	18	11	15	23.3%
	<i>rate</i>	0.0	0.6	1.8	2.4	1.2	3.5	6.4	10.5	6.4	8.7	(67.0%-143.6%)
Bay County	<i>count</i>	1	1	2	2	2	4	8	3	1	9	-4.7%
	<i>rate</i>	0.9	0.9	1.9	1.9	1.9	3.8	7.7	2.9	1.0	8.8	(40.0%-115.6%)
Benzie-Leelanau	<i>count</i>	0	0	1	0	0	0	0	0	3	2	-20.9%
	<i>rate</i>	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	7.6	5.1	(166.0%-145.1%)
Berrien County	<i>count</i>	1	5	7	6	5	14	17	7	6	8	-0.2%
	<i>rate</i>	0.6	3.2	4.5	3.9	3.2	9.1	11.0	4.6	3.9	5.2	(34.0%-115.8%)
Branch-Hillsdale-St. Joseph	<i>count</i>	0	1	1	1	5	5	5	6	2	1	2.8%
	<i>rate</i>	0.0	0.7	0.7	0.7	3.3	3.3	3.3	4.0	1.3	0.7	(54.0%-126.0%)
Calhoun County	<i>count</i>	1	6	8	2	8	5	6	14	13	17	7.9%
	<i>rate</i>	0.7	4.5	5.9	1.5	6.0	3.7	4.5	10.5	9.7	12.7	(32.0%-119.4%)
Central Michigan District	<i>count</i>	0	4	4	2	3	2	3	2	10	5	-0.2%
	<i>rate</i>	0.0	2.1	2.1	1.1	1.6	1.1	1.6	1.1	5.3	2.7	(38.0%-117.3%)
Chippewa County	<i>count</i>	0	0	1	0	0	1	7	4	2	2	8.4%
	<i>rate</i>	0.0	0.0	2.6	0.0	0.0	2.7	18.7	10.7	5.4	5.4	(150.0%-164.4%)
Delta-Menominee	<i>count</i>	0	0	0	0	0	0	0	2	1	1	-15.0%
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.7	1.7	(639.0%-250.7%)
Detroit City	<i>count</i>	215	236	292	271	281	308	370	441	453	598	8.4%
	<i>rate</i>	30.7	34.1	42.8	39.9	41.5	45.6	54.9	65.8	68.1	89.9	(12.0%-110.3%)
Dickinson-Iron	<i>count</i>	0	0	0	0	0	0	1	0	2	3	-15.0%
	<i>rate</i>	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	5.5	8.3	(639.0%-250.5%)
District 2	<i>count</i>	0	0	2	0	0	0	1	1	0	1	-30.1%
	<i>rate</i>	0.0	0.0	3.1	0.0	0.0	0.0	1.5	1.5	0.0	1.5	(55.0%-104.1%)
District 4	<i>count</i>	1	0	0	2	1	2	0	1	0	0	-26.3%
	<i>rate</i>	1.3	0.0	0.0	2.6	1.3	2.6	0.0	1.3	0.0	0.0	(31.0%-98.2%)
District 10	<i>count</i>	1	0	5	5	3	2	6	13	18	21	23.8%
	<i>rate</i>	0.4	0.0	1.9	1.9	1.1	0.8	2.3	4.9	6.8	7.9	(60.0%-140.9%)

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Genesee County	count	24	24	25	25	26	29	25	36	42	43	2.2%
	rate	5.7	5.8	6.1	6.1	6.4	7.1	6.1	8.9	10.4	10.6	(12.0%-107.2%)
Grand Traverse County	count	1	1	0	0	0	0	3	2	2	3	-5.2%
	rate	1.1	1.1	0.0	0.0	0.0	0.0	3.2	2.1	2.1	3.2	(66.0%-125.5%)
Huron County	count	0	0	2	0	0	0	0	0	0	0	-94.4%
	rate	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(312.0%-47.9%)
Ingham County	count	5	19	17	11	15	28	57	53	48	60	16.1%
	rate	1.8	6.7	5.9	3.8	5.2	9.6	19.6	18.2	16.5	20.6	(39.0%-125.0%)
Ionia County	count	0	0	1	3	0	3	2	5	0	3	-10.6%
	rate	0.0	0.0	1.6	4.7	0.0	4.7	3.1	7.7	0.0	4.6	(82.0%-127.4%)
Jackson County	count	29	8	14	5	10	8	17	28	33	43	-5.7%
	rate	18.1	5.0	8.8	3.1	6.3	5.0	10.7	17.7	21.0	27.4	(21.0%-106.7%)
