Cancer Statistics

in Metropolitan Detroit 2015

Metropolitan Detroit Cancer Surveillance System
Surveillance, Epidemiology and End Results Program

December 2015

MDCSS

Metropolitan Detroit Cancer Surveillance System

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Metropolitan Detroit Cancer Surveillance System (MDCSS) and Surveillance, Epidemiology and End Results (SEER) Cancer Program Description and Goals

Program Description

The Metropolitan Detroit Cancer Surveillance System (MDCSS) has been recording data on cancer in Wayne, Oakland and Macomb Counties since 1973. Cancer is a reportable disease under State of Michigan law. The MDCSS is the arm of the Michigan Department of Health and Human Services (MDHHS) responsible for the collection and reporting of cancer data for residents of the tri-county area. The MDCSS is also one of 20 cancer registries in the United States providing cancer data to the National Cancer Institute as part of the Surveillance, Epidemiology and End Results (SEER) Program. The SEER Program was established pursuant to the National Cancer Act of 1971. The MDCSS is a founding participant in that program and is now completing its 43rd year of data collection as a SEER Registry.

The MDCSS has a staff of more than 50 people who collect data from hospitals, laboratories, radiation centers and other facilities that serve cancer patients. A follow-up program tracks more than 95% of the cancer survivors diagnosed since 1973, providing yearly updates on their vital status. Funding for the registry is provided by the National Cancer Institute to Wayne State University. Additional funding for research studies is provided by the National Cancer Institute and other agencies through grants and contracts and distributed to university, state and national researchers investigating cancer-related topics. Strict rules are in place to preserve the confidentiality of individual patient information and the hospitals and physicians who provide these data.

Program Goals

The national SEER Program collects cancer data on approximately 28% of the United States population. Participating registries are chosen in part for the special populations represented within their borders. The Detroit tri-county area is an ideal location because of its urban, industrial setting and diverse population. The goals of the Detroit SEER Program are to:

1. Assemble and report estimates of cancer incidence, survival and mortality in the tri-county area.
2. Monitor annual cancer trends to identify unusual changes in specific forms of cancer in population subgroups.
3. Provide information on changes over time in the extent of disease at diagnosis, therapy and patient survival.
4. Promote and conduct studies designed to identify factors leading to cancer causes, prevention and control.
5. Respond to requests from individuals and organizations for data on cancer in the tri-county area.

Over the past 43 years, we have seen remarkable improvements in cancer diagnosis and therapy. Early detection leads to improved survival. In fact, mortality from cancer has decreased in recent years, which is most likely due to early detection and better therapies.

Geographic Coverage Area: Metropolitan Detroit

The MDCSS and the Metropolitan Detroit SEER Program provide reporting for Wayne, Oakland and Macomb counties in southeastern Michigan. These three counties are home to 3,957,531 people, approximately 39% of the total state population. There are 1,810,646 individuals residing in Wayne County, 38% of those in the City of Detroit, which has a population of 680,250. Oakland County residents number 1,266,802 and Macomb County has the smallest population of the three, with 880,083 residents. About 68% of the population in the tri-county area are Caucasian and 26% African American. An additional 6% of the population are of other races, primarily Asian and Native American or are multiracial. Persons of Hispanic origin made up about 4% of the total population (Annual Estimates of Resident Population, U.S. Census Bureau, 2014). The tri-county area also has great ethnic diversity, which includes groups of Polish-, German-, Italian-, and Arab-Americans.

In 2013, there were 24,067 new invasive and in situ cancers diagnosed in residents of the Metropolitan Detroit (tri-county) area. This is about half the number reported for the entire state. Because of the large population encompassed in the Metropolitan Detroit area and the diversity found here, the MDCSS is especially vital to both State of Michigan and National cancer statistics reporting.

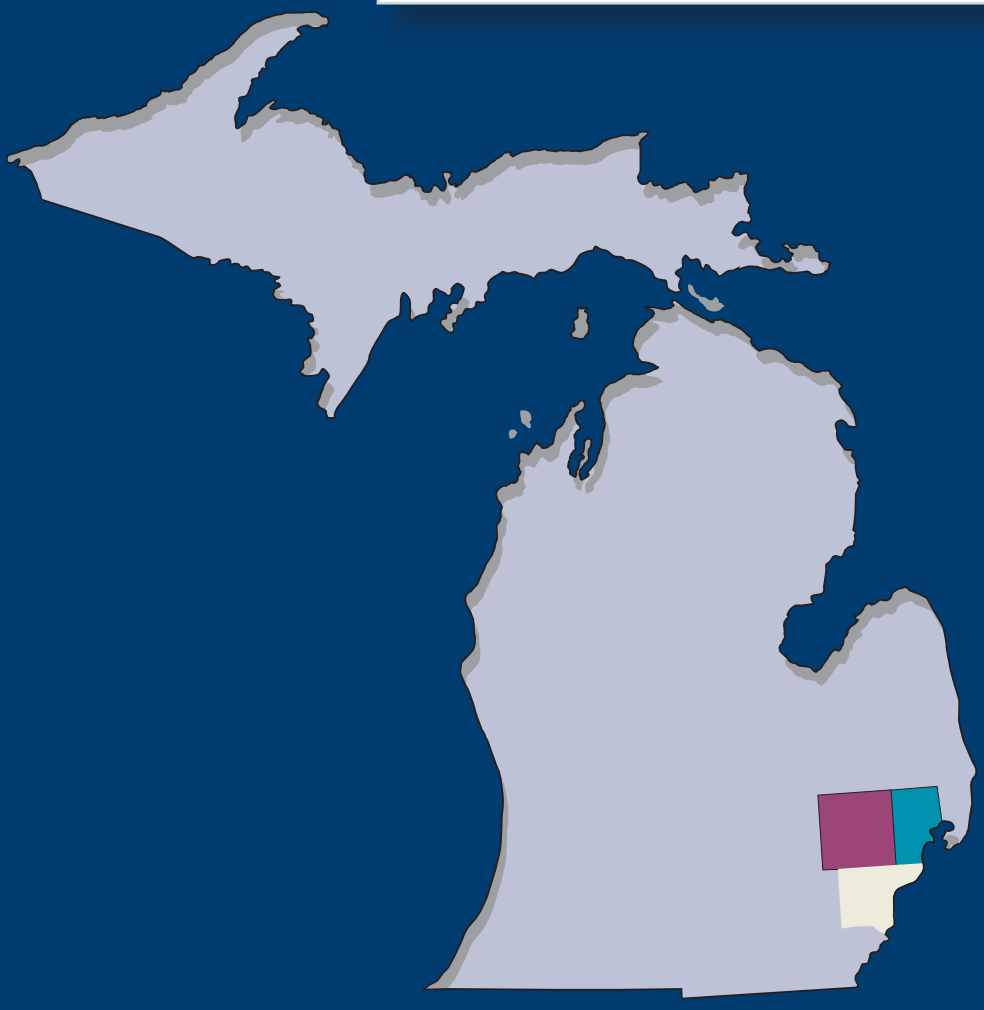
Newly Diagnosed Invasive and In Situ Cancers in the Metropolitan Detroit Area (2013)

11,056 New Cancers **Wayne County**

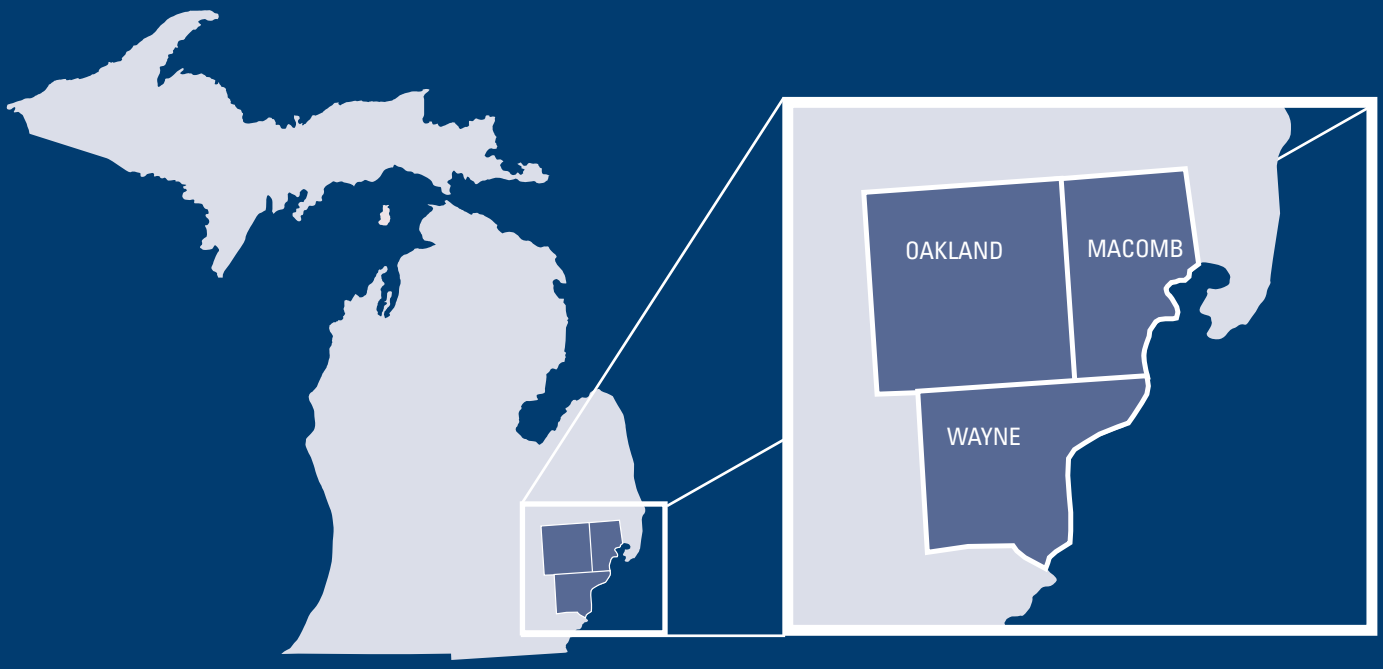
7,651 New Cancers **Oakland County**

5,360 New Cancers **Macomb County**

24,067 Total



Population by Age, Sex, Race and Ethnicity in Metropolitan Detroit, 2013



	WHITE		BLACK		AMERICAN INDIAN/ ALASKA NATIVE		ASIAN OR PACIFIC ISLANDER		HISPANIC*		ALL RACES	
AGE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
00-04 years	73,110	69,643	37,633	35,990	769	774	6,187	6,061	8,771	8,394	117,699	112,468
05-09 years	79,719	76,300	36,174	34,945	768	850	7,298	6,939	9,161	8,904	123,959	119,034
10-14 years	87,109	82,712	38,349	37,104	866	848	6,917	6,790	8,464	8,359	133,241	127,454
15-19 years	85,540	80,011	39,787	39,153	851	881	5,758	5,143	7,329	7,093	131,936	125,188
20-24 years	80,006	77,488	42,303	44,847	839	920	4,984	5,011	6,700	6,205	128,132	128,266
25-29 years	81,372	79,192	29,547	34,529	716	693	6,185	6,272	6,179	5,795	117,820	120,686
30-34 years	81,521	79,935	26,275	32,899	666	743	6,446	7,567	6,761	6,373	114,908	121,144
35-39 years	77,670	76,582	26,234	34,109	681	706	7,081	8,005	6,528	6,059	111,666	119,402
40-44 years	91,231	89,960	30,770	39,302	699	854	7,483	7,889	5,725	5,593	130,183	138,005
45-49 years	98,629	98,957	29,071	35,832	747	805	6,309	6,125	4,686	4,525	134,756	141,719
50-54 years	108,416	109,305	28,902	36,176	700	824	5,144	4,933	3,919	3,889	143,162	151,238
55-59 years	103,245	106,826	28,796	36,064	680	718	4,125	4,309	3,099	3,195	136,846	147,917
60-64 years	84,222	88,234	22,926	30,957	446	582	3,151	3,692	2,249	2,373	110,745	123,465
65-69 years	63,427	69,735	16,641	22,548	307	366	2,581	3,018	1,495	1,577	82,956	95,667
70-74 years	44,035	52,122	10,769	14,886	193	225	1,904	1,977	920	1,114	56,901	69,210
75-79 years	29,442	39,876	6,599	10,995	93	141	1149	1193	609	842	37,283	52,205
80-84 years	22,790	35,409	4,809	8,865	59	107	526	704	480	716	28,184	45,085
85+ years	22,183	45,076	4,512	10,116	50	141	391	683	423	683	27,136	56,016
Total	1,313,667	1,357,363	460,097	539,317	10,130	11,178	83,619	86,311	83,498	81,689	1,867,513	1,994,169

Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Populations -

Total U.S. (1990-2013) <Katrina/Rita Adjustment> - Linked To County Attributes - Total U.S., 1969-2013 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released October 2014.

*Note: Persons of Hispanic origin may be of any race, therefore Hispanic counts not added to totals.

Cancer Trends, Incidence, Mortality and Survival in Metropolitan Detroit

MDCSS

Metropolitan Detroit Cancer Surveillance System

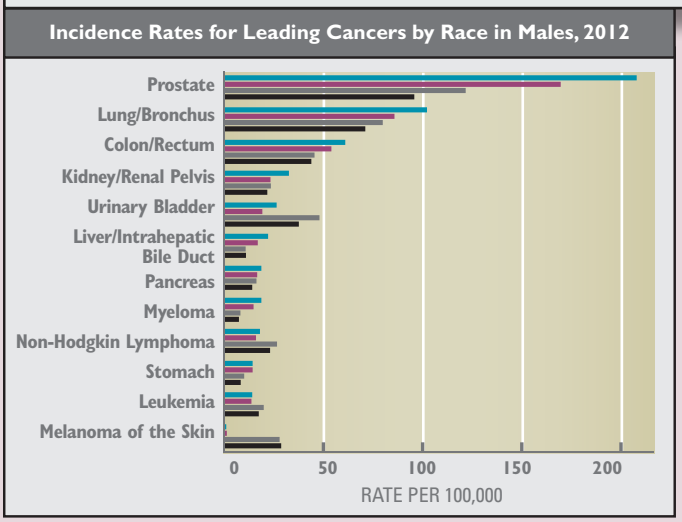
Leading Cancers in Metropolitan Detroit

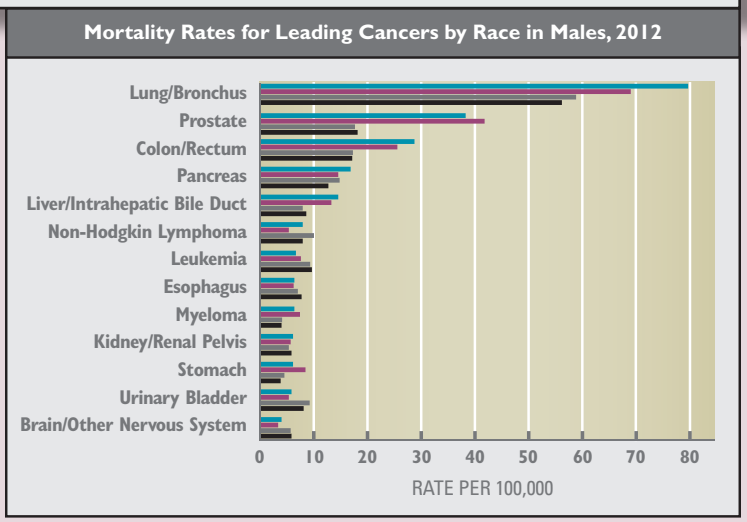
Graphs of leading cancers provide a quick comparison of the rates for various cancers and how they differ between incidence (new cancers) and mortality (cancer deaths). For example, while Prostate cancer is the leading incident cancer in men and Breast in women, Lung cancer is the top killer in both men and women.

