Cancer in Manitoba

2010 ANNUAL STATISTICAL REPORT

Department of Epidemiology
& Cancer Registry

CancerCare Manitoba

Department of Epidemiology and Cancer Registry

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Vision

Through engaged partnerships, effective research, and knowledge exchange, generate relevant information on all essential facets of cancer control including prevention, screening, early detection, treatment, and palliation.

Mission

To enhance the development and evaluation of a cancer control strategy by collecting data, and conducting surveillance and research across the spectrum of cancer control in Manitoba.

Department of Epidemiology and Cancer Registry
2010 Report from the Managers

The focus of the Department of Epidemiology and Cancer Registry is to study the patterns of cancer in Manitoba and work towards understanding the reasons behind the trends. Responsible for maintaining and constantly improving the Manitoba Cancer Registry's database, the Department provides quality cancer data and consultation on statistical analysis and cancer epidemiology to CancerCare Manitoba programs, CancerCare Manitoba Foundation, Manitoba Health, Regional Health Authorities (RHAs), researchers, physicians, residents and students, provincial, national and international agencies, and to the private sector.

Not only is the Department a gateway to cancer information, it provides a reliable and skilled source of experts who transform raw data into useful information. Every year the Department of Epidemiology and Cancer Registry receives requests for data and analytic support. The information prepared by the Department not only offers valuable knowledge about how cancer affects Manitobans, the data also provide key insight into helping prevent cancer, detect it earlier or improve treatment.

Data Requests

YEAR	PROGRAM / PLANNING	SURVEILLANCE	RESEARCH	TOTAL
2006	16	13	17	46
2007	35	13	31	79
2008	17	21	21	59
2009	30	15	31	76
2010	29	25	38	92

Given increasing demands, additional complexity, more stringent standards, and an overall dynamic changing health care system, the Department needs to have the right level of skilled resources and tools to support its stakeholders to continue providing the high level of expertise our partners have come to expect. The Department was involved in a variety of initiatives in 2010.

Highlights include:

- **Data Quality**

  We are pleased to report that the Manitoba Cancer Registry has submitted their 2010 data to the North American Association for Central Cancer Registries (NAACCR) for certification. We have achieved gold certification in the past for complete, accurate, and timely data – a distinction we've held since 2006.

- **Staging**

  Recognized as a leader in capturing stage amongst North American cancer registries, the Registry was part of a first-of-its-kind initiative to standardize the collection of cancer stage information across Canada through the support of the Canadian Partnership Against Cancer which wrapped up in March 2012.

  The Registry's goal was to improve the timeliness and quality of pathology reporting, classifying and coding into the Registry by implementing electronic pathology into its database, and advance the quality of cancer registry data. The Registry is now receiving electronic pathology reporting (ePath) from all private and public labs across Manitoba.

- **Clinical Outcomes**

  To evaluate drug utility, clinical outcomes and cost-effectiveness of new, expensive cancer medicines, the Manitoba Oncology Drug Utility and Clinical Outcomes Program (MODUCO) was created. To reflect the wide mandate of the program, MODUCO subcommittee members were selected from the Department of Epidemiology and Cancer Registry, as well as representatives from key disease site groups, the Provincial Oncology Drug Program and basic cancer researchers. The group is currently in the process of detailing the evaluation of several expensive cancer drugs for treatment of a number of solid tumour and hematological cancers.

- **Prevention**

  The Department was heavily involved in knowledge exchange activities related to Manitoba's 2009 Youth Health Survey, a report containing baseline data on the chronic disease risk factors of Manitoba students in grades 9-12. Feedback reports on the results were produced at the school, school division and RHA level. Based on these findings, local initiatives are being led through multi-level leadership including schools, school divisions, RHAs, non-governmental organizations, government departments and the public.

Manitoba researchers discovered that smoking bans may play a part in assisting youth maintain the resolve to be a non-smoker. Additionally for youth who do not currently smoke, the odds of considering the habit increase by having a sibling who smokes, the absence of a total household smoking ban, and riding in a vehicle with a smoker.

Based on the findings of these studies, CCMB developed promotional materials to educate the public about the benefits of household and vehicle smoking bans and support tobacco-free homes and vehicles. Funded by the CancerCare Manitoba Foundation, *The Butt Stops Here* campaign includes a window cling that can be placed in homes or vehicles to declare the space tobacco-free.

- **System Performance**

Measurement is an essential part of good cancer system management because it allows us to focus on improving both the health of our community and the care we provide. Made possible through a coordinated process of collecting data on a variety of indicators, the Canadian Partnership Against Cancer's 2010 System Performance Report, the product of a collaborative effort among the Partnership, Statistics Canada and the provincial cancer agencies, examined key activities of the cancer system from prevention and screening to supportive care and survivorship.

The report shows:

- there is variability in cancer services and outcomes
- some variation in cancer services do not immediately translate into differences in cancer outcomes
- not all provinces have data readily available, though Manitoba does. In particular, Manitoba has captured 100% of the population-wide cancer stage data.

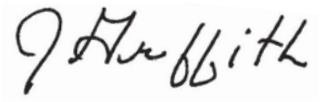
- **Benchmarking**

Six countries - Australia, Canada, Denmark, Norway, Sweden and the United Kingdom - were chosen to participate in the International Cancer Benchmark Partnership (ICBP) a UK-led study based on comparable wealth, universal access to health care and high quality data collection. CancerCare Manitoba, on behalf of Manitoba, was one of four Canadian provinces invited to participate in the ICBP, given its recognized strength in data collection and analytic expertise.

The study compared survival rates of breast, colorectal, lung and ovarian cancer from 1995 – 2007 in increments of one to five year survival rates. The ICBP found that survival improved for all four cancers in the participant countries over that time period, with Canada, Australia and Sweden having the highest survival rates. Survival was generally lowest in Denmark and the United Kingdom, with Norway falling in the middle.

The Department is recognized for its ability to provide key knowledge, data collection and analytical expertise. We utilize many sources, Manitoba hospitals, clinics, physicians, Diagnostic Services of Manitoba, Gamma DynaCare Labs, Manitoba Health, and Manitoba Vital