Kalamazoo County	count	8	12	9	12	19	22	23	25	32	67	10.3%
	rate	3.1	4.7	3.5	4.6	7.3	8.4	8.7	9.4	12.0	25.2	(25.0%-117.5%)
Kent County	count	22	27	40	36	58	70	67	80	105	96	14.5%
	rate	3.6	4.3	6.3	5.6	9.0	10.8	10.3	12.2	15.9	14.6	(23.0%-118.7%)
Lapeer County	count	1	2	1	1	1	0	3	1	7	1	-0.7%
	rate	1.1	2.3	1.1	1.1	1.1	0.0	3.4	1.1	8.0	1.1	(55.0%-123.9%)
Lenawee County	count	0	0	1	3	2	2	10	0	5	7	0.3%
	rate	0.0	0.0	1.0	3.0	2.0	2.0	10.2	0.0	5.1	7.2	(98.0%-141.0%)
Livingston County	count	1	1	1	1	3	3	3	9	3	7	6.5%
	rate	0.5	0.5	0.5	0.5	1.6	1.6	1.6	4.7	1.6	3.6	(53.0%-127.5%)
Luce-Mack-Alger-School	count	0	0	0	0	2	1	0	2	2	0	1.4%
	rate	0.0	0.0	0.0	0.0	5.9	2.9	0.0	5.8	5.9	0.0	(112.0%-146.8%)
Macomb County	count	36	44	47	70	52	61	69	81	82	137	5.8%
	rate	4.2	5.1	5.4	8.1	6.0	7.0	7.9	9.3	9.4	15.7	(13.0%-109.4%)
Marquette County	count	0	1	0	0	1	0	0	2	1	2	-13.6%
	rate	0.0	1.5	0.0	0.0	1.5	0.0	0.0	3.0	1.5	3.0	(83.0%-125.6%)
Mid-Michigan District	count	2	2	3	2	3	4	2	6	14	11	10.8%
	rate	1.1	1.1	1.7	1.1	1.7	2.2	1.1	3.3	7.6	6.0	(50.0%-129.1%)
Midland County	count	0	0	1	0	1	2	2	3	1	2	0.3%
	rate	0.0	0.0	1.2	0.0	1.2	2.4	2.4	3.6	1.2	2.4	(75.0%-132.6%)

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Monroe County	count	2	3	6	3	7	5	5	5	7	9	-2.6%
	rate	1.3	2.0	4.0	2.0	4.7	3.3	3.3	3.3	4.6	6.0	(23.0%-109.6%)
Muskegon County	count	4	3	7	9	9	9	18	12	8	15	3.0%
	rate	2.4	1.7	4.1	5.2	5.2	5.2	10.4	6.9	4.6	8.6	(25.0%-113.7%)
Northwest MI Com Hlth Agency	count	0	1	0	1	1	3	3	3	7	4	18.1%
	rate	0.0	0.9	0.0	0.9	0.9	2.8	2.8	2.8	6.5	3.7	(87.0%-148.5%)
Oakland County	count	55	90	76	86	104	85	127	149	138	196	6.9%
	rate	4.5	7.3	6.1	6.9	8.3	6.8	10.1	11.8	11.0	15.6	(14.0%-110.4%)
Ottawa County	count	0	0	2	6	7	5	8	11	16	18	22.4%
	rate	0.0	0.0	0.7	2.1	2.5	1.7	2.8	3.8	5.4	6.1	(57.0%-138.8%)
Saginaw County	count	8	7	3	4	8	4	7	8	6	10	-8.5%
	rate	4.0	3.6	1.5	2.1	4.2	2.1	3.7	4.2	3.2	5.3	(12.0%-101.4%)
Sanilac County	count	0	0	3	0	0	2	0	2	0	0	-36.9%
	rate	0.0	0.0	7.2	0.0	0.0	4.8	0.0	4.9	0.0	0.0	(77.0%-105.8%)
Shiawassee County	count	1	1	2	0	0	0	0	2	4	9	-11.9%
	rate	1.4	1.5	2.9	0.0	0.0	0.0	0.0	2.9	5.9	13.3	(54.0%-116.5%)
St Clair County	count	3	2	4	5	5	5	4	6	5	9	-4.3%
	rate	1.9	1.2	2.5	3.1	3.1	3.1	2.5	3.8	3.1	5.6	(22.0%-108.2%)
Tuscola County	count	1	0	0	0	0	0	1	0	1	1	-28.8%
	rate	1.8	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.9	1.9	(74.0%-111.3%)
Van Buren-Cass	count	0	0	0	3	3	2	4	4	9	7	21.6%
	rate	0.0	0.0	0.0	2.4	2.4	1.6	3.1	3.1	7.1	5.5	(81.0%-148.3%)
Washtenaw County	count	11	17	19	27	32	27	28	52	30	39	6.3%
	rate	3.1	4.8	5.3	7.4	8.7	7.3	7.6	14.1	8.2	10.6	(21.0%-113.4%)