The graphs also show racial disparities within the Detroit Metropolitan area and the U.S. as a whole. Incidence among males and mortality among both males and females is higher in African Americans. for most cancers. However, renal cancer is the fourth most common cancer for African Americans, but bladder cancer is fourth most for Caucasian men, and higher in Caucasians than in African Americans for both men and women. Breast cancer incidence is slightly higher in Caucasian women, but breast cancer mortality is higher in African American women. The same is the case for uterine cancer. Thyroid and ovarian cancers incidence is higher in Caucasian women, as is ovarian cancer mortality. This makes Metropolitan Detroit an important area in which to study racial disparities in cancer incidence, mortality and survival. As seen later in this monograph, the MDCSS and local SEER Program have partnered with scientists and contribute to a tremendous portfolio of cancer epidemiology and genetic racial disparities research.

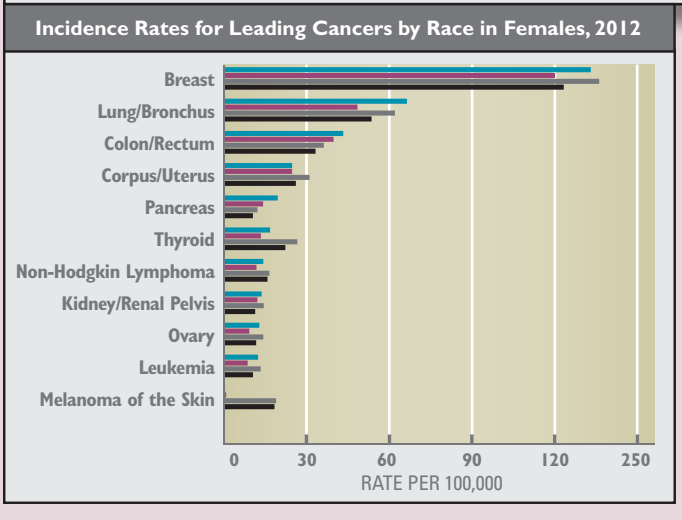
Incidence and mortality rates are generally higher in the Detroit area compared with the U.S. as a whole. Notable exceptions for which rates in the Detroit area are lower include: prostate cancer mortality in both Caucasians and African Americans, breast cancer mortality for African American women, and liver cancer mortality in both Caucasian and African American males and Caucasian females.

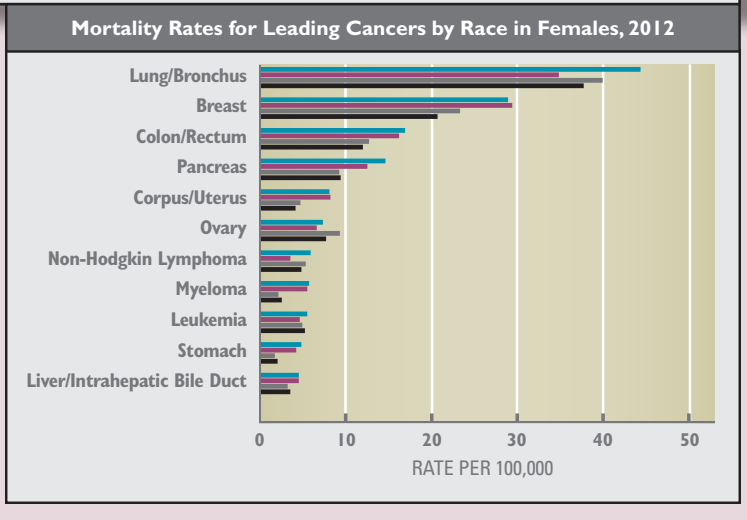
African American Males Metro Detroit | African American Males U.S. | Caucasian Males Metro Detroit | Caucasian Males U.S.





African American Females Metro Detroit | African American Females U.S. | Caucasian Females Metro Detroit | Caucasian Females U.S.





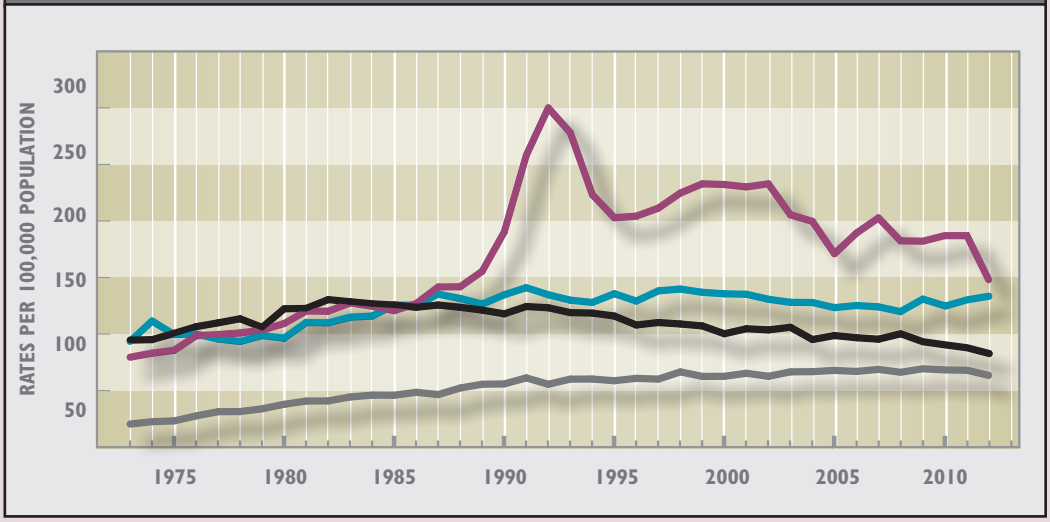
Temporal Trends in Metropolitan Detroit

Incidence rates for prostate cancer peaked in 1992, but have remained high due to increased detection through the PSA (prostate specific antigen) test.

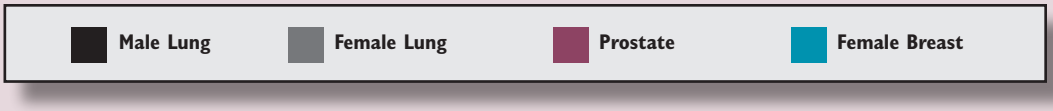
Preliminary MDCSS data for 2013 appear to show the sharp decrease in incidence in 2012 to be consistent. This decline is most likely due to a decrease in PSA screening following publication of results from screening trials that eventually led the U.S. Preventive Services Task Force to recommend against routine prostate screening in 2012. Female breast cancer incidence rates have remained steady since the late 1980's. Mammography screening has played an important role in the early diagnosis of this cancer. While rates of lung cancer have been declining among males since the mid 1990's, rates among females are only now leveling off.

Lung cancer has been the leading cause of cancer mortality among males since 1973, but it has declined somewhat since 1992. Mortality among females from lung cancer rose until 2008, reflecting an increase in smoking, but has declined slightly in recent years. Mortality rates for prostate and female breast cancer have declined slightly over time.

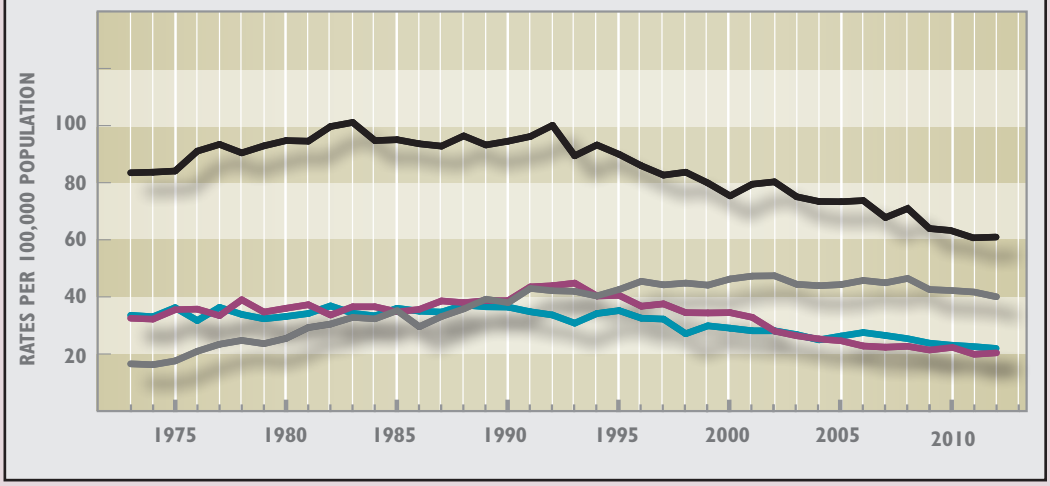
Age-Adjusted Incidence for Invasive Lung & Bronchus, Prostate & Female Breast Cancers, Metropolitan Detroit, 1973 – 2012



Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database Incidence - SEER 9 Regs Research Data, Nov 2014 Sub (1973-2012) <Katrina/Rita Population Adjustment> - Linked To County Attributes - Total U.S., 1969-2013 Counties, National Cancer Institute, DCCPS, Surveillance Research ProgramSurveillance Systems Branch, released April 2015, based on the November 2014 submission.



Age-Adjusted Mortality Rates for Invasive Lung & Bronchus, Prostate & Female Breast Cancers, Metropolitan Detroit, 1973 – 2012



Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Mortality - All COD, Aggregated With State, Total U.S. (1969-2012) <Katrina/Rita Population Adjustment>, National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released April 2015. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

Cancer Incidence, Mortality and Age Adjusted Rates per 100,000 Population by Site, Race and Sex, Metropolitan Detroit, 2012

All Races	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Sites	21,891	11,001	10,890	491.7	551.9	450.6	7,954	4,037	3,917	177.6	213.8	153.1
Oral Cavity and Pharynx	511	365	146	11.1	17.2	5.9	126	84	42	2.7	4.2	1.6
Lip	10	*	*	0.3	*	0.3	0	0	0	0.0	0.0	0.0
Tongue	152	112	40	3.2	5.1	1.6	38	24	14	0.8	1.2	0.5
Salivary Gland	53	33	20	1.3	1.7	0.9	11	*	*	0.3	*	*
Floor of Mouth	40	28	12	0.8	1.3	0.4	*	*	0	*	*	0.0
Gum and Other Mouth	68	36	32	1.5	1.7	1.3	16	*	*	0.4	*	*
Nasopharynx	16	10	6	0.4	0.5	0.3	*	*	*	*	*	*
Tonsil	78	68	10	1.7	3.1	0.4	*	*	*	*	*	*
Oropharynx	30	21	9	0.6	0.9	0.4	16	*	*	0.4	0.6	*
Hypopharynx	36	27	9	0.8	1.3	0.4	*	*	*	*	*	*
Other Oral Cavity and Pharynx	28	*	*	0.6	1.1	*	22	*	*	0.4	0.6	*
Digestive System	3,946	2,142	1,804	87.6	107.6	71.6	2,010	1,126	884	44.2	57.8	33.7
Esophagus	212	165	47	4.7	8.2	1.9	174	131	43	3.8	6.8	1.6
Stomach	347	212	135	7.7	10.7	5.5	156	92	64	3.4	4.8	2.4
Small Intestine	104	64	40	2.4	3.3	1.7	11	*	*	0.2	*	*
Colon and Rectum	1,890	936	954	42.5	48.4	37.9	722	362	360	16.0	19.1	13.7
Colon excluding Rectum	1,333	630	703	30.2	33.1	27.8	560	268	292	12.4	14.2	11.1
Cecum	304	144	160	6.9	7.4	6.4	†	†	†	†	†	†
Appendix	27	11	16	0.7	0.6	0.7	†	†	†	†	†	†
Ascending Colon	262	110	152	6.0	5.9	6.1	†	†	†	†	†	†
Hepatic Flexure	45	27	18	1.0	1.5	0.6	†	†	†	†	†	†
Transverse Colon	145	67	78	3.2	3.5	3.0	†	†	†	†	†	†
Splenic Flexure	39	15	24	0.9	0.8	0.9	†	†	†	†	†	†
Descending Colon	83	45	38	1.9	2.4	1.5	†	†	†	†	†	†
Sigmoid Colon	345	175	170	7.8	9.0	6.9	†	†	†	†	†	†
Large Intestine, NOS	83	36	47	1.9	2.0	1.7	†	†	†	†	†	†
Rectum and Rectosigmoid Junction	557	306	251	12.3	15.3	10.0	162	94	68	3.6	4.9	2.6
Rectosigmoid Junction	123	74	49	2.7	3.6	2.1	†	†	†	†	†	†
Rectum	434	232	202	9.6	11.7	8.0	†	†	†	†	†	†
Anus, Anal Canal and Anorectum	79	32	47	1.8	1.6	1.9	14	*	*	0.3	*	*
Liver and Intrahepatic Bile Duct	403	289	114	8.3	12.9	4.5	292	199	93	6.2	9.4	3.6
Liver	362	266	96	7.4	11.8	3.7	232	171	61	4.9	8.0	2.3
Intrahepatic Bile Duct	41	23	18	0.9	1.1	0.8	60	28	32	1.3	1.4	1.3
Gallbladder	47	21	26	1.0	1.1	1.0	31	15	16	0.7	0.8	0.6
Other Biliary	84	50	34	2.0	2.6	1.4	19	*	*	0.4	0.6	*
Pancreas	674	320	354	14.9	16.2	13.8	566	293	273	12.5	15.0	10.4
Retroperitoneum	22	15	7	0.5	0.7	0.3	*	*	0	*	*	0.0
Peritoneum, Omentum and Mesentery	20	*	*	0.4	*	0.7	10	*	*	0.2	*	*
Other Digestive Organs	20	*	*	0.4	*	0.7	10	*	*	0.2	*	*
Respiratory System	3,367	1,774	1,593	75.9	91.4	64.5	2,261	1,232	1,029	50.7	64.5	40.5
Nose, Nasal Cavity and Middle Ear	33	24	9	0.8	1.2	0.4	*	*	*	*	*	*
Larynx	194	149	45	4.1	7.0	1.8	53	*	*	1.1	2.1	*
Lung and Bronchus	3,128.	1,593	1,535	70.8	82.7	62.1	2,199	1,181	1,018	49.4	61.9	40.1
Pleura	*	0	*	*	0.0	*	0	0	0	0.0	0.0	0.0
Trachea, Mediastinum and Other Respiratory Organs	11	*	*	0.3	0.5	*	*	*	*	*	*	*
Bones and Joints	31	19	12	0.8	1.1	0.6	17	*	*	0.4	0.5	*
Soft Tissue including Heart	147	82	65	3.6	4.4	3.0	75	41	34	1.7	2.2	1.4
Skin excluding Basal and Squamous	829	471	358	19.5	24.9	16.0	120	80	40	2.7	4.2	1.7
Melanoma of the Skin	733	419	314	17.2	22.1	14.0	79	47	32	1.8	2.4	1.3
Other Non-Epithelial Skin	96	52	44	2.3	2.8	1.9	41	*	*	0.9	1.8	*
Breast	3,269	22	3,247	73.6	1.1	134.7	*	*	612	13.8	*	24.2

