

Michigan Resident Cancer Incidence File Tables 1 & 2

Table 1 - Michigan Comparison
 Numbers of Invasive Cancer Cases Observed and Expected
 Residents of Select Muskegon County Census Tracts

Year of Diagnosis	Census Tract 37					Census Tracts 38 and 39				
	Observed	Expected	SIR	LCI	UCI	Observed	Expected	SIR	LCI	UCI
1985	27	22.85	1.18	0.83	1.63	15	18.46	0.81	0.50	1.25
1986	28	22.79	1.23	0.87	1.68	26	18.41	1.41	0.99	1.96
1987	25	23.54	1.06	0.74	1.48	13	19.00	0.68	0.40	1.09
1988	24	23.72	1.01	0.70	1.42	17	19.09	0.89	0.57	1.34
1989	35	25.60	1.37 ¹	1.01	1.81	15	20.49	0.73	0.45	1.13
1990	32	32.26	0.99	0.72	1.33	10	25.04	0.40 ³	0.22	0.68
1991	39	34.24	1.14	0.86	1.49	32	26.49	1.21	0.88	1.62
1992	26	34.27	0.76	0.53	1.05	26	26.62	0.98	0.68	1.36
1993	27	32.96	0.82	0.58	1.13	25	25.73	0.97	0.68	1.36
1994	23	31.55	0.73	0.50	1.03	33	24.73	1.33	0.98	1.78
1995	38	30.86	1.23	0.92	1.61	37	24.24	1.53 ¹	1.14	2.01
1996	35	30.87	1.13	0.84	1.50	33	24.28	1.36	0.99	1.82
1997	34	31.41	1.08	0.80	1.44	28	24.67	1.13	0.81	1.56
1998	25	31.70	0.79	0.55	1.10	31	24.89	1.25	0.90	1.68
1999	29	32.14	0.90	0.65	1.23	38	25.30	1.50 ¹	1.12	1.97
2000	36	34.87	1.03	0.77	1.36	37	31.75	1.17	0.87	1.53
2001	38	36.08	1.05	0.79	1.38	33	33.07	1.00	0.73	1.33
2002	36	37.49	0.96	0.71	1.27	38	34.59	1.10	0.82	1.44
2003	32	38.89	0.82	0.60	1.11	37	36.04	1.03	0.77	1.35
2004	43	38.87	1.11	0.84	1.43	25	36.42	0.69 ²	0.48	0.96
2005	39	35.70	1.09	0.82	1.43	36	33.57	1.07	0.80	1.42
2006	36	36.74	0.98	0.73	1.29	29	34.96	0.83	0.59	1.13
2007	24	37.99	0.63 ²	0.44	0.89	31	35.57	0.87	0.63	1.18
2008	37	36.56	1.01	0.75	1.33	26	34.27	0.76	0.53	1.05
2009	24	37.05	0.65 ²	0.45	0.91	36	34.29	1.05	0.78	1.39
2010	38	37.71	1.01	0.75	1.32	35	34.99	1.00	0.74	1.33
2011	36	38.05	0.95	0.70	1.25	44	35.35	1.24	0.95	1.60
2012	41	35.74	1.15	0.87	1.49	39	33.90	1.15	0.87	1.50
2013	35	35.09	1.00	0.74	1.32	34	33.32	1.02	0.75	1.36
2014	29	35.36	0.82	0.59	1.12	33	33.22	0.99	0.73	1.33
2015	42	36.06	1.16	0.89	1.51	31	33.74	0.92	0.67	1.24
2016	33	36.97	0.89	0.65	1.19	36	34.32	1.05	0.78	1.39
2017	25	35.90	0.70	0.48	0.97	24	33.82	0.71	0.49	1.00
2018	36	35.85	1.00	0.75	1.33	30	33.79	0.89	0.64	1.20

Date : September 3, 2021. For more information, see Key below Table 2.

Table 2 - Muskegon County Comparison
 Numbers of Invasive Cancer Cases Observed and Expected
 Residents of Select Muskegon County Census Tracts