Wayne LHD*	count	60	60	66	79	79	73	107	109	95	168	5.1%
	rate	5.5	5.5	6.1	7.3	7.3	6.7	9.9	10.1	8.8	15.6	(11.0%-108.2%)
Western UP District	count	0	0	1	1	1	4	0	0	1	3	-21.6%
	rate	0.0	0.0	1.4	1.5	1.5	5.9	0.0	0.0	1.5	4.6	(64.0%-113.3%)

*Detroit LHD refers to Detroit City and Hamtramck, Highland Park, the Grosse Points, and Harper Woods. Wayne LHD covers Western Wayne County for STIs.

Note: cases with missing data for characteristics were omitted from the respective analyses

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		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Michigan Total	count	12518	10670	9682	10645	13105	15298	16976	18304	23408	22166	
	rate	126	108	97	107	132	153	170	183	235	222	No significant change
By Age												
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Less than 15 years	count	172	103	109	84	115	108	112	96	113	121	
	rate	4.6	2.8	3.0	2.3	3.2	3.0	3.2	2.7	3.2	3.5	No significant change
15-19 years	count	3468	2730	2259	2277	2800	3241	3510	3487	4063	3665	5.3%
	rate	247.1	198.0	166.3	169.1	209.1	244.8	268.9	270.5	320.6	289.2	(1.4%-9.3%)
20-24 years	count	4556	3989	3609	3757	4181	4667	4971	5403	6802	6123	6.9%
	rate	314.9	270.4	242.7	256.1	291.3	330.7	358.2	396.4	506.0	455.5	(3.5%-10.4%)
25-29 years	count	1939	1770	1697	2145	2859	3377	3663	4124	5292	4785	12.4%
	rate	165.3	149.4	139.8	170.7	218.0	248.3	263.9	295.3	385.7	348.8	(9.4%-15.4%)
30-39 years	count	1462	1321	1275	1494	2045	2450	2997	3330	4752	5008	16.4%
	rate	63.3	57.1	54.9	64.0	86.7	103.0	124.8	137.2	193.2	203.7	(12.6%-20.3%)
40-49 years	count	620	495	472	527	696	889	1084	1143	1480	1588	16.4%
	rate	22.9	18.8	18.4	21.1	28.4	36.8	45.4	48.5	63.6	68.3	(12.0%-20.8%)
50-59 years	count	239	179	201	277	320	428	487	515	680	643	18.6%
	rate	8.1	6.1	6.8	9.5	11.2	15.2	17.7	19.1	25.6	24.2	(14.7%-22.7%)
60+ years	count	62	83	60	84	89	138	152	206	226	233	16.2%
	rate	1.5	2.0	1.4	1.9	2.0	2.9	3.2	4.2	4.5	4.7	(12.3%-20.2%)
By Race/Sex												
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
Am Indian/AN Female	count	22	19	15	9	21	22	32	27	44	49	11.0%
	rate	79.1	68.1	53.6	32.1	74.6	77.7	112.9	94.7	153.8	171.2	(3.6%-18.8%)
Am Indian/AN Male	count	5	6	7	10	20	16	24	28	34	48	26.6%
	rate	18.1	21.7	25.3	36.1	71.8	57.3	85.8	99.8	120.8	170.5	(18.2%-35.7%)
Asian/NH/PI Female	count	27	25	13	18	29	24	25	33	31	32	No significant change
	rate	19.7	17.5	8.7	11.7	18.1	14.5	14.8	19.4	18.2	18.8	
Asian/NH/PI Male	count	17	20	15	23	29	48	56	53	40	65	13.6%
	rate	13.2	14.8	10.6	15.7	18.8	30.0	34.1	32.0	24.1	39.1	(6.7%-21.0%)