All Races	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Female Genital System	1,327	0	1,327	29.6	0.0	54.7	454	0	454	10.1	0.0	18.0
Cervix Uteri	144	0	144	3.6	0.0	6.8	59	0	59	1.4	0.0	2.6
Corpus and Uterus, NOS	731	0	731	15.9	0.0	29.3	139	0	139	3.1	0.0	5.5
Corpus Uteri	705	0	705	15.3	0.0	28.2	54	0	54	1.2	0.0	2.1
Uterus, NOS	26	0	26	0.6	0.0	1.1	85	0	85	1.9	0.0	3.3
Ovary	334	0	334	7.5	0.0	13.7	224	0	224	4.9	0.0	8.7
Vagina	26	0	26	0.6	0.0	1.0	*	0	*	*	0.0	*
Vulva	65	0	65	1.5	0.0	2.7	15	0	15	0.3	0.0	0.6
Other Female Genital Organs	27	0	27	0.6	0.0	1.0	12	0	12	0.2	0.0	0.4
Male Genital System	3,232	3,232	0	69.3	153.3	0.0	369	369	0	8.5	21.7	0.0
Prostate	3,115	3,115	0	66.2	146.9	0.0	362	362	0	8.3	21.3	0.0
Testis	103	103	0	2.8	5.7	0.0	*	*	0	*	*	0.0
Penis	10	10	0	0.2	0.5	0.0	*	*	0	*	*	0.0
Other Male Genital Organs	*	*	0	*	*	0.0	*	*	0	*	*	0.0
Urinary System	1,991	1,340	651	44.7	69.8	26.2	405	259	146	9.0	14.3	5.3
Urinary Bladder	1,103	814	289	24.7	43.5	11.3	226	149	77	4.9	8.4	2.7
Kidney and Renal Pelvis	844	502	342	18.9	24.9	14.1	164	102	62	3.7	5.4	2.4
Ureter	24	13	11	0.6	0.7	0.4	*	*	*	*	*	*
Other Urinary Organs	20	11	9	0.5	0.7	0.3	10	*	*	0.2	*	*
Eye and Orbit	35	20	15	0.9	1.1	0.7	*	*	*	*	*	*
Brain and Other Nervous System	277	148	129	6.6	7.8	5.6	190	108	82	4.3	5.4	3.4
Brain	258	138	120	6.1	7.3	5.2	†	†	†	†	†	†
Cranial Nerves Other Nervous System	19	10	9	0.5	0.6	0.4	†	†	†	†	†	†
Endocrine System	723	190	533	17.5	9.4	25.1	36	13	23	0.8	0.6	1
Thyroid	679	173	506	16.4	8.5	23.8	22	*	*	0.5	*	0.5
Other Endocrine including Thymus	44	17	27	1.1	0.8	1.3	14	*	*	0.3	*	0.5
Lymphoma	1,000	549	451	23.4	28.9	19.2	338	190	148	7.7	10.3	5.7
Hodgkin Lymphoma	126	69	57	3.3	3.8	2.9	20	*	*	0.5	0.7	*
Hodgkin - Nodal	121	67	54	3.2	3.7	2.7	†	†	†	†	†	†
Hodgkin - Extranodal	*	*	*	*	*	*	†	†	†	†	†	†
Non-Hodgkin Lymphoma	874	480	394	20.1	25.1	16.3	318	177	141	7.2	9.6	5.4
NHL - Nodal	545	294	251	12.4	15.2	10.3	†	†	†	†	†	†
NHL - Extranodal	329	186	143	7.7	9.9	6.0	†	†	†	†	†	†
Myeloma	334	191	143	7.5	9.9	5.7	158	85	73	3.5	4.5	2.8
Leukemia	677	362	315	15.8	19.2	13.3	290	160	130	6.6	8.9	5.1
Lymphocytic Leukemia	312	173	139	7.3	9.1	6.0	71	44	27	1.6	2.6	0.9
Acute Lymphocytic Leukemia	59	26	33	1.5	1.4	1.8	14	*	*	0.4	*	*
Chronic Lymphocytic Leukemia	245	140	105	5.5	7.2	4.2	55	34	21	1.2	2.0	0.6
Other Lymphocytic Leukemia	8	*	*	0.2	0.4	*	*	*	*	*	*	*
Myeloid and Monocytic Leukemia	340	176	164	8.0	9.5	6.8	140	77	63	3.2	4.2	2.5
Acute Myeloid Leukemia	225	121	104	5.3	6.6	4.3	126	68	58	2.9	3.7	2.3
Acute Monocytic Leukemia	6	*	*	0.2	*	*	*	*	0	*	*	0.0
Chronic Myeloid Leukemia	100	48	52	2.3	2.6	2.2	*	*	*	*	*	*
Other Myeloid/Monocytic Leukemia	9	*	*	0.2	*	*	*	*	*	*	*	*
Other Leukemia	25	13	12	0.6	0.7	0.5	79	39	40	1.8	2.1	1.6
Other Acute Leukemia	10	6	*	0.2	0.3	*	26	12	14	0.6	0.6	0.6
Aleukemic, Subleukemic and NOS	15	7	8	0.3	0.4	0.3	53	27	26	1.2	1.4	1.1
Miscellaneous	195	94	101	4.3	4.8	4.0	477	265	212	10.7	14.0	8.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
† Statistic not displayed due to fewer than 10 cases. * Statistic not displayed due to fewer than 6 cases.
Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

Caucasians

Cancer Incidence, Mortality and Age Adjusted Rates per 100,000 Population by Site, Race and Sex, Metropolitan Detroit, 2012

CAUCASIAN	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Sites (Invasive)	16,076	7,986	8,090	483.4	527.3	456.8	5,831	2,993	2,838	170.2	204.9	146.2
Oral Cavity and Pharynx	385	274	111	11.2	17.0	6.1	102	66	36	2.9	4.2	1.8
Lip	10	*	6	0.3	*	0.4	0	0	0	0.0	0.0	0.0
Tongue	128	92	36	3.7	5.6	2.0	34	21	13	1.0	1.4	0.7
Salivary Gland	41	26	15	1.3	1.8	0.9	10	*	*	0.3	*	*
Floor of Mouth	29	20	9	0.8	1.2	0.4	*	*	0	*	*	0.0
Gum and Other Mouth	53	29	24	1.6	1.9	1.3	14	*	*	0.4	*	*
Nasopharynx	12	9	*	0.4	0.6	*	*	*	*	*	*	*
Tonsil	55	49	6	1.6	3.0	0.3	*	*	0	*	*	0.0
Oropharynx	16	12	*	0.5	0.7	*	*	*	*	*	*	*
Hypopharynx	20	13	7	0.6	0.8	0.4	*	*	*	*	*	*
Other Oral Cavity and Pharynx	21	20	*	0.6	1.1	*	18	10	*	0.5	0.5	*
Digestive System	2,773	1,512	1,261	81.7	100.2	66.7	1,417	807	610	40.8	54.1	30.2
Esophagus	162	124	38	4.7	8.1	2.0	140	104	36	4.1	7.0	1.7
Stomach	239	147	92	7.1	9.7	5.0	103	68	35	2.9	4.5	1.7
Small Intestine	66	41	25	1.9	2.7	1.4	*	*	*	*	*	*
Colon and Rectum	1,351	665	686	40.3	45.3	36.3	510	251	259	14.7	17.2	12.7
Colon excluding Rectum	957	445	512	28.6	30.8	26.8	377	178	199	10.8	12.2	9.7
Cecum	222	105	117	6.6	7.1	6.1	†	†	†	†	†	†
Appendix	18	9	9	0.6	0.6	0.6	†	†	†	†	†	†
Ascending Colon	200	82	118	6.0	5.9	6.1	†	†	†	†	†	†
Hepatic Flexure	34	21	13	1.0	1.5	0.6	†	†	†	†	†	†
Transverse Colon	109	46	63	3.2	3.1	3.2	†	†	†	†	†	†
Splenic Flexure	24	9	15	0.7	0.6	0.7	†	†	†	†	†	†
Descending Colon	51	28	23	1.5	1.9	1.2	†	†	†	†	†	†
Sigmoid Colon	244	123	121	7.4	8.3	6.8	†	†	†	†	†	†
Large Intestine, NOS	55	22	33	1.6	1.7	1.5	†	†	†	†	†	†
Rectum and Rectosigmoid Junction	394	220	174	11.6	14.4	9.5	133	73	60	3.9	5.0	3.0
Rectosigmoid Junction	74	46	28	2.1	3.0	1.6	†	†	†	†	†	†
Rectum	320	174	146	9.5	11.5	7.8	†	†	†	†	†	†
Anus, Anal Canal and Anorectum	61	24	37	1.8	1.6	2.0	*	*	*	*	*	*
Liver and Intrahepatic Bile Duct	246	175	71	6.9	10.6	3.8	186	123	63	5.3	7.9	3.2
Liver	215	158	57	6.0	9.5	3.0	139	100	39	3.9	6.3	1.9
Intrahepatic Bile Duct	31	17	14	0.9	1.1	0.8	47	23	24	1.4	1.6	1.2
Gallbladder	31	14	17	0.9	0.9	0.9	18	10	*	0.5	0.7	*
Other Biliary	70	43	27	2.1	2.9	1.4	16	*	*	0.5	*	*
Pancreas	475	240	235	13.8	15.9	12.1	409	224	185	11.8	14.8	9.2
Retroperitoneum	15	10	*	0.4	0.7	*	*	*	0	*	*	0.0
Peritoneum, Omentum and Mesentery	13	*	9	0.4	*	0.5	*	*	*	*	*	*
Other Digestive Organs	44	25	19	1.3	1.7	1.0	12	*	*	0.4	*	*
Respiratory System	2,501	1,320	1,181	74.2	87.6	64.1	1,673	901	772	49.2	61.1	40.3
Nose, Nasal Cavity and Middle Ear	29	21	8	0.9	1.5	0.5	*	*	*	*	*	*
Larynx	133	103	30	3.7	6.2	1.6	34	28	*	1.0	1.7	*
Lung and Bronchus	2,332	1,191	1,141	69.4	79.7	61.9	1,630	866	764	48.0	58.8	39.9
Pleura	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Trachea, Mediastinum and Other Respiratory Organs	7	*	*	0.2	*	*	*	*	*	*	*	*
Bones and Joints	21	11	10	0.8	0.8	0.7	13	*	*	0.4	*	*
Soft Tissue including Heart	103	59	44	3.4	4.3	2.8	52	32	20	1.6	2.3	1.1
Skin excluding Basal and Squamous	779	447	332	24.7	30.8	20.7	112	76	36	3.3	5.2	2.0
Melanoma of the Skin	702	402	300	22.3	27.7	18.9	75	46	29	2.2	3.1	1.6
Other Non-Epithelial Skin	77	45	32	2.4	3.1	1.8	37	30	*	1.1	2.1	*
Breast	2,417	15	2,402	72.9	1.0	136.1	448	*	442	13.0	*	23.3

CAUCASIAN	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Female Genital System	990	0	990	29.8	0.0	56.3	333	0	333	9.8	0.0	17.8
Cervix Uteri	89	0	89	3.1	0.0	6.0	40	0	40	1.3	0.0	2.5
Corpus and Uterus, NOS	559	0	559	16.4	0.0	31.0	91	0	91	2.7	0.0	4.7
Corpus Uteri	545	0	545	16.0	0.0	30.2	32	0	32	0.9	0.0	1.7
Uterus, NOS	14	0	14	0.4	0.0	0.7	59	0	59	1.7	0.0	3.0
Ovary	251	0	251	7.6	0.0	14.3	177	0	177	5.1	0.0	9.3
Vagina	17	0	17	0.5	0.0	0.9	*	0	*	*	0.0	*
Vulva	52	0	52	1.6	0.0	3.0	15	0	15	0.4	0.0	0.7
Other Female Genital Organs	22	0	22	0.6	0.0	1.1	*	0	*	*	0.0	*
Male Genital System	2,075	2,075	0	59.8	129.5	0.0	240	240	0	7.1	17.9	0.0
Prostate	1,973	1,973	0	55.8	121.5	0.0	237	237	0	6.9	17.6	0.0
Testis	93	93	0	3.7	7.4	0.0	*	*	0	*	*	0.0
Penis	7	7	0	0.2	0.5	0.0	0	0	0	0.0	0.0	0.0
Other Male Genital Organs	*	*	0	*	*	0.0	0	0	0	0.0	0.0	0.0
Urinary System	1,585	1,067	518	47.0	72.4	28.1	321	214	107	9.2	15.0	5.2
Urinary Bladder	935	689	246	27.6	47.7	12.8	187	130	57	5.3	9.2	2.7
Kidney and Renal Pelvis	617	359	258	18.5	23.3	14.5	122	78	44	3.6	5.3	2.2
Ureter	18	10	8	0.5	0.7	0.4	*	*	*	*	*	*
Other Urinary Organs	15	9	6	0.5	0.7	0.3	*	*	*	*	*	*
Eye and Orbit	32	19	13	1.1	1.4	0.8	*	*	*	*	*	*
Brain and Other Nervous System	219	116	103	7.1	8.2	6.1	153	89	64	4.6	5.7	3.6
Brain	206	110	96	6.6	7.7	5.6	†	†	†	†	†	†
Cranial Nerves Other Nervous System	13	6	7	0.5	0.5	0.5	†	†	†	†	†	†
Endocrine System	562	161	401	19.2	10.7	27.7	26	11	15	0.8	0.7	0.8
Thyroid	531	146	385	18.2	9.7	26.6	15	*	*	0.4	*	*
Other Endocrine including Thymus	31	15	16	1.1	1.0	1.1	11	*	*	0.3	*	*
Lymphoma	779	440	339	24.6	30.8	19.7	266	151	115	7.9	10.6	5.7
Hodgkin Lymphoma	97	56	41	3.8	4.4	3.1	15	*	*	0.5	*	*
Hodgkin - Nodal	94	54	40	3.6	4.2	3.1	†	†	†	†	†	†
Hodgkin - Extranodal	*	*	*	*	*	*	†	†	†	†	†	†
Non-Hodgkin Lymphoma (NHL)	682	384	298	20.8	26.4	16.5	251	143	108	7.4	10.0	5.3
NHL - Nodal	433	239	194	13.1	16.4	10.7	†	†	†	†	†	†
NHL - Extranodal	249	145	104	7.7	10.0	5.8	†	†	†	†	†	†
Myeloma	196	117	79	5.8	8.0	4.1	100	59	41	2.9	4.1	2.1
Leukemia	516	282	234	16.1	19.7	13.3	230	131	99	6.7	9.3	4.9
Lymphocytic Leukemia	238	134	104	7.5	9.2	6.2	58	37	21	1.7	2.8	0.9
Acute Lymphocytic Leukemia	45	20	25	1.7	1.6	2.0	11	*	*	0.4	*	*
Chronic Lymphocytic Leukemia	186	108	78	5.5	7.2	4.2	46	29	17	1.3	2.2	0.7
Other Lymphocytic Leukemia	7	6	*	0.2	0.4	*	*	*	0	*	*	0.0
Myeloid and Monocytic Leukemia	260	138	122	8.1	9.8	6.7	110	62	48	3.3	4.4	2.4
Acute Myeloid Leukemia	180	99	81	5.6	7.1	4.3	99	55	44	2.9	3.8	2.2
Acute Monocytic Leukemia	*	*	*	*	*	*	*	*	0	*	*	0.0
Chronic Myeloid Leukemia	68	33	35	2.1	2.3	2.0	*	*	*	*	*	*
Other Myeloid/Monocytic Leukemia	8	*	*	0.2	*	*	*	*	*	*	*	*
Other Leukemia	18	10	8	0.5	0.7	0.4	62	32	30	1.8	2.1	1.6
Other Acute Leukemia	9	6	*	0.3	0.4	*	23	11	12	0.7	0.8	0.7
Aleukemic, Subleukemic and NOS	9	*	*	0.3	*	*	39	21	18	1.1	1.4	0.9
Miscellaneous	143	71	72	4.1	4.8	3.7	339	198	141	9.9	13.6	6.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
† Statistic not displayed due to fewer than 10 cases. * Statistic not displayed due to fewer than 6 cases.
Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