Year of Diagnosis	Census Tract 37					Census Tracts 38 and 39				
	Observed	Expected	SIR	LCI	UCI	Observed	Expected	SIR	LCI	UCI
1985	27	22.04	1.23	0.86	1.69	15	18.18	0.82	0.51	1.27
1986	28	25.25	1.11	0.79	1.52	26	20.58	1.26	0.89	1.75
1987	25	25.05	1.00	0.69	1.39	13	20.65	0.63	0.37	1.00
1988	24	23.25	1.03	0.71	1.45	17	18.93	0.90	0.57	1.35
1989	35	24.83	1.41 ¹	1.04	1.87	15	20.04	0.75	0.46	1.15
1990	32	30.17	1.06	0.77	1.42	10	23.37	0.43 ³	0.23	0.73
1991	39	33.42	1.17	0.88	1.52	32	25.73	1.24	0.91	1.67
1992	26	33.50	0.78	0.54	1.08	26	26.16	0.99	0.70	1.38
1993	27	33.32	0.81	0.57	1.12	25	25.86	0.97	0.67	1.35
1994	23	31.33	0.73	0.50	1.04	33	24.80	1.33	0.97	1.78
1995	38	31.42	1.21	0.91	1.59	37	24.49	1.51 ¹	1.13	1.99
1996	35	32.01	1.09	0.81	1.45	33	25.63	1.29	0.94	1.72
1997	34	30.23	1.12	0.83	1.50	28	23.78	1.18	0.84	1.61
1998	25	31.09	0.80	0.56	1.12	31	24.46	1.27	0.92	1.71
1999	29	34.13	0.85	0.61	1.16	38	27.14	1.40 ¹	1.05	1.84
2000	36	37.69	0.96	0.71	1.26	37	34.58	1.07	0.80	1.41
2001	38	37.25	1.02	0.76	1.34	33	34.28	0.96	0.70	1.29
2002	36	41.37	0.87	0.65	1.15	38	38.67	0.98	0.74	1.29
2003	32	41.28	0.78	0.56	1.04	37	37.71	0.98	0.73	1.29
2004	43	41.39	1.04	0.79	1.34	25	38.74	0.65 ²	0.45	0.90
2005	39	38.59	1.01	0.76	1.32	36	36.34	0.99	0.74	1.31
2006	36	38.30	0.94	0.70	1.24	29	36.53	0.79	0.57	1.08
2007	24	31.06	0.77	0.53	1.09	31	28.97	1.07	0.77	1.44
2008	37	35.22	1.05	0.78	1.38	26	32.80	0.79	0.56	1.10
2009	24	37.12	0.65 ²	0.45	0.91	36	34.39	1.05	0.78	1.38
2010	38	37.42	1.02	0.76	1.33	35	34.79	1.01	0.74	1.33
2011	36	40.08	0.90	0.67	1.19	44	37.23	1.18	0.90	1.52
2012	41	36.26	1.13	0.86	1.47	39	34.30	1.14	0.86	1.49
2013	35	35.65	0.98	0.73	1.30	34	33.88	1.00	0.74	1.34
2014	29	35.94	0.81	0.58	1.10	33	33.85	0.97	0.71	1.30
2015	42	36.32	1.16	0.88	1.50	31	33.84	0.92	0.66	1.24
2016	33	36.81	0.90	0.66	1.20	36	34.27	1.05	0.78	1.39
2017	25	35.20	0.71 ²	0.49	0.99	24	33.12	0.72	0.50	1.02
2018	36	34.45	1.04	0.78	1.38	30	32.48	0.92	0.66	1.25

Date: September 3, 2021. For more information, see Key below.

Source : Michigan Resident Cancer Incidence File. Includes cases diagnosed in 1985 - 2018 and processed by the Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics by November 30, 2020.

Expected numbers of cases were calculated by applying the age- and sex-specific incidence rates for Michigan residents to the age- and sex-specific census tract population estimates. Census tract populations for 1980 were used for 1985 -1989, and 1990 tract populations were used for 1990 - 1999.

1 Ratio of observed to expected cases was significantly higher than 1.00 ($p < .05$).

2 Ratio of observed to expected cases was significantly lower than 1.00 ($p < .05$).

3 Ratio of observed to expected cases was significantly lower than 1.00 ($p < .01$).

In the above tables:

SIR = Standard Incidence Ratio.

As explained in the fact sheet, "[Explanation of Standardized Incidence Ratios](#)" (New Jersey Department of Health & Senior Services Cancer Epidemiology Services):

A Standardized Incidence Ratio (SIR) is used to determine if the occurrence of cancer in a relatively small population is high or low. An SIR analysis can tell us if the number of observed cancer cases in a particular geographic area is higher or lower than expected, given the population and age distribution for that community.

The SIR is obtained by dividing the observed number of cases of cancer by the "expected" number of cases. The expected number is the number of cases that would occur in a community if the disease rate in a larger reference population (usually the state or country) occurred in that community. Since cancer rates increase strongly with age, the SIR takes into account whether a community's population is older or younger than the reference population.

The expected number is calculated by multiplying each age-specific cancer incidence rate of the reference population by each age-specific population of the community in question and then adding up the results. If the observed number of cancer cases equals the expected number, the SIR is 1. If more cases are observed than expected, the SIR is greater than 1. If fewer cases are observed than expected, the SIR is less than 1.

LCI = Lower Limit of the Confidence Interval

UCI = Upper limit of the Confidence Interval

As explained in [How To Interpret "Cancer Rates by Census Tract"](#) (Delaware Department of Health and Social Services):

A confidence interval is a range of values that shows where the cancer rate could reasonably be. This means that the cancer rate could be anywhere between the lower confidence limit and the upper confidence limit.

If the difference between the upper confidence limit and lower confidence limit is big, there is a lot of uncertainty in the cancer rate. If the difference between the upper confidence limit and lower confidence limit is very small, there is not much uncertainty in the cancer rate at all.

The width of a confidence interval depends on two things: (a) the number of people living in that area and (b) the number of cancer cases diagnosed in that area.

When a cancer rate is calculated for a small area (like a census tract or a neighborhood block), usually a small number of people live in that area. An even smaller number of people in that area will have been diagnosed with cancer. When a cancer rate is calculated for a small area, the cancer rate has a lot of uncertainty because researchers do not have very much information to work with. Cancer rates for small areas will probably have very wide confidence intervals.