Black Female	count	4011	3345	3013	2952	3519	4064	4237	4645	6109	5635	6.2%
	rate	551.0	460.7	415.6	408.1	487.1	562.3	586.1	642.6	846.7	781.0	(2.6%-10.1%)
Black Male	count	3516	2828	2840	3103	3791	4733	5242	5830	7432	6813	11.9%
	rate	534.7	431.2	433.4	474.3	579.8	724.3	803.0	894.0	1145.4	1050.0	(8.2%-15.6%)
Hispanic Female	count	149	123	119	161	200	233	236	303	440	448	13.5%
	rate	65.9	53.3	50.6	67.2	81.5	92.9	92.0	115.5	165.0	168.0	(9.5%-17.7%)
Hispanic Male	count	84	79	104	113	161	213	245	268	306	336	1390.3%
	rate	36.0	33.2	42.8	45.7	63.5	82.2	92.5	98.9	111.1	122.0	(15.0%-20.3%)
Multi/Other Female	count	95	76	72	61	91	188	265	327	485	436	23.8%
	rate	96.3	75.3	69.5	57.7	84.0	169.5	233.1	281.5	407.8	366.6	(15.0%-33.4%)
Multi/other Male	count	40	48	51	58	85	162	320	406	562	547	40.9%
	rate	42.3	49.3	51.0	56.6	80.7	149.7	288.5	357.6	482.0	469.1	(33.2%-49.1%)
White Female	count	1103	914	918	1016	1376	1740	2140	2104	2887	2990	15.3%
	rate	14.6	12.1	12.2	13.5	18.4	23.2	28.6	28.2	38.9	40.3	(11.3%-19.5%)
White Male	count	533	716	707	874	1203	1472	1618	1584	1932	2039	17.7%
	rate	14.3	19.3	19.0	23.6	32.5	39.7	43.8	43.0	52.6	55.5	(14.9%-20.5%)

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By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Allegan County	count	18	40	30	33	41	62	77	110	109	106	22.7%
	rate	16.1	35.7	26.5	28.9	35.6	53.3	65.7	93.2	91.7	89.1	(17.7%-27.8%)
Barry-Eaton	count	58	61	79	98	144	110	155	141	218	196	16.1%
	rate	34.7	36.4	47.0	58.3	85.2	64.6	90.7	82.2	126.6	113.8	(11.8%-20.6%)
Bay County	count	24	30	23	49	52	108	91	106	99	136	24.5%
	rate	22.4	28.1	21.7	46.5	49.8	103.8	87.8	102.9	96.7	132.8	(16.6%-32.9%)
Benzie-Leelanau	count	2	1	3	4	3	2	7	7	5	17	17.6%
	rate	5.2	2.6	7.7	10.3	7.7	5.1	17.8	17.7	12.6	42.9	(2.5%-34.9%)
Berrien County	count	238	184	109	206	276	285	383	303	407	531	10.9%
	rate	151.9	117.8	69.8	132.8	178.7	184.7	248.9	197.6	266.0	347.0	(4.5%-17.6%)
Branch-Hillsdale-St. Joseph	count	21	21	13	24	46	54	119	165	218	242	43.0%
	rate	13.9	13.9	8.6	16.0	30.7	36.0	79.3	110.1	145.4	161.4	(33.4%-53.4%)
Calhoun County	count	212	226	189	173	225	362	432	471	471	537	13.8%
	rate	157.3	167.7	140.2	128.7	167.5	269.9	322.7	352.0	352.6	402.0	(8.8%-19.1%)
Central Michigan District	count	31	37	20	30	41	66	67	96	125	116	22.1%
	rate	16.3	19.6	10.6	15.9	21.7	35.0	35.5	51.0	66.5	61.7	(15.6%-29.0%)
Chippewa County	count	1	4	1	1	2	3	5	4	7	12	21.8%
	rate	2.6	10.4	2.6	2.6	5.3	8.0	13.4	10.7	18.9	32.5	(4.4%-42.1%)
Delta-Menominee	count	7	4	6	8	11	9	7	9	5	4	No significant change
	rate	11.6	6.6	10.0	13.4	18.5	15.3	11.9	15.4	8.6	6.9	