Cancer Incidence, Mortality and Age Adjusted Rates per 100,000 Population by Site, Race and Sex, Metropolitan Detroit, 2012

AFRICAN-AMERICAN	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Sites (Invasive)	5,029	2,557	2,472	513.3	620.1	439.6	2,004	981	1,023	214.0	263.0	183.4
Oral Cavity and Pharynx	112	84	28	10.7	18.5	4.8	23	17	*	2.3	4.1	*
Lip	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Tongue	20	17	*	1.8	3.7	*	*	*	*	*	*	*
Salivary Gland	9	6	*	0.9	1.6	*	*	*	0	*	*	0.0
Floor of Mouth	11	8	*	1.1	1.8	*	0	0	0	0.0	0.0	0.0
Gum and Other Mouth	13	6	7	1.3	1.2	1.2	*	0	*	*	0.0	*
Nasopharynx	*	*	*	*	*	*	*	*	0	*	*	0.0
Tonsil	22	19	*	2.1	4.1	*	*	*	*	*	*	*
Oropharynx	13	8	*	1.2	1.8	*	*	*	*	*	*	*
Hypopharynx	15	13	*	1.5	3.0	*	*	*	*	*	*	*
Other Oral Cavity and Pharynx	7	6	*	0.6	1.2	*	*	*	0	*	*	0.0
Digestive System	1,070	577	493	109.6	139.2	87.4	557	302	255	57.8	75.5	45.3
Esophagus	48	40	8	4.9	9.4	1.6	34	27	*	3.4	6.4	*
Stomach	93	58	35	9.6	14.1	6.4	48	22	26	5.4	6.1	4.8
Small Intestine	35	21	14	3.8	5.1	2.8	*	*	*	*	*	*
Colon and Rectum	484	240	244	50.5	60.8	43.2	202	107	95	21.5	28.7	16.9
Colon excluding Rectum	343	169	174	36.5	43.7	31.3	174	86	88	18.6	23.3	15.7
Cecum	79	37	42	8.5	9.1	7.8	†	†	†	†	†	†
Appendix	8	*	6	0.8	*	1.1	†	†	†	†	†	†
Ascending Colon	57	25	32	6.2	6.2	6.1	†	†	†	†	†	†
Hepatic Flexure	10	6	*	1.0	1.5	*	†	†	†	†	†	†
Transverse Colon	35	21	14	3.6	5.5	2.4	†	†	†	†	†	†
Splenic Flexure	15	6	9	1.5	1.5	1.5	†	†	†	†	†	†
Descending Colon	30	17	13	3.4	5.1	2.3	†	†	†	†	†	†
Sigmoid Colon	84	42	42	8.8	11.2	7.3	†	†	†	†	†	†
Large Intestine, NOS	25	13	12	2.6	3.3	2.1	†	†	†	†	†	†
Rectum and Rectosigmoid Junction	141	71	70	14.0	17.1	11.9	28	21	*	2.8	5.4	*
Rectosigmoid Junction	41	22	19	4.1	5.0	3.6	†	†	†	†	†	†
Rectum	100	49	51	9.8	12.2	8.3	†	†	†	†	†	†
Anus, Anal Canal and Anorectum	18	8	10	1.9	2.0	1.8	*	*	*	*	*	*
Liver and Intrahepatic Bile Duct	146	107	39	13.1	21.9	6.5	95	70	25	8.9	14.5	4.5
Liver	138	102	36	12.3	20.9	5.9	86	67	19	8.0	14.0	3.5
Intrahepatic Bile Duct	8	*	*	0.8	*	*	*	*	*	*	*	*
Gallbladder	15	7	8	1.7	2.3	1.4	12	*	*	1.3	*	*
Other Biliary	12	6	6	1.5	1.6	1.3	*	0	*	*	0.0	*
Pancreas	187	76	111	19.5	18.5	19.5	149	66	83	15.7	16.8	14.6
Retroperitoneum	7	*	*	0.8	*	*	0	0	0	0.0	0.0	0.0
Peritoneum, Omentum and Mesentery	6	0	6	0.6	0.0	1.0	*	0	*	*	0.0	*
Other Digestive Organs	19	9	10	1.9	2.4	1.6	*	0	*	*	0.0	*
Respiratory System	819	431	388	87.1	114.0	69.6	566	316	250	60.4	83.8	44.8
Nose, Nasal Cavity and Middle Ear	*	*	*	*	*	*	0	0	0	0.0	0.0	0.0
Larynx	59	44	15	6.0	10.9	2.7	19	16	*	2.0	4.2	*
Lung and Bronchus	753	383	370	80.3	102.0	66.3	547	300	247	58.4	79.6	44.3
Pleura	*	0	*	*	0.0	*	0	0	0	0.0	0.0	0.0
Trachea, Mediastinum and Other Respiratory Organs	*	*	*	*	*	*	0	0	0	0.0	0.0	0.0
Bones and Joints	8	7	*	0.8	1.5	*	*	*	*	*	*	*
Soft Tissue including Heart	40	19	21	4.4	4.5	4.2	21	*	14	2.4	*	2.7
Skin excluding Basal and Squamous	17	*	12	1.8	*	2.4	*	*	*	*	*	*
Melanoma of the Skin	*	0	*	*	0.0	*	*	*	*	*	*	*
Other Non-Epithelial Skin	14	*	9	1.5	*	1.9	*	*	*	*	*	*
Breast	757	7	750	77.9	1.9	133.0	165	*	162	17.5	*	28.9

AFRICAN-AMERICAN	Incidence			Rate			Mortality			Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Female Genital System	292	0	292	29.1	0.0	50.1	113	0	113	11.7	0.0	19.7
Cervix Uteri	48	0	48	5.0	0.0	8.9	17	0	17	1.8	0.0	3.1
Corpus and Uterus, NOS	149	0	149	14.3	0.0	24.6	46	0	46	4.8	0.0	8.1
Corpus Uteri	137	0	137	12.9	0.0	22.2	21	0	21	2.3	0.0	3.8
Uterus, NOS	12	0	12	1.4	0.0	2.4	25	0	25	2.5	0.0	4.3
Ovary	74	0	74	7.5	0.0	12.8	43	0	43	4.4	0.0	7.3
Vagina	9	0	9	1.0	0.0	1.7	*	0	*	*	0.0	*
Vulva	9	0	9	0.8	0.0	1.5	0	0	0	0.0	0.0	0.0
Other Female Genital Organs	*	0	*	*	0.0	*	*	0	*	*	0.0	*
Male Genital System	913	913	0	87.9	211.1	0.0	123	123	0	14.3	39.2	0.0
Prostate	899	899	0	86.5	207.7	0.0	119	119	0	13.9	38.2	0.0
Testis	9	9	0	1.0	2.2	0.0	*	*	0	*	*	0.0
Penis	*	*	0	*	*	0.0	*	*	0	*	*	0.0
Other Male Genital Organs	*	*	0	*	*	0.0	*	*	0	*	*	0.0
Urinary System	352	237	115	36.3	59.8	20.3	80	43	37	8.8	12.5	6.2
Urinary Bladder	134	100	34	14.0	26.2	6.0	39	19	20	4.4	5.8	3.3
Kidney and Renal Pelvis	210	133	77	21.4	32.4	13.6	38	22	16	4.2	6.2	2.7
Ureter	*	*	*	*	*	*	0	0	0	0.0	0.0	0.0
Other Urinary Organs	*	*	*	*	*	*	*	*	*	*	*	*
Eye and Orbit	*	*	*	*	*	*	0	0	0	0.0	0.0	0.0
Brain and Other Nervous System	45	25	20	4.6	6.4	3.5	30	14	16	3.2	4.0	2.9
Brain	40	21	19	4.1	5.6	3.3	†	†	†	†	†	†
Cranial Nerves Other Nervous System	*	*	*	*	*	*	†	†	†	†	†	†
Endocrine System	127	22	105	12.9	5.2	18.8	*	*	*	*	*	*
Thyroid	115	21	94	11.6	5.0	16.7	*	*	*	*	*	*
Other Endocrine including Thymus	12	*	11	1.3	*	2.2	*	0	*	*	0.0	*
Lymphoma	177	86	91	18.4	20.2	16.7	66	35	31	7.3	9.1	5.9
Hodgkin Lymphoma	23	10	13	2.4	2.3	2.4	*	*	0	*	*	0.0
Hodgkin - Nodal	23	10	13	2.4	2.3	2.4	†	†	†	†	†	†
Hodgkin - Extranodal	0	0	0	0.0	0.0	0.0	†	†	†	†	†	†
Non-Hodgkin Lymphoma (NHL)	154	76	78	15.9	17.8	14.3	61	30	31	6.8	8.0	5.9
NHL - Nodal	93	48	45	9.3	10.8	8.1	†	†	†	†	†	†
NHL - Extranodal	61	28	33	6.6	7.0	6.2	†	†	†	†	†	†
Myeloma	133	70	63	14.0	18.4	11.1	57	25	32	6.1	6.4	5.7
Leukemia	118	53	65	12.8	13.8	12.3	50	22	28	5.8	6.5	5.5
Lymphocytic Leukemia	47	22	25	5.0	5.6	4.7	11	*	*	1.2	*	*
Acute Lymphocytic Leukemia	12	*	7	1.2	*	1.3	*	*	*	*	*	*
Chronic Lymphocytic Leukemia	35	17	18	3.8	4.4	3.3	*	*	*	*	*	*
Other Lymphocytic Leukemia	0	0	0	0.0	0.0	0.0	*	0	*	*	0.0	*
Myeloid and Monocytic Leukemia	65	28	37	7.1	7.4	7.0	23	11	12	2.6	3.0	2.5
Acute Myeloid Leukemia	36	16	20	3.9	3.9	3.9	20	*	11	2.3	*	2.3
Acute Monocytic Leukemia	*	0	*	*	0.0	*	0	0	0	0.0	0.0	0.0
Chronic Myeloid Leukemia	26	11	15	2.8	3.1	2.8	*	*	*	*	*	*
Other Myeloid/Monocytic Leukemia	*	*	0	*	*	0.0	0	0	0	0.0	0.0	0.0
Other Leukemia	6	*	*	0.7	*	*	16	*	10	2.0	*	2.0
Other Acute Leukemia	*	0	*	*	0.0	*	*	*	*	*	*	*
Aleukemic, Subleukemic and NOS	*	*	*	*	*	*	13	*	*	1.6	*	*
Miscellaneous	47	20	27	4.9	4.5	5.0	133	65	68	14.2	16.9	12.7

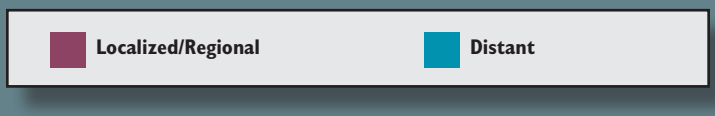
Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
† Statistic not displayed due to fewer than 10 cases. * Statistic not displayed due to fewer than 6 cases.
Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

Survival Analysis of Prostate Cancer by Stage

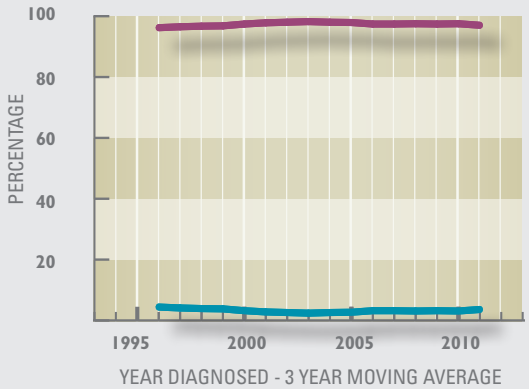
Since 1996, 5-year survival rates for prostate cancer have remained relatively stable. In the tri-county area, the current five-year relative survival for men diagnosed with local stage prostate cancer is near 100%. Survival rates in men with prostate cancer that is diagnosed after it has spread to other parts of the body, however, remains below 30%.

PSA screening for prostate cancer began in the early 1990s. With more cases being diagnosed, survival for distant stage cancer patients in the Metropolitan Detroit area became more variable, but has shown some improvement over the last 10 years.

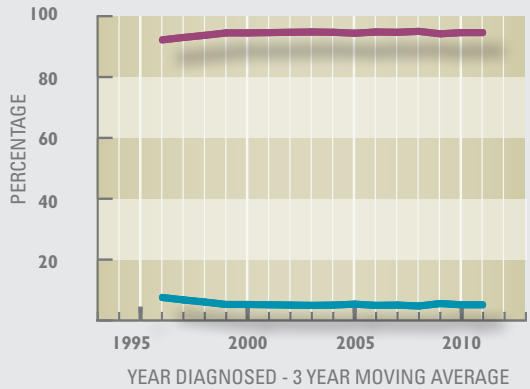
Armed with successful treatment for early stage disease, there has been a concerted effort to identify these cancers while they are in local stage. Currently, about 95% of the men who are newly diagnosed with prostate cancer in the tri-county area are diagnosed at local or regional stages. A few of the risk factors for developing the disease are age, race (African American), and family history (men with close blood relatives such as fathers or brothers who have been diagnosed with the disease).



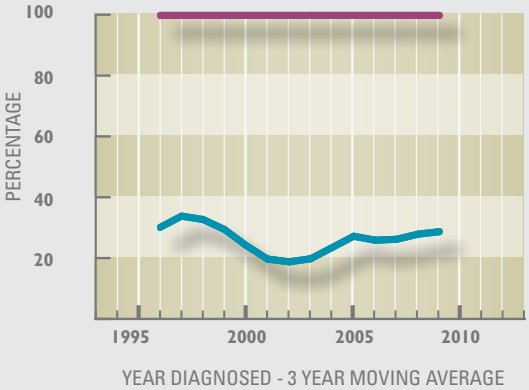
**Invasive Prostate Cancer – Caucasian Males
Stage Distribution 1996 – 2012 Metropolitan Detroit**



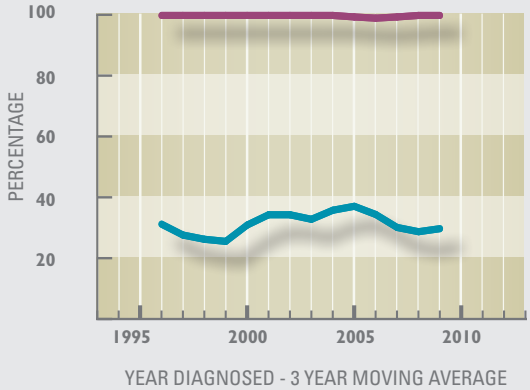
**Invasive Prostate Cancer – African-American Males
Stage Distribution 1996 – 2012 Metropolitan Detroit**



**5-Year Relative Survival Rates for Prostate Cancer –
Caucasian Males by Stage, 1996 – 2012 Metropolitan Detroit**



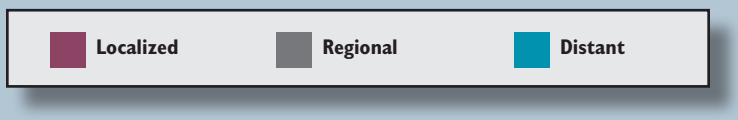
**5 -Year Relative Survival Rates for Prostate Cancer –
African-American Males by Stage, 1996 – 2012 Metropolitan Detroit**



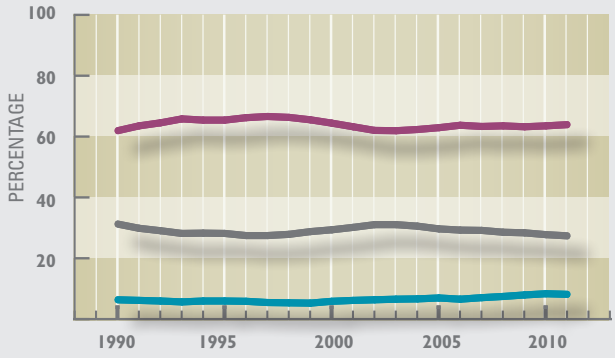
Survival Analysis of Female Breast Cancer by Stage

Both diagnosis and treatment for female breast cancer have improved since the advent of mammography screening, as more cases are diagnosed at an earlier stage. Currently, five-year relative survival for cases diagnosed at local stage is 95% for women in the general population. For women with regional stage disease, survival also has improved. For women diagnosed with late stage disease, survival has remained relatively steady, at 10-20% for women in the general population. African American women tend to have a higher proportion of late stage diagnoses and five-year survival, regardless of stage, tends to be poorer than for White women.