Detroit City	count	5740	4331	3430	3505	4263	4795	5149	5831	7001	6152	4.9%
	rate	819.7	625.9	502.4	515.8	629.3	710.3	764.3	869.7	1052.2	924.6	(0.4%-9.7%)
Dickinson-Iron	count	5	4	0	1	11	7	3	6	4	6	No significant change
	rate	13.2	10.7	0.0	2.7	30.0	19.1	8.2	16.5	11.1	16.6	
District 2	count	4	2	2	5	7	14	16	9	13	11	23.8%
	rate	6.1	3.1	3.1	7.7	10.8	21.7	24.7	13.9	20.0	16.9	(18.8%-29.0%)
District 4	count	10	9	3	0	3	7	11	17	16	14	24.1%
	rate	12.9	11.7	3.9	0.0	3.9	9.2	14.5	22.5	21.2	18.5	(10.7%-39.3%)
District 10	count	32	19	33	48	64	67	83	89	151	167	No significant change
	rate	12.3	7.3	12.7	18.4	24.5	25.5	31.4	33.5	56.7	62.7	
Genesee County	count	1282	916	759	888	991	965	888	1102	1710	1721	No significant change
	rate	306.5	220.3	183.8	216.3	242.3	236.7	218.4	271.6	422.4	425.2	
Grand Traverse County	count	8	9	7	10	13	21	1	39	41	48	22.6%
	rate	9.0	10.0	7.7	10.9	14.1	22.8	1.1	41.9	43.8	51.3	(5.5%-42.4%)
Huron County	count	1	1	1	5	3	8	3	4	10	8	27.1%
	rate	3.1	3.1	3.1	15.7	9.5	25.6	9.6	12.9	32.6	26.1	(10.2%-46.5%)

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		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Ingham County	<i>count</i>	392	432	410	474	676	557	596	536	921	977	8.6%
	<i>rate</i>	138.2	152.0	143.5	165.0	233.4	191.0	204.6	183.9	316.9	336.2	(4.7%-12.6%)
Ionia County	<i>count</i>	7	13	9	16	15	23	18	32	54	90	25.4%
	<i>rate</i>	11.0	20.3	14.0	25.0	23.4	35.8	28.0	49.5	83.7	139.4	(17.1%-34.3%)
Jackson County	<i>count</i>	48	57	53	82	66	148	232	251	375	415	32.0%
	<i>rate</i>	30.0	35.7	33.2	51.5	41.7	93.3	146.3	158.5	239.0	264.5	(25.4%-39.0%)
Kalamazoo County	<i>count</i>	263	288	658	657	655	851	1026	1093	1226	1084	19.4%
	<i>rate</i>	103.0	111.9	254.0	252.9	250.4	323.1	387.0	411.6	460.9	407.5	(13.8%-25.3%)
Kent County	<i>count</i>	616	650	864	757	772	1108	1375	1286	1947	1826	13.4%
	<i>rate</i>	100.0	104.1	136.8	118.8	119.8	170.5	210.4	195.8	295.6	277.2	(9.9%-17.0%)
Lapeer County	<i>count</i>	17	9	8	12	13	27	27	33	41	38	20.5%
	<i>rate</i>	19.3	10.2	9.1	13.6	14.7	30.6	30.7	37.6	46.8	43.4	(13.5%-27.9%)
Lenawee County	<i>count</i>	33	21	11	18	54	47	44	83	112	74	22.0%
	<i>rate</i>	33.3	21.2	11.1	18.3	54.8	47.7	44.8	84.2	114.5	75.7	(11.2%-33.8%)
Livingston County	<i>count</i>	17	23	25	35	25	44	49	46	67	49	15.7%
	<i>rate</i>	9.3	12.5	13.5	18.7	13.3	23.2	25.6	24.0	34.8	25.5	(10.8%-20.9%)
Luce-Mack-Alger-School	<i>count</i>	2	7	1	0	3	10	8	10	1	5	No significant change
	<i>rate</i>	5.7	19.9	2.9	0.0	8.8	29.2	23.4	29.2	2.9	14.7	
Macomb County	<i>count</i>	528	592	483	518	814	920	1103	1174	1434	1401	14.3%
	<i>rate</i>	62.1	69.1	56.0	59.9	93.7	105.6	126.5	134.6	164.7	160.9	(10.5%-18.1%)
Marquette County	<i>count</i>	2	7	18	8	8	8	6	7	12	17	No significant change
	<i>rate</i>	2.9	10.3	26.5	11.9	12.0	12.0	9.0	10.5	18.2	25.8	
Mid-Michigan District	<i>count</i>	49	31	36	38	67	69	86	100	156	161	19.1%
	<i>rate</i>	27.0	17.1	19.9	21.0	36.9	37.7	46.8	54.3	85.0	87.7	(13.2%-25.3%)
Midland County	<i>count</i>	20	10	11	11	26	46	26	40	40	35	17.2%
	<i>rate</i>	23.9	11.9	13.2	13.1	31.1	55.1	31.2	48.0	47.9	41.9	(7.2%-28.2%)
Monroe County	<i>count</i>	71	79	50	54	72	82	99	114	173	70	11.5%
	<i>rate</i>	47.1	52.6	33.4	36.1	48.2	54.8	65.9	75.8	114.9	46.5	(5.7%-17.5%)

Annual Review of STI Trends in Michigan, 2012 - 2021 - Gonorrhea

By residence at diagnosis (local health jurisdiction)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	average 1-year change
<i>rates displayed per 100,000 population</i>												
Muskegon County	<i>count</i>	349	205	264	411	496	560	608	577	680	775	12.8%
	<i>rate</i>	205.1	119.0	153.2	238.3	286.1	322.2	350.0	332.3	391.1	445.7	(7.6%-18.3%)
Northwest MI Com Hlth Agency	<i>count</i>	9	16	6	10	4	10	20	12	23	31	No significant change
	<i>rate</i>	8.5	15.0	5.6	9.4	3.8	9.3	18.6	11.2	21.4	28.8	
Oakland County	<i>count</i>	825	877	622	734	1026	1142	1327	1293	1709	1531	10.0%
	<i>rate</i>	67.4	71.0	50.0	59.0	82.0	90.9	105.5	102.8	136.3	122.1	(5.9%-14.2%)
Ottawa County	<i>count</i>	75	94	82	82	115	135	182	160	201	257	12.6%
	<i>rate</i>	27.7	34.3	29.5	29.2	40.5	47.1	62.9	54.9	68.2	87.2	(9.3%-16.1%)
Saginaw County	<i>count</i>	248	270	336	362	410	392	547	724	749	655	16.0%
	<i>rate</i>	125.0	137.2	172.0	187.2	212.8	204.2	286.6	380.1	394.5	345.0	(13.4%-18.5%)
Sanilac County	<i>count</i>	4	0	4	4	4	9	9	4	11	20	19.6%
	<i>rate</i>	9.5	0.0	9.6	9.6	9.7	21.8	21.8	9.7	27.0	49.1	(6.6%-34.2%)
Shiawassee County	<i>count</i>	14	7	16	20	20	26	24	21	56	68	19.0%
	<i>rate</i>	20.2	10.2	23.2	29.2	29.2	38.0	35.3	30.9	82.7	100.4	(10.4%-28.2%)
St Clair County	<i>count</i>	64	55	30	35	74	56	72	89	142	158	11.7%
	<i>rate</i>	39.8	34.3	18.7	21.9	46.4	35.2	45.2	55.9	89.1	99.2	(3.8%-20.2%)
Tuscola County	<i>count</i>	7	15	7	8	13	21	19	18	18	11	12.1%
	<i>rate</i>	12.8	27.7	13.0	14.9	24.4	39.8	36.1	34.4	34.4	21.0	(4.6%-20.2%)
Van Buren-Cass	<i>count</i>	46	46	40	53	48	121	143	127	155	141	20.9%
	<i>rate</i>	36.2	36.2	31.5	41.9	37.9	95.4	112.4	99.7	122.0	111.0	(14.0%-28.2%)
Washtenaw County	<i>count</i>	298	230	260	345	416	569	524	574	619	528	12.6%
	<i>rate</i>	84.5	64.5	72.1	94.9	113.4	153.9	141.4	155.9	168.9	144.1	(8.9%-16.4%)