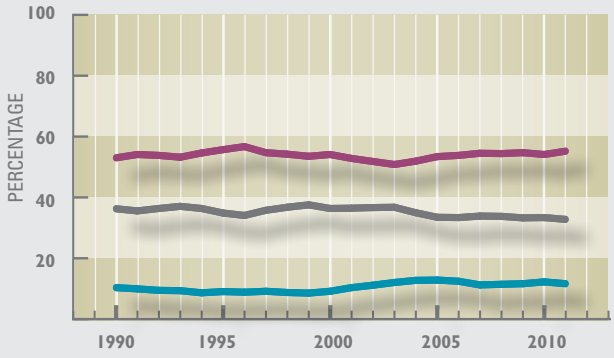
Gender and age are the greatest risk factors for developing breast cancer. Breast cancer can strike men and women both, but women are many times more likely to develop the disease than men. A family history of breast cancer has also been linked to increasing a woman's likelihood of developing the disease. Gender, age, and family history are things that cannot be prevented, however women can increase their chances of surviving this disease by consulting with their physician, following recommended screening for their specific age and risk group. Women who are at an increased risk due to a family history should consult with their doctor about whether they should begin mammography screening at an earlier.



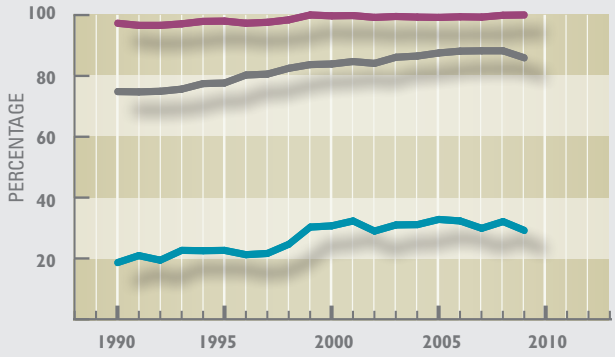
**Invasive Breast Cancer – Caucasian Females
Stage Distribution 1990 – 2012 Metropolitan Detroit**



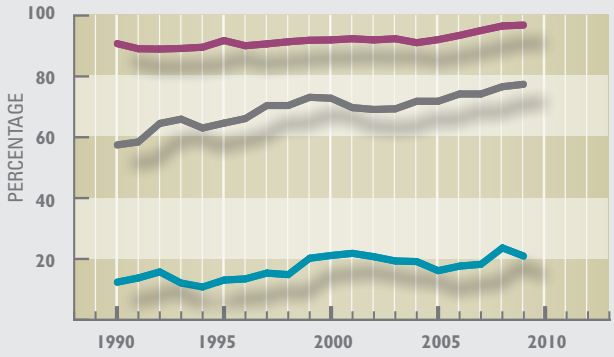
**Invasive Breast Cancer – African-American Females
Stage Distribution 1990 – 2012 Metropolitan Detroit**



**5-Year Relative Survival Rates for Breast Cancer –
Caucasian Females by Stage, 1990 – 2012 Metropolitan Detroit**



**5-Year Relative Survival Rates for Breast Cancer –
African-American Females by Stage, 1990 – 2012 Metropolitan Detroit**

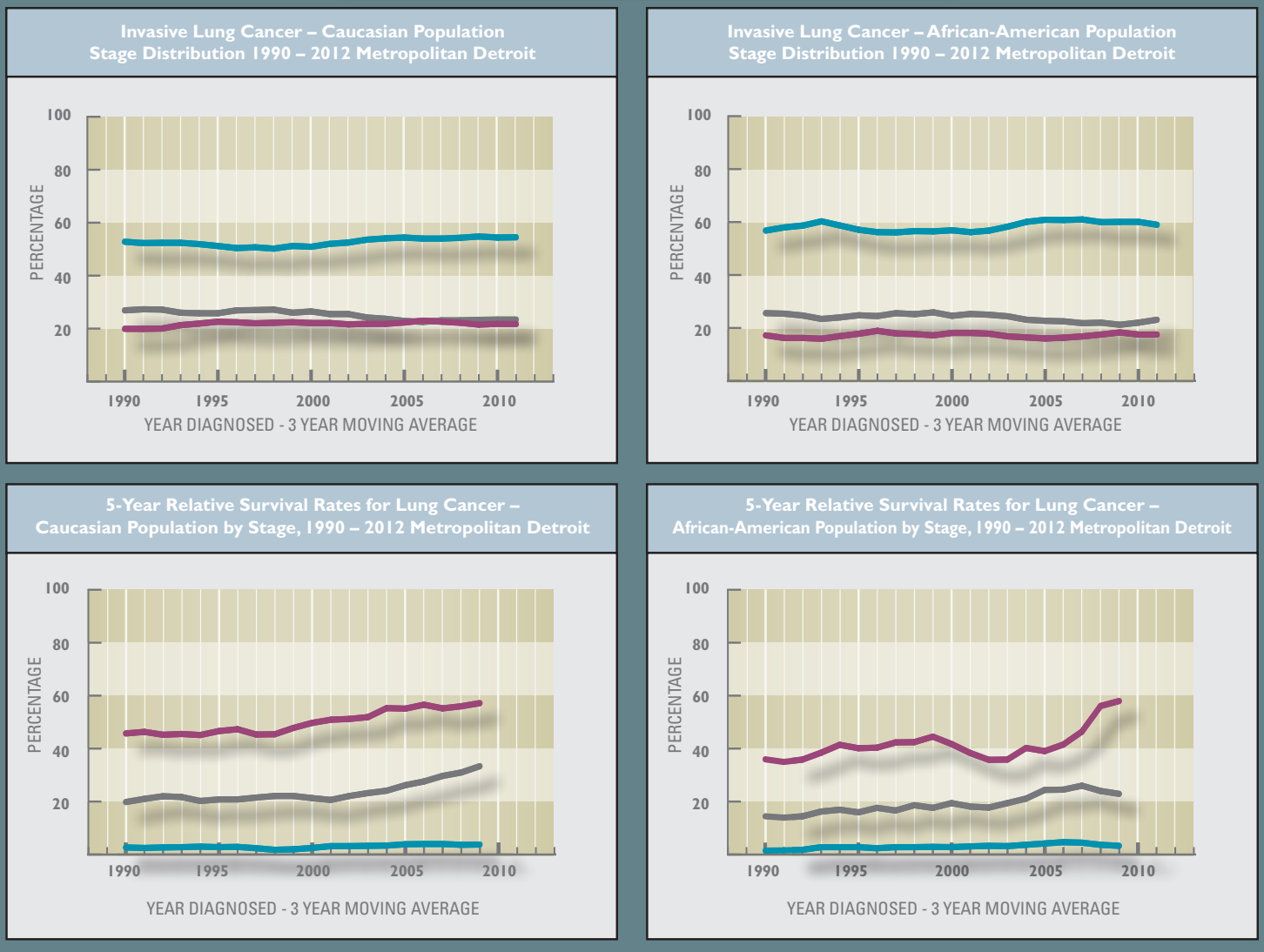


Survival Analysis of Lung Cancer by Stage

Diagnosis of lung cancer in local stage is difficult because symptoms usually do not appear until the disease is advanced. Only about 22% of lung cancers in Caucasians and 18% in African-Americans are diagnosed at the local stage. Most early stage lung cancer cases are diagnosed incidentally. The five-year survival rate for local stage cancer is less than 60% for the general population. The five-year survival for distant stage cancer is approximately 3%. A higher proportion of lung cancers in African-Americans are diagnosed at distant stage than in Caucasians, which reduces the overall 5-year African-American survival rate.

An effective method for screening for lung cancer has not yet been developed although promising methods are being tested. When a new method is developed, the hope is that it will be as effective and universally used as mammography screening has been for breast cancer and the PSA blood test has been for prostate cancer.

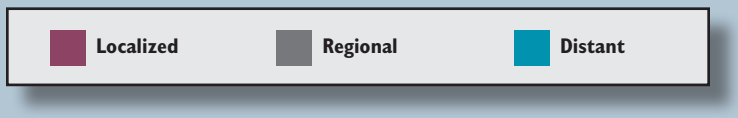
The major risk factor for lung cancer is tobacco smoking. The risk increases over time as a person continues to smoke. However, if a person is able to quit smoking before cancer has developed, the lung tissue can begin to repair itself. An ex-smoker can lower his risk of lung cancer, but his risk will still be higher than that of someone who has never smoked. Nonsmokers who are exposed to second hand smoke in the home or workplace are also at increased risk for developing lung cancer. Exposure to carcinogens in the workplace or the environment and having a family history of lung cancer have also been found to contribute to an increased risk for getting the disease.



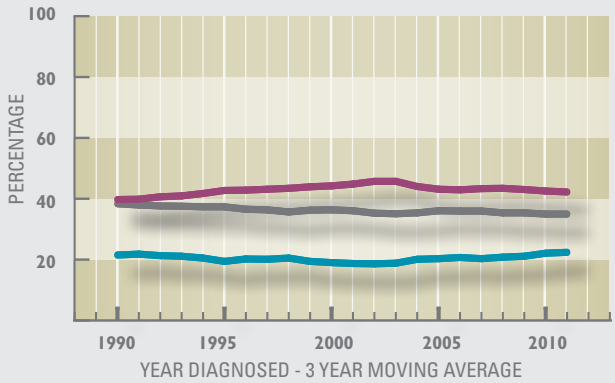
Survival Analysis of Colorectal Cancer by Stage

The five-year survival rate for local stage colorectal cancer has remained fairly stable since 1990 in the Detroit Metropolitan Area. Currently, the five-year relative survival rate for local stage cancer is over 90% compared to 73% in 1973. At distant stage, the five-year relative survival rate is over 10% compared to 4% in 1973. This improved survival has been linked to improved early detection practices including the increased use of screening sigmoidoscopy. Five-year survival rates, however, are still lower for African-Americans than for Caucasians, regardless of stage.

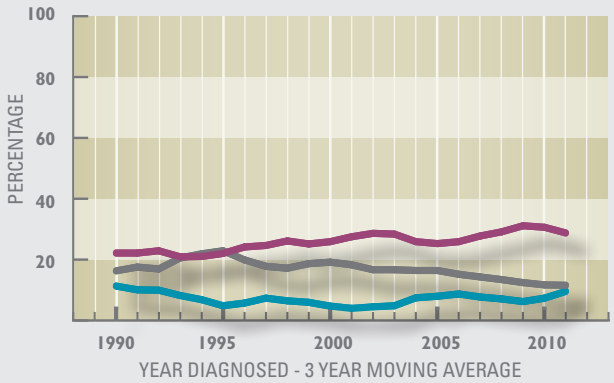
Age, family history, and diet are risk factors in developing colorectal cancer. The symptoms of colorectal cancer may mimic some other conditions such as hemorrhoids or inflammatory bowel disease. It is best to consult with a physician to determine the correct cause of the symptoms. Screening typically begins at age 50 for the general population. If there is family history of the disease, a patient needs to confer with their physician to discuss when screening should begin.



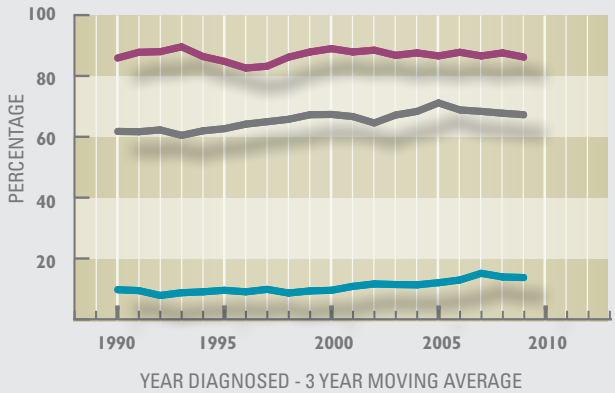
Invasive Colorectal Cancer – Caucasian Population Stage Distribution 1990 – 2012 Metropolitan Detroit



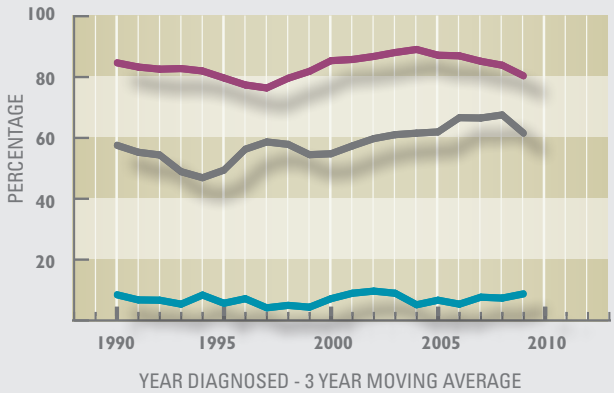
Invasive Colorectal Cancer – African-American Population Stage Distribution 1990 – 2012 Metropolitan Detroit



5-Year Relative Survival Rates for Colorectal Cancer – Caucasian Population by Stage, 1990 – 2012 Metropolitan Detroit



5-Year Relative Survival Rates for Colorectal Cancer – African-American Population by Stage, 1990 – 2012 Metropolitan Detroit



Cancer Research at MDCSS

MDCSS

METROPOLITAN DETROIT CANCER SURVEILLANCE SYSTEM

Cancer Survivorship in Metropolitan Detroit

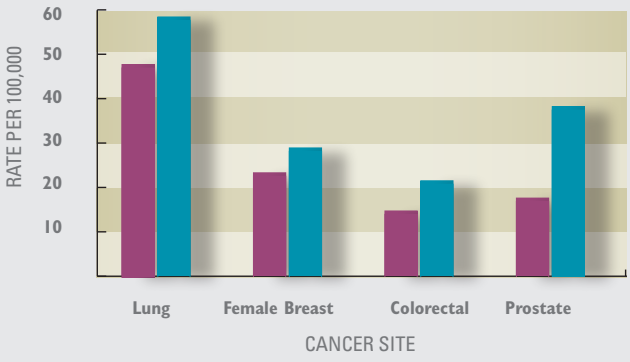
Jennifer Beebe-Dimmer, MPH, PhD

The advances made in the diagnosis and treatment of cancer, particularly over the past few decades have resulted in a growing number of survivors which in turn emphasizes the importance of research into the biological, clinical, psychological and economic consequences of cancer diagnosis and treatment.[1] Furthermore, cancer survivorship research priorities need to address the fact that the advancements made in cancer diagnosis and treatment have not resulted in equal outcomes by race and socioeconomic position. There are still significant health disparities in both short and long term outcomes after a diagnosis of cancer, particularly for African American men and women. A number of studies show that compared to white survivors, African-American cancer survivors report more cancer-related health problems and worse health-related quality of life (QOL).[2,3]

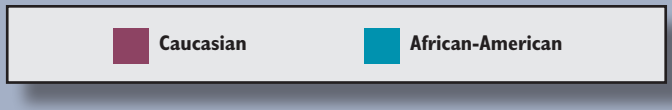
Many of the behavioral, physical and psychosocial risk factors that adversely impact QOL are more prevalent in African-American than white cancer survivors. African-American cancer survivors have been shown to have poorer self-reported health status, higher body mass index (BMI), at least one physical limitation, and lower levels of physical activity than white cancer survivors.[4] African-American survivors also report experiencing medical discrimination in dealing with health care systems which could impact their utilization of services.[5] Cancer outcomes are also driven by genetic susceptibility to the effects of treatment[6] and likely result in differential outcomes by race. These studies merely scratch the surface of what is needed to fully understand the drivers contributing to racial disparities in cancer outcomes. To address these important issues surrounding cancer health disparities, the Cancer Survivorship in Metropolitan Detroit (CSMD) cohort study began in March, 2015 with a goal of recruiting 1000 survivors diagnosed with primary lung, colorectal, breast or prostate cancer on or after January 1st, 2013.