Wayne County	<i>count</i>	826	749	686	813	1018	1373	1260	1386	1873	1699	12.4%
	<i>rate</i>	75.4	68.8	63.0	74.9	94.0	126.8	116.4	128.4	174.2	158.0	(8.9%-16.0%)
Western UP District	<i>count</i>	3	5	6	11	9	10	11	7	6	11	No significant change
	<i>rate</i>	4.3	7.2	8.7	16.1	13.2	14.7	16.3	10.7	9.2	16.9	

*Detroit LHD refers to Detroit City and Hamtramck, Highland Park, the Grosse Points, and Harper Woods. Wayne LHD covers Western Wayne County for STIs.

Note: cases with missing data for characteristics were omitted from the respective analyses

Appendix: LHD Population Estimates (from the Census Bureau's annual American Community Survey)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*
<i>Michigan</i>	9,898,289	9,914,802	9,932,033	9,934,483	9,954,117	9,976,752	9,987,286	9,984,795	9,966,555	9,966,555
Allegan County	111,506	112,020	113,361	114,122	115,018	116,393	117,137	118,045	118,927	118,927
Barry-Eaton	167,038	167,382	167,973	168,135	169,021	170,168	170,879	171,600	172,209	172,209
Bay County	106,980	106,817	106,073	105,271	104,421	104,085	103,674	102,964	102,387	102,387
Benzie-Leelanau	38,699	38,815	39,062	39,019	39,031	39,263	39,410	39,459	39,595	39,595
Berrien County	156,669	156,205	156,074	155,136	154,451	154,264	153,892	153,352	153,025	153,025
Branch-Hillsdale-St. Joseph	151,047	150,707	150,684	150,338	150,001	149,879	149,991	149,818	149,930	149,930
Calhoun County	134,755	134,782	134,845	134,377	134,343	134,127	133,858	133,806	133,580	133,580
Central Michigan District	190,029	189,156	188,900	189,030	188,862	188,838	188,567	188,273	188,104	188,104
Chippewa County	39,006	38,587	38,275	37,998	37,724	37,699	37,423	37,287	36,958	36,958
Delta-Menominee	60,576	60,540	60,127	59,925	59,434	58,914	58,795	58,516	58,220	58,220
Detroit City	700,289	691,986	682,746	679,562	677,379	675,031	673,658	670,442	665,369	665,369
Dickinson-Iron	37,745	37,530	37,262	37,002	36,699	36,565	36,525	36,389	36,178	36,178
District 2	65,956	65,512	65,158	64,838	64,757	64,608	64,684	64,948	64,936	64,936
District 4	77,512	76,929	76,808	76,219	76,050	75,859	75,968	75,628	75,605	75,605
District 10	261,077	260,711	260,852	261,013	261,623	263,174	264,613	265,426	266,442	266,442
Genesee County	418,243	415,713	412,950	410,574	409,054	407,673	406,626	405,702	404,794	404,794
Grand Traverse County	89,238	90,149	90,908	91,610	92,076	91,914	92,587	93,032	93,592	93,592
Huron County	32,449	32,251	32,034	31,761	31,471	31,304	31,193	30,904	30,653	30,653
Ingham County	283,592	284,226	285,760	287,255	289,633	291,678	291,267	291,426	290,609	290,609
Ionia County	63,890	64,001	64,246	64,073	64,215	64,293	64,290	64,654	64,553	64,553
Jackson County	159,988	159,672	159,464	159,325	158,345	158,653	158,594	158,357	156,920	156,920
Kalamazoo County	255,413	257,399	259,063	259,816	261,584	263,387	265,120	265,531	265,988	265,988
Kent County	615,871	624,409	631,464	637,333	644,219	649,722	653,636	656,800	658,708	658,708
Lapeer County	88,200	88,299	88,202	88,376	88,227	88,218	87,987	87,808	87,635	87,635
Lenawee County	99,041	98,850	98,774	98,432	98,595	98,511	98,118	98,519	97,808	97,808
Livingston County	182,805	184,238	185,567	187,221	188,585	189,923	191,259	192,058	192,335	192,335
Luce-Mack-Alger-School	35,349	35,211	34,906	34,628	34,135	34,292	34,238	34,232	34,084	34,084
Macomb County	849,761	857,146	862,914	865,031	868,329	870,867	872,089	872,389	870,791	870,791
Marquette County	67,840	67,792	67,798	67,357	66,563	66,524	66,406	66,689	65,834	65,834
Midland County	83,743	83,683	83,534	83,706	83,485	83,442	83,447	83,412	83,441	83,441
Mid-Michigan District	181,246	181,559	181,255	181,148	181,564	183,081	183,665	184,004	183,512	183,512
Monroe County	150,835	150,193	149,919	149,439	149,278	149,523	150,218	150,412	150,568	150,568
Muskegon County	170,191	172,312	172,304	172,506	173,342	173,804	173,719	173,645	173,883	173,883
Northwest MI Com Hlth Agency	106,300	106,423	106,464	106,395	106,634	107,127	107,429	107,562	107,661	107,661
Oakland County	1,223,723	1,235,656	1,243,076	1,244,895	1,251,563	1,256,478	1,257,472	1,257,726	1,253,459	1,253,459
Ottawa County	270,868	274,394	277,888	280,907	283,686	286,452	289,578	291,460	294,635	294,635
Saginaw County	198,409	196,859	195,317	193,384	192,636	192,002	190,841	190,484	189,868	189,868
Sanilac County	42,306	41,902	41,663	41,463	41,438	41,257	41,233	41,220	40,747	40,747
Shiawassee County	69,345	68,927	68,841	68,538	68,589	68,422	68,064	68,065	67,738	67,738
St Clair County	160,637	160,312	160,103	159,757	159,477	159,130	159,186	159,339	159,293	159,293
Tuscola County	54,705	54,214	53,921	53,723	53,260	52,817	52,692	52,355	52,289	52,289
Van Buren-Cass	127,127	126,936	126,836	126,457	126,609	126,830	127,207	127,441	127,058	127,058
Washtenaw County	352,685	356,474	360,523	363,555	366,960	369,703	370,548	368,242	366,473	366,473
Wayne County	1,095,508	1,088,145	1,088,880	1,085,304	1,083,456	1,082,843	1,082,210	1,079,651	1,075,254	1,075,254
Western UP District	70,097	69,778	69,259	68,529	68,295	68,015	67,293	65,723	64,907	64,907

*2021 population estimates are based on 2020 data released by American Community Survey