All participants are asked to complete a 30-45 minute web-based survey that may be completed with interviewer support. The survey collects information from participants that is deemed critical in understanding their experiences, both before, but more importantly after their diagnosis including an assessment of their comorbid conditions, quality of life, diet and exercise routines, social support and outstanding needs related to their health care, as well as any financial hardship they have experienced as a result of their diagnosis. Participants will also be asked to complete web-based follow-up surveys annually for the next four years to update much of the information gathered in the baseline survey. In addition, all participants are asked to 1) submit a saliva specimen for genetic analysis after completion of the survey which is typically done in the comfort of their own home and shipped back to study staff, 2) agree to allow access to medical records and 3) tumor tissue, as well as 4) contact for future studies. Recruitment for this study is ongoing. As of December 1, 2015, 800 patients have been invited to participate in the study. Of those, 661 patients were considered to be eligible and of those 405 (61%) have completed baseline surveys. 70% of patients completed the survey with interviewer support and 30% have completed it with no assistance, with 92% of participants agreeing to provide saliva specimens.

Age-Adjusted Mortality Rates for Lung, Female Breast, Colorectal and Prostate Cancers by Race, Metropolitan Detroit, 2012



Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Mortality - All COD, Aggregated With State, Total U.S. (1969-2009) .



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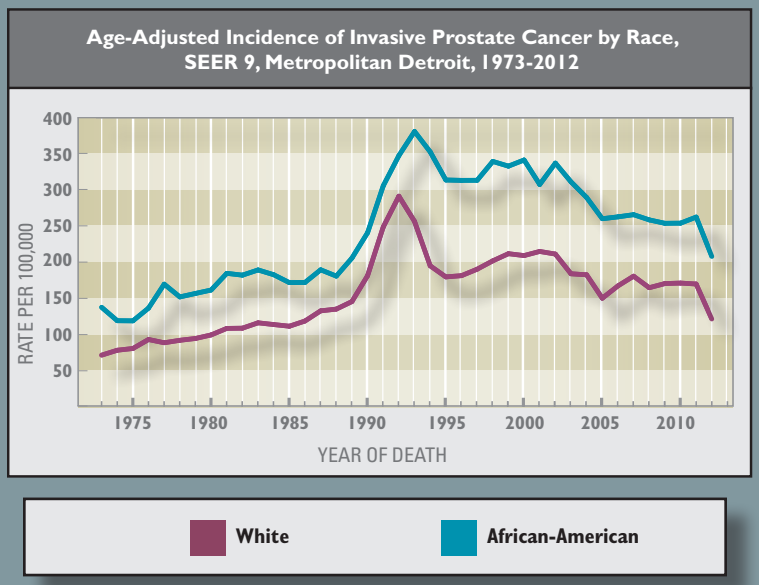
Treatment Options for Prostate Cancer Study (TOPCS)

Jinping Xu, MD (Principal Investigator), Cathryn Bock, PhD, MPH

Prostate cancer is the most prevalent cancer in men in the United States, with approximately 2.8 million men living with the disease, and an estimated 220,800 new cases diagnosed each year.[1] Ninety per cent of prostate-specific antigen (PSA) screen-detected prostate cancers are localized, and more than half are low-risk tumors that are unlikely to become life-threatening.[2] The majority of men with low-risk, localized prostate cancer (LPC) receive curative treatment such as surgery or radiation therapy.[3-5] These curative treatments may provide little survival benefit for men with low-risk LPC while increasing their risk of substantial adverse effects including impotence, urinary incontinence, and bowel problems, that often have long-term impact on quality of life.[6] Active surveillance (AS) is an alternate treatment option for low-risk LPC that offers the opportunity to delay or avoid curative treatment and its associated side effects unless the cancer progresses. Current practice guidelines identify AS as an appropriate initial management strategy for low-risk LPC.[7] However, AS is often not chosen, and little research has addressed the reasons why men with low-risk LPC receive aggressive treatment rather than AS. Racial disparities in prostate cancer treatment exist as well; black men have historically received less aggressive prostate cancer treatment than white men and report increased decision-making difficulty and decision regret, and poorer quality of life.

Recently, the National Institutes of Health emphasized the urgent need to better understand the low uptake of AS in men with low-risk LPC to reduce unnecessary treatment. More information is also needed on how race may relate to AS decision-making and quality of life following treatment for low-risk LPC. Decreasing overtreatment and its associated morbidity in men with LPC is a critically important public health issue given the large number of men affected and the significant risk for adverse outcomes. In order to address this issue, Principle Investigator Jinping Xu, MD, MS, with Co-Investigators Cathryn Bock, PhD, MPH, Kendra Schwartz, MD, MSPH, Julie Ruterbusch, MPH, Joel Ager, PhD, James Janisse, PhD, Susan Eggly, PhD, and Jeffrey Triest, MD, of Wayne State University in collaborations with Michael Goodman, MD, MPH and Elaine Brockman, MPH, of Emory University, is conducting a study entitled "Treatment Options for Prostate Cancer Study (TOPCS)." This study is funded by the American Cancer Society and is being conducted among a socioeconomically diverse population of black and white men in Metropolitan Detroit and in the State of Georgia identified using rapid case reporting at both NCI-funded SEER cancer registries. The study's objectives are to identify determinants of treatment choice in men with LPC, particularly the factors that affect the offer, acceptance, and adherence of AS as an initial management strategy. The study is also surveying urologists who treat prostate cancer patients in Metropolitan Detroit and in the State of Georgia to learn about how they help men make treatment decisions for low-risk LPC.



"TOPCS" began recruitment of patient participants in July 2014 and of urologists in February 2015, and enrollment will continue through the end of 2016. For questions regarding this research, please e-mail the study project coordinator, Ms. Elyse Reamer, at TOPCS@wayne.edu or call (313) 578-4369.

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Improving Post-Treatment Resources for Latina Breast Cancer Survivors

Hayley S. Thompson, PhD

All breast cancer survivors are at considerable risk for breast cancer recurrence. Local recurrence rates among breast cancer patients diagnosed with in situ, Stage I or Stage II disease are reported at 5-10% at 5-year follow-up and 10-15% at 10-year follow-up.[1-5] Breast cancer survivors are also 2–6 times more likely to develop a second primary breast cancer compared to women in the general population.[6,7] The American Society of Clinical Oncology (ASCO) has established evidence-based guidelines for post-treatment surveillance; 1) mammography every 6-12 months; 2) physical examination every 4-6 months in the first three years post-treatment, every 6-12 months in the fourth and fifth post-treatment years, and annually after that; 3) symptom histories that follow the same schedule as physical exams; 4) regular pelvic exam/Pap test with screening interval unspecified; and 5), monthly breast self-exam (BSE).[8,9,10] Other organizations, such as the National Comprehensive Cancer Network, make similar recommendations.[11] Routine surveillance, particularly mammography, detects local recurrences and second primaries at earlier stages[12-14] and there is evidence that locally recurrent or contralateral breast cancers found at an early stage are associated with a better prognosis compared to more advanced cancers.[13,15] Furthermore, recent case-control studies indicate that guideline surveillance, specifically physical exam and mammography, is associated with all-cause mortality,[16,17] and surveillance mammography is associated decreased breast cancer-specific mortality.[18]

Across several studies, race/ethnicity was one of the strongest predictors of non-adherence to post-treatment breast cancer surveillance,[19] with survivors of color demonstrating a lower likelihood of completing consecutive surveillance mammograms over several years compared to White survivors as well as fewer months of medical follow-up.[20,21] A focus on Latina breast cancer survivors in particular is warranted due to the dearth of research focusing on this population and the lack of interventions that are group-specific and culturally targeted. A targeted approach is supported by research indicating that Latina survivors report distinct barriers to care including perceptions that physicians don't have time to explain; lack of physician sensitivity in listening to concerns; language barriers, including few resources available in Spanish nor visual aids for those with low literacy; lack of trusting relationships with healthcare providers; cost; lack of healthcare insurance and accessibility; difficulty navigating the health care system.[22,23] There is the additional problem that, regardless of race/ethnicity, adherence to guideline surveillance among survivors over time is low.[24,20,21,25-27,19] Overall, these findings suggest that post-treatment breast cancer surveillance is a domain warranting intervention, especially among Latina survivors.

In response to this issue, Hayley Thompson, Ph.D. is collaborating with David Lounsbury, Ph.D. at Albert Einstein College of Medicine to conduct the study titled, "Improving Post-Treatment Resources for Latina Breast Cancer Survivors," funded by an American Cancer Society Research Scholar Grant. This study addresses the problem of low informational support among Latina breast cancer patients who have completed treatment as well as the problem of how that information is communicated through a video intervention. This video conveys key information points about breast cancer recurrence and surveillance with the addition of Latina breast cancer survivor narrative, or personal stories. The long-term objective of the study is to compare the effect of the intervention versus usual care on post-treatment mammography surveillance.

The WSU-based component of the study identifies and enrolls participants through the Metropolitan Detroit Cancer Surveillance System (MDCSS). Eligible participants are breast cancer patients, are women who identify as Latina or Hispanic who are also between 3 and 48 months post-primary breast cancer treatment, are between 21 and 74 years of age, and have a previous diagnosis of either in situ or Stage I, II, or III disease. Women are excluded if they have had a bilateral mastectomy, have had more than one breast cancer diagnosis or have received a non-breast cancer diagnosis in the past, are pregnant, or are not able to complete the interviews in English or Spanish.

Reference:

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Mammographic Breast Density and Breast Cancer Risk in Metropolitan Detroit

Kristen S. Purrington, PhD, MPH, Mark Manning, PhD

Breast cancer is the most commonly diagnosed cancer in women in the United States, and an estimated 230,000 women will be diagnosed in the United States in 2015, accounting for 14% of all new cancer cases.[1] Black women are slightly less likely to develop breast cancer (124.4 cases/100,000) compared to white women (127.9 cases/100,000),[1] but they are more likely to be diagnosed at a younger age, develop histologically aggressive tumors, and present at a later stage.[2] Breast cancer survival rates are high, with an overall five-year survival of 89.4%, although this varies substantially by stage (localized: 98.6%, regional: 84.9%, distant: 25.9%) and race (white: 90.8%, African American: 80.4%), where women whose cancer has spread beyond the breast and African American women are substantially more likely to die from the disease.[1] It is therefore important to better understand the relevance and impact of known breast cancer risk factors for women of different races.

Breast density is a strong risk factor for breast cancer, where density is defined as the amount of fibroglandular tissue relative to fatty tissue in the breast.[3] Women with the highest levels of density (≥75%) are at a 4.6-fold increase in risk (95% confidence interval 3.6-5.9) of breast cancer compared to women with the lowest levels of density (≤5%).[3] Mammographic breast density in particular is measured as the amount of radiodense tissue in the breast, which appears white on a mammogram, and is typically categorized into four groups using the Breast Imaging Reporting and Data System (BI-RADS).[4] These categories include breasts that (a) are almost entirely fatty, (b) contain scattered areas of fibroglandular density, (c) are heterogeneously dense, which may obscure small masses, and (d) are extremely dense, which lowers the sensitivity of mammography. As indicated by these definitions, in addition to being a risk factor for breast cancer, breast density may obscure the presence of a tumor on a mammogram.[3] Laws have recently been implemented in 24 states, including Michigan, to notify women of these risks if they are found to have dense breasts during routine mammographic screening.

Mammographic breast density and its associated breast cancer risk have not been well studied for African American women. In the studies that reported data specifically for African American women, results were inconsistent with no consensus as to whether African American women tend to have higher or lower breast density than white women.[5,6] Similarly, it remains unclear whether the breast cancer risks associated with breast density are the same for African American women compared to white women.[7] These studies are very limited by the small number of African American women included; thus, there is a need to conduct studies in populations with larger numbers of African American women to better study this problem.

Kristen Purrington, PhD, MPH and Mark Manning, PhD at Wayne State University (WSU) are conducting a retrospective study of breast density and breast cancer risk in African American and white women. The main goal of the study is to understand breast density patterns in African American women compared to white women, and how potential differences in breast density translate into differences in breast cancer risk between the two groups. Dr. Manning is also exploring the impact of women's breast density knowledge and awareness on anxiety and behaviors related to cancer risk and mammographic screening practices. The study team is determining the BI-RADS measure of breast density from radiology reports for more than 26,000 women (85% African American) who underwent routine mammographic screening from 2012-2014 at the Karmanos Cancer Institute in Detroit. The Metropolitan Detroit Cancer Surveillance System (MDCSS) will identify women within this group who were subsequently diagnosed with breast cancer to allow investigators to evaluate the association between breast density and cancer risk in this racially diverse group.

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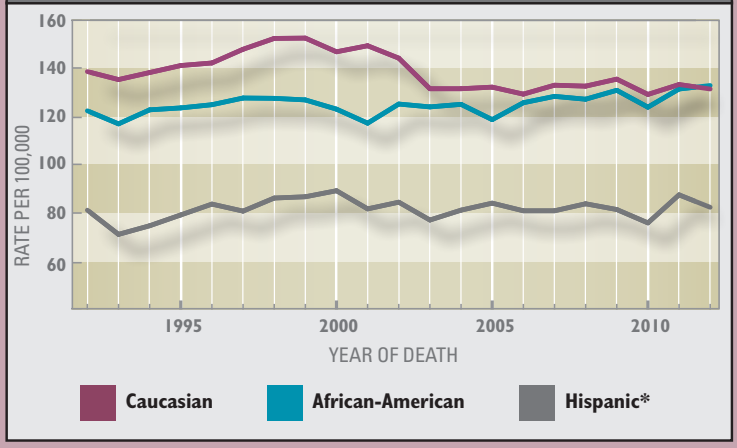
Age-Adjusted Incidence for Invasive Female Breast Cancers by Race/Hispanic Origin, U.S., 1992-2012



*Hispanic not exclusive of African American and Caucasian.
Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 13 Regs Research Data, Nov 2014 Sub (1992-2012) <Katrina/Rita Population Adjustment> - Linked To County Attributes - Total U.S., 1969-2013 Counties, Branch, released April 2015, based on the November 2014 submission. National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems.

Benign Breast Disease and Breast Cancer Risk in African American Women: The Detroit Cohort

Michele L. Cote, PhD

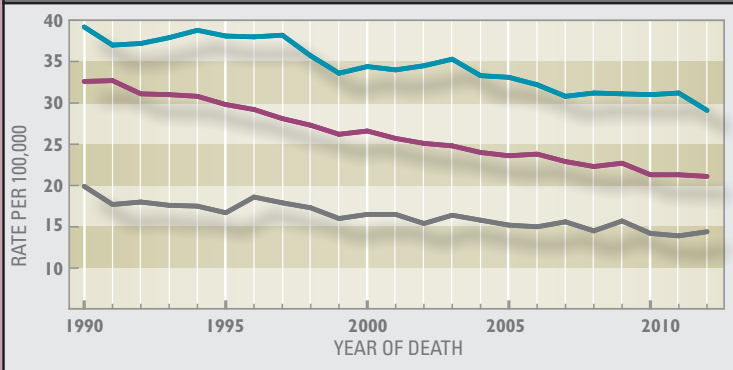
African American women suffer from disproportionately high breast cancer mortality rates, yet the majority of research investigating the molecular origins of this disease has taken place in white populations. An estimated 1.6 million breast biopsies are performed annually in the United States, and the vast majority are benign. Epidemiological studies suggest that benign breast disease is an important risk factor for breast cancer, but research has been limited in African American women.[1,2] Investigations of benign breast disease cohorts consisting primarily of white women have identified histological features associated with risk of breast cancer development: women with proliferative benign breast disease are at increased risk of breast cancer, and those with proliferative disease with atypia are at even greater risk.[3] Degree of involution, or atrophy of the breast that naturally occurs as part of the aging process, measured in the benign tissue also appears to be associated with reduced breast cancer risk, independent of breast density.[4] However, it is unknown to what extent the parameters defined in these studies can be directly applied to African American women.

In addition to clinical and pathological variables, standard tissue markers can be analyzed to classify breast cancers into subtypes that correspond to clinically significant predictors of treatment and survival outcomes.[5,6] This work also has primarily used white cohorts, thus it is unknown if these classification methods apply to African American women. The ability to assess molecular markers in both the biopsy and the tumor, as will be done in this study, provides insight into breast carcinogenesis in this population. Currently, from our group of 4,000 African American women with a benign breast cancer diagnosis, over 200 have developed a subsequent breast cancer. These cancers will be categorized into five subtypes (luminal A, luminal B HER2+, luminal B HER2-, non-luminal HER2+, triple negative) and will allow us to determine how the pathological characteristics found in the benign biopsies can be used to predict subtype of breast cancer, which can be used to optimize surveillance and treatment options.

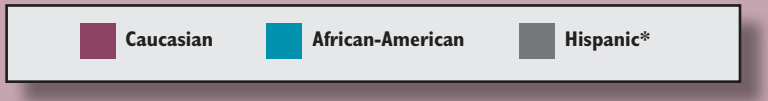
Successful completion of this project will provide insight into how benign breast disease progresses to breast cancer in African American women, and the extent of higher-risk biopsies (e.g., atypias) in this population. As the most common model for breast cancer development posits that breast cancer develops from nonproliferative lesions, to proliferative lesions with atypia, then to atypical hyperplasia, prior to development of carcinoma in situ, defining similarities and differences between these states in African American women and white women is critical to developing targeted prevention strategies. In addition, this project will provide estimates of the distribution of the molecular subtypes of breast cancer in this unique, "higher risk" population. These subtypes have been associated with prognosis across different patient populations and thus have high clinical significance. A better understanding of the molecular determinants that underlie breast carcinogenesis is essential to guide surveillance after a benign breast disease diagnosis, providing crucial information for a population with disproportionately high breast cancer mortality rates.

Dr. Cote and her colleagues have been awarded funding through Komen for the Cure© to examine benign breast disease pathology and breast density of approximately 4,000 African American women who had breast biopsies from 2001-2010 and to follow these women for breast cancer. They believe that detailed classification of benign breast biopsies from African American women will reveal novel and clinically useful features that define different levels of breast cancer risk.

Age-Adjusted Mortality for Invasive Female Breast Cancers by Race/Hispanic Origin, U.S., 1992-2012



Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 13 Regs Research Data, Nov 2014 Sub (1992-2012) <Katrina/Rita Population Adjustment> - Linked To County Attributes - Total U.S., 1969-2013 Counties, Branch, released April 2015, based on the November 2014 submission. National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems.



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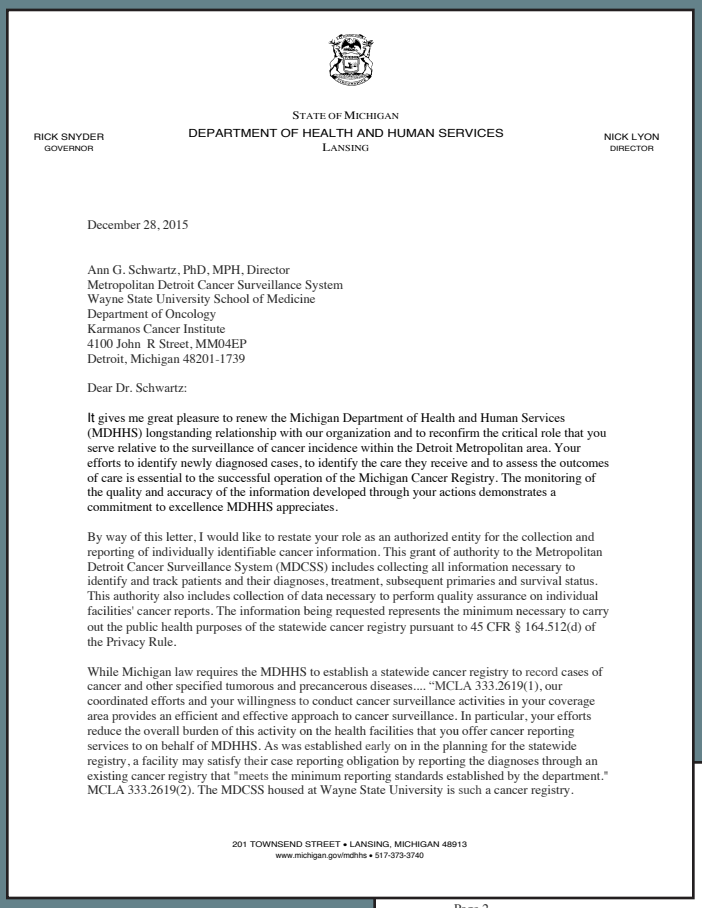
Michigan Department of Health and Human Services Collaboration and the MDCSS Authority to Collect Cancer Data

The longstanding collaboration between the State of Michigan Department of Health and Human Services (MDHHS) and the Metropolitan Detroit Cancer Surveillance System (MDCSS) was recently renewed by the State of Michigan. The following letter grants authority to the MDCSS to collect cancer data as a designated public health authority of the State. Because the MDCSS is designated by the MDHHS as a "state-authorized entity for the collection and reporting of individually identifiable cancer information," HIPAA allows hospitals to disclose such information to the MDCSS.



STATE OF MICHIGAN
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING

RICK SNYDER
GOVERNOR

NICK LYON
DIRECTOR

December 28, 2015

Ann G. Schwartz, PhD, MPH, Director
Metropolitan Detroit Cancer Surveillance System
Wayne State University School of Medicine
Department of Oncology
Karmanos Cancer Institute
4100 John R Street, MM04EP
Detroit, Michigan 48201-1739

Dear Dr. Schwartz:

It gives me great pleasure to renew the Michigan Department of Health and Human Services (MDHHS) longstanding relationship with our organization and to reconfirm the critical role that you serve relative to the surveillance of cancer incidence within the Detroit Metropolitan area. Your efforts to identify newly diagnosed cases, to identify the care they receive and to assess the outcomes of care is essential to the successful operation of the Michigan Cancer Registry. The monitoring of the quality and accuracy of the information developed through your actions demonstrates a commitment to excellence MDHHS appreciates.

By way of this letter, I would like to restate your role as an authorized entity for the collection and reporting of individually identifiable cancer information. This grant of authority to the Metropolitan Detroit Cancer Surveillance System (MDCSS) includes collecting all information necessary to identify and track patients and their diagnoses, treatment, subsequent primaries and survival status. This authority also includes collection of data necessary to perform quality assurance on individual facilities' cancer reports. The information being requested represents the minimum necessary to carry out the public health purposes of the statewide cancer registry pursuant to 45 CFR § 164.512(d) of the Privacy Rule.

While Michigan law requires the MDHHS to establish a statewide cancer registry to record cases of cancer and other specified tumorous and precancerous diseases.... "MCLA 333.2619(1), our coordinated efforts and your willingness to conduct cancer surveillance activities in your coverage area provides an efficient and effective approach to cancer surveillance. In particular, your efforts reduce the overall burden of this activity on the health facilities that you offer cancer reporting services to on behalf of MDHHS. As was established early on in the planning for the statewide registry, a facility may satisfy their case reporting obligation by reporting the diagnoses through an existing cancer registry that "meets the minimum reporting standards established by the department." MCLA 333.2619(2). The MDCSS housed at Wayne State University is such a cancer registry.

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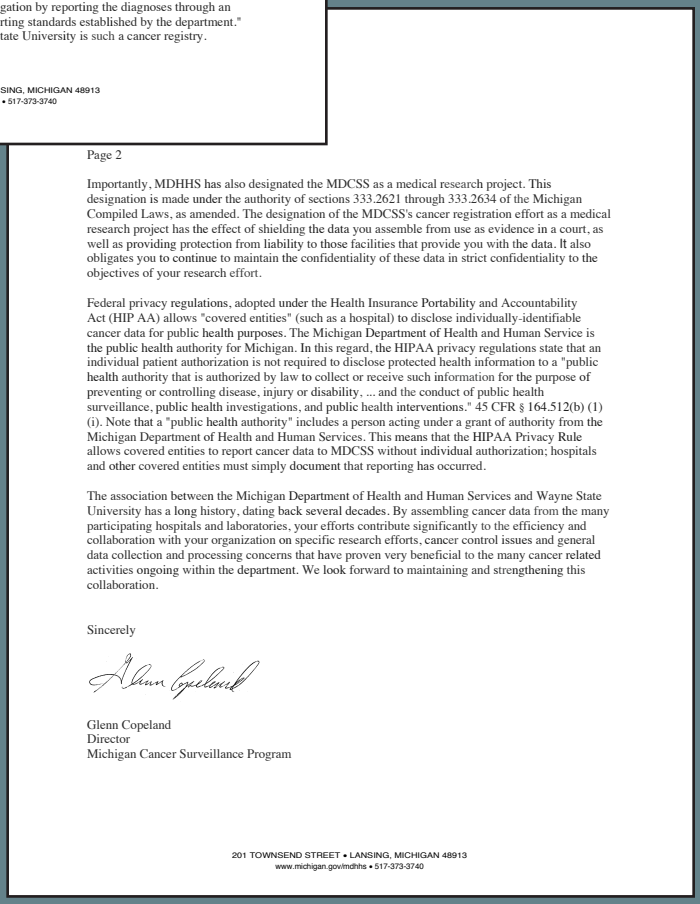

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Importantly, MDHHS has also designated the MDCSS as a medical research project. This designation is made under the authority of sections 333.2621 through 333.2634 of the Michigan Compiled Laws, as amended. The designation of the MDCSS's cancer registration effort as a medical research project has the effect of shielding the data you assemble from use as evidence in a court, as well as providing protection from liability to those facilities that provide you with the data. It also obligates you to continue to maintain the confidentiality of these data in strict confidentiality to the objectives of your research effort.

Federal privacy regulations, adopted under the Health Insurance Portability and Accountability Act (HIP AA) allows "covered entities" (such as a hospital) to disclose individually-identifiable cancer data for public health purposes. The Michigan Department of Health and Human Service is the public health authority for Michigan. In this regard, the HIPAA privacy regulations state that an individual patient authorization is not required to disclose protected health information to a "public health authority that is authorized by law to collect or receive such information for the purpose of preventing or controlling disease, injury or disability, ... and the conduct of public health surveillance, public health investigations, and public health interventions." 45 CFR § 164.512(b) (1) (i). Note that a "public health authority" includes a person acting under a grant of authority from the Michigan Department of Health and Human Services. This means that the HIPAA Privacy Rule allows covered entities to report cancer data to MDCSS without individual authorization; hospitals and other covered entities must simply document that reporting has occurred.

The association between the Michigan Department of Health and Human Services and Wayne State University has a long history, dating back several decades. By assembling cancer data from the many participating hospitals and laboratories, your efforts contribute significantly to the efficiency and collaboration with your organization on specific research efforts, cancer control issues and general data collection and processing concerns that have proven very beneficial to the many cancer related activities ongoing within the department. We look forward to maintaining and strengthening this collaboration.

Sincerely

Glenn Copeland
Director
Michigan Cancer Surveillance Program

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List of Studies Conducted at the Metropolitan Detroit Cancer Surveillance System

The Metropolitan Detroit Cancer Surveillance System participates in a number of collaborative research projects. A brief description of a sample of these projects conducted during the past 2 years follows.

Mesothelioma Health Care Resource Utilization

J. Beebe-Dimmer

The objective of the proposed investigation is to examine health care resource utilization (HRU) and associated costs among newly-diagnosed mesothelioma patients compared to a matched cohort of patients from the SEER-Medicare 5% non-cancer cases sample.

Mesothelioma in the United States: A SEER-Medicare Investigation of Treatment Patterns and Survival

J. Beebe Dimmer

The objective of the proposed investigation is to examine predictors of survival in a cohort of newly-diagnosed mesothelioma patients including first course and second course chemotherapy regimen.

Metropolitan Detroit Cancer Survivorship Cohort

J. Beebe-Dimmer

This internal grant supports Dr. Beebe-Dimmer as the PI of a pilot project to assemble a cohort of African American and white survivors of breast, prostate colorectal and lung cancer to address both short-term (quality of life, comorbidities and cancer care, the financial impact of diagnosis and treatment, genetic modifiers of response to treatment(s)) and long-term (recurrence and survival) outcomes after diagnosis. The patients participate in a web-based survey, consent for collection of tumor and medical records and donate a saliva specimen for genetic research.

MicroRNA in Prostate Cancer Racial Disparities and Aggressiveness

C. Bock

The objectives of this project are to 1) elucidate the relationships between genes in the miRNA biogenesis pathway and prostate cancer aggressiveness and recurrence, overall and by race,

2) determine associations between plasma levels of miRNAs and prostate cancer aggressiveness, and 3) determine the association between miRNA biogenesis pathway genes and levels of miRNAs that regulate genes in prostate cancer pathways. To increase the potential for translating our results into disease management strategies, we will include miRNAs with cell-line evidence of transcriptional regulation by miRNA promoter methylation and evidence of gene-expression regulation within prostate carcinogenic pathways.

Prostate Cancer Gene Identification within Candidate Region in African Americans

C. Bock/J. Boerner

This study will provide insight into genetic risk factors for prostate cancer through a thorough interrogation of a susceptibility region of the genome on chromosome7q31-32 previously identified in a sample of African American men. These genes may help explain racial disparities in incidence and mortality. Understanding genes involved in prostate carcinogenesis and progression in African American men will provide biological targets for reducing these disparities.

Benign Breast Disease and the Risk of Breast Cancer: The Detroit Cohort

M. Cote

This study aims to describe risk of breast cancer in African American women with benign breast disease by assessing pathologic characteristics of the benign lesions and molecular characteristics of the subsequent breast cancers.

Patterns of Care/Quality of Care Diagnoses Year 2014

I. Kato

The SEER Patterns of Care (POC) Study annually examines treatment patterns in the U.S. for rotating cancer sites. The 2015 POC Study will collect data on patients dignosed with stage IV colon cancer, chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), and multiple myeloma between January 1, 2014 and December 31, 2014.

Patient and Provider Influences on Disparities in Colorectal Cancer Care

A. Morris/I. Kato

The investigators seek to examine whether racial disparities in use of chemotherapy for stage III colorectal cancer are primarily due to socioeconomic, psychosocial and patient-provider relationship factors. The project has been conducted in collaboration with the Atlanta SEER registry under leadership of Dr. Morris at the University of Michigan.

Inflammation Pathways and COPD in the Development of Lung Cancer

A. Schwartz

The biologic mechanisms linking COPD and lung cancer are unknown, but chronic inflammation is likely to play a role. This study will evaluate SNPs and copy number variation in genes in inflammatory pathways. The study will expand on previous

List of Studies Conducted at the Metropolitan Detroit Cancer Surveillance System (cont.)

work by incorporating COPD phenotyping using CT diagnosis of emphysema and pulmonary function testing (PFT). It also will expand on the panel of genes beyond those few already evaluated, will incorporate copy number variation as well as non-synonymous and functional SNPs, and will include a large African-American population. There has not been a study of these pathway genes in African-Americans, a group that is less likely to report COPD, smokes fewer cigarettes, but is more likely to be diagnosed with lung cancer than whites. It is hypothesized that genetic variation in inflammation-related genes contributes to the development of lung cancer and this association varies by the presence or absence of COPD, and by race. The goal is to develop a genetic profile based on SNPs and copy number variation in inflammation pathway genes that predicts susceptibility to lung cancer with and without COPD in response to tobacco exposure.

Profiling Genetic Alterations in NSCLC in African Americans

A. Schwartz

This study aims to conduct a comprehensive analysis of genetic alterations in a large sample of African American lung cancer patients using a screening panel of known oncogenic mutations and alterations, followed by whole exome sequencing in those samples with no known mutations.

The Epidemiology of Ovarian Cancer in African-American Women

A. Schwartz/M. Cote

To address the lack of knowledge regarding ovarian cancer among African-American women, investigators at nine institutions in areas with relatively large numbers of African-Americans in the population (North Carolina, South Carolina, Georgia, Alabama, New Orleans, New Jersey, Ohio, Texas, and Detroit) will conduct a population-based, case-control study to assess etiologic risk factors for African-Americans. Further, we will obtain treatment and outcome information to evaluate prognostic factors in ovarian cancer cases. We anticipate that this study will provide a foundation to conduct studies of other cancers in African-American women in the future. We will expand the examination of genetic association to a more comprehensive genome-wide association study once data collection is complete.

Dr. Cote commenced rapid case ascertainment in December 2010 for the Metropolitan Detroit site of the multi-site study. The national collaboration will attempt to enroll 1,000 cases and 1,000 controls at nine sites across the U.S. The Detroit site started Biospecimen Collection in October, 2011 and will collect blood and tissue on 35 cases annually.

Cancer Screening, Treatment, and Survivor Surveillance Patterns among Arab Americans

K. Schwartz

The objective of this study is to compare screening patterns for breast and colorectal cancer among Arab American, African American, and White patients at the Henry Ford Health System. We will also examine adherence to recommended treatments for breast and colorectal cancer and describe post- treatment surveillance patterns for breast and colorectal cancer by population sub-group.

eHealth Activity among African American and White Cancer Survivors

H. Thompson /J. Beebe-Dimmer

The primary goal of this study is to examine the eHealth activities and personal health information management (PHIM) among cancer survivors using two strategies. In the first strategy, we will conduct mixed methods interviews in a population-based sample of 1230 African American and white breast, prostate, and colorectal cancer survivors in order to assess specific eHealth activities. These interviews will also support a theory-driven investigation of the social-structural and psychological predictors of eHealth activity. We will then select a subsample of 144 participants for an ethnographic study of PHIM in one's home in order to examine the role of eHealth in the context of all PHIM practices.

Improving Post-Treatment Resources for Latina Breast Cancer Survivors

H. Thompson/M. Cote

The primary goal of this study is to produce a DVD intervention that will identify key information points to be communicated to Latina survivors about recurrence and surveillance along with the personal narratives of Latina breast cancer survivor. In a randomized controlled trial, the study will then test the effect of this intervention on post-treatment breast cancer surveillance, specifically mammography surveillance, versus usual care. This study has the potential to control cancer burden among Latina survivors by supporting these women in surveillance strategies that can potentially lower breast cancer morbidity and mortality if a breast cancer recurrence or new breast cancer is detected at an early stage. The DVD intervention also has the potential to substantially improve clinical practice and the standard of care as they will be tools easily accessible to providers that can be used to prepare and empower Latina survivors in addressing their risk of breast cancer recurrence, a critical step in the journey of long-term survivorship.

Life Course Energy Balance and Breast Cancer Risk in Black/White Women Under 50

E. Velie /J. Beebe-Dimmer

Breast cancer in younger women (under age 50) is poorly understood and understudied. Moreover, it is associated with a worse prognosis than breast cancer in older women. Potentially 26 modifiable risk factors related to energy balance over the life course (e.g. growth and puberty patterns, body mass, insulin resistance, diet and physical activity) have been implicated in the etiology of breast cancer in younger women. The overall objective of this study is to investigate, in a socioeconomically diverse population of Black and White women, whether life course energy balance pathways are associated with breast cancer risk. The study will also investigate the association of energy balance with the different breast cancer molecular subtypes. Dr. Kendra Schwartz is the local PI for this National Cancer Institute funded study.

Why Don't More Men with Low-Risk Prostate Cancer Choose Active Surveillance

J. Xu/C. Bock

The objective of this study is to identify determinants of treatment choice in men with low-risk prostate cancer, particularly the factors that affect the offer, acceptance, and adherence of active surveillance as an initial management strategy. In addition, the study aims to identify determinants of urologists' treatment recommendations for men with low-risk prostate cancer and compare the quality of life between active surveillance and curative treatment groups over time.

Metropolitan Detroit Cancer Surveillance System/SEER Publications 2013-2015

2015

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Metropolitan Detroit Cancer Surveillance System Participating Institutions

The following hospitals, pathology laboratories and radiation oncology treatment facilities are participants in the Metropolitan Detroit Cancer Surveillance System. Their collaboration makes possible Detroit area population-based cancer reporting.

Hospitals and Associated Path Labs, Radiation Facilities and Clinics

- Beaumont Hospital – Royal Oak
- Beaumont Hospital – Troy
- Beaumont Hospital – Grosse Pointe
- Beaumont Hospital – Dearborn
- Beaumont Hospital – Wayne
- Beaumont Hospital – Taylor
- Beaumont Hospital – Trenton
- Beaumont Hospital – Farmington Hills
- Berry Surgery Center
- Children's Hospital of Michigan
- Crittenton Hospital
- Detroit Receiving Hospital
- DMC Sinai-Grace Hospital
- Doctors' Hospital of Michigan
- Garden City Hospital
- Harper University Hospital
- Henry Ford Hospital
- Henry Ford Macomb Hospital – Clinton Twp.
- Henry Ford Wyandotte Hospital
- Henry Ford West Bloomfield Hospital
- Huron Valley-Sinai Hospital
- Hutzel Women's Hospital
- John D. Dingell Dept. of Veterans Administration Medical Center
- Karmanos Cancer Institute
- McLaren Macomb
- McLaren Oakland
- Providence Hospital
- Providence Park Hospital, Novi
- St. John Hospital and Medical Center
- St. John Macomb-Oakland Hospital, Warren Campus
- St. John Macomb-Oakland Hospital, Madison Heights Campus
- St. Joseph Mercy Ann Arbor Hospital*
- St. Joseph Mercy Oakland Hospital
- St. Mary Mercy Livonia
- University Health Center
- University Hospital Ann Arbor*

Independent Pathology Laboratories

- Beaumont Reference Laboratory
- Bio-Reference Laboratories
- Bostwick Laboratories
- Comprehensive Medical Center
- Contemporary Imaging Associates
- Dermatopathology Associates
- Detroit Bio-Medical Laboratories
- Dianon Systems
- Genoptix Laboratory
- Hospital Consolidated Laboratories
- Mangini Dermatopathology
- Medical Diagnostic Lab
- Michigan Institute of Urology
- Mirica Life Sciences
- Novice Dermatopathology Lab
- Oakwood Medical Laboratory
- Oppenheimer Urologic Reference Laboratory
- Pinkus Laboratory
- Quest Diagnostics, Inc.
- St. John Oral Pathology

Independent Radiation/Oncology Facilities

- Clinical Oncology Associates
- Downriver Center for Oncology
- Radiation Therapy Associates
- 21st Century Oncology

*These hospitals are not located in the tri-county area.

Appendix A
Michigan Public Health Code and HIPAA (Excerpts)

Michigan Act 368 of 1978 and HIPAA Law and Federal Rules (Excerpts);
Public Law 104-191; 104th Congress; August 21, 1996

333.2619 Cancer registry; establishment; purpose; reports; records; rules; medical or department examination or supervision not required; contracts; evaluation of reports; publication of summary reports; commencement of reporting; effective date of section.

Sec. 2619.

(1) The department shall establish a registry to record cases of cancer and other specified tumorous and precancerous diseases that occur in the state, and to record information concerning these cases as the department considers necessary and appropriate in order to conduct epidemiologic surveys of cancer and cancer-related diseases in the state.

(2) Each diagnosed case of cancer and other specified tumorous and precancerous diseases shall be reported to the department pursuant to subsection (4), or reported to a cancer reporting registry if the cancer reporting registry meets standards established pursuant to subsection (4) to ensure the accuracy and completeness of the reported information. A person or facility required to report a diagnosis pursuant to subsection (4) may elect to report the diagnosis to the state through an existing cancer registry only if the registry meets minimum reporting standards established by the department.

(3) The department shall maintain comprehensive records of all reports submitted pursuant to this section. These reports shall be subject to the same requirements of confidentiality as provided in section 2631 for data or records concerning medical research projects.

(4) The director shall promulgate rules which provide for all of the following:

(a) A list of tumorous and precancerous diseases other than cancer to be reported pursuant to subsection (2).

(b) The quality and manner in which the cases and other information described in subsection (1) are reported to the department.

(c) The terms and conditions under which records disclosing the name and medical condition of a specific individual and kept pursuant to this section are released by the department.

(5) This section does not compel an individual to submit to medical or department examination or supervision.

(6) The department may contract for the collection and analysis of, and research related to, the epidemiologic data required under this section.

(7) Within 2 years after the effective date of this section, the department shall begin evaluating the reports collected pursuant to subsection (2). The department shall publish and make available to the public reports summarizing the information collected. The first summary report shall be published not later than 180 days after the end of the first 2 full calendar years after the effective date of this section. Subsequent annual summary reports shall be made on a full calendar year basis and published not later than 180 days after the end of each calendar year.

(8) Reporting pursuant to subsection (2) shall begin the next calendar year after the effective date of this section.

(9) This section shall take effect July 1, 1984.

History: Add. 1984, Act 82, Eff. July 1, 1984
Popular Name: Act 368

333.2621 Comprehensive policy for conduct and support of research and demonstration activities; conducting and supporting demonstration projects and scientific evaluations.

Sec. 2621.

(1) The department shall establish a comprehensive policy pursuant to and consistent with section 2611(2) for the conduct and support of research and demonstration activities related to the department's responsibility for the health care needs of the people of this state.

(2) The department shall conduct research and demonstration activities related to the department's responsibility for the environmental, preventive, and personal health needs of the communities and people of this state, including:

(a) The causes, effects, and methods of prevention of illness.

(b) The determinants of health, including behavior related to health.

(c) The accessibility, acceptability, availability, organization, distribution, utilization, quality, and financing of health care, especially those services for the medically needy.

(3) The department may conduct and support demonstration projects to carry out subsection (2).

(4) The department shall conduct or support the conduct of scientific evaluations of the effectiveness, efficiency, and relevance of programs conducted or supported by the department.

History: 1978, Act 368, Eff. Sept. 30, 1978
Popular Name: Act 368

333.2631 Data concerning medical research project; confidentiality; use.

Sec. 2631.

The information, records of interviews, written reports, statements, notes, memoranda, or other data or records furnished to, procured by, or voluntarily shared with the department in the conduct of a medical research project, or a person, agency, or organization which has been designated in advance by the department as a medical research project which regularly furnishes statistical or summary data with respect to that project to the department for the purpose of reducing the morbidity or mortality from any cause or condition of health are confidential and shall be used solely for statistical, scientific, and medical research purposes relating to the cause or condition of health.

History: 1978, Act 368, Eff. Sept. 30, 1978
Popular Name: Act 368

333.2632 Data concerning medical research project; inadmissible as evidence; exhibition or disclosure.

Sec. 2632.

The information, records, reports, statements, notes, memoranda, or other data described in section 2631 are not admissible as evidence in an action in a court or before any other tribunal, board, agency, or person. Furnishing the data to the department in the conduct of a medical research project or to a designated medical research project does not result in the loss of any privilege which the data may otherwise have making them inadmissible as evidence. The information, records, reports, notes, memoranda, or other data shall not be exhibited nor their contents disclosed in any way, in whole or in part, by the department or its representative, or by any other person, agency, or organization, except as is necessary for the purpose of furthering the medical research project to which they relate consistent with section 2637 and the rules promulgated under section 2678. A person participating in a designated medical research project shall not disclose the information obtained except in strict conformity with the research project.

History: 1978, Act 368, Eff. Sept. 30, 1978
Popular Name: Act 368

333.2633 Data concerning medical research projects; liability for furnishing.

Sec. 2633.

The furnishing of information, records, reports, statements, notes, memoranda, or other data to the department, either voluntarily or as required by this code, or to a person, agency, or organization designated as a medical research project does not subject a physician, hospital, sanatorium, rest home, nursing home, or other person or agency furnishing the information, records, reports, statements, notes, memoranda, or other data to liability in an action for damages or other relief, and is not considered to be the willful betrayal of a professional secret or the violation of a confidential relationship.

History: 1978, Act 368, Eff. Sept. 30, 1978 ;-- Am. 1988, Act 122, Eff. Mar. 30, 1989
Popular Name: Act 368

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SEC. 1178. EFFECT ON STATE LAW

(b) PUBLIC HEALTH.--Nothing in this part shall be construed to invalidate or limit the authority, power, or procedures established under any law providing for the reporting of disease or injury, child abuse, birth, or death, public health surveillance, or public health investigation or intervention.

(c) STATE REGULATORY REPORTING.--Nothing in this part shall limit the ability of a State to require a health plan to report, or to provide access to, information for management audits, financial audits, program monitoring and evaluation, facility licensure or certification, or individual licensure or certification.

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Source: http://aspe.hhs.gov/admnsimp/pl104191.htm (emphasis added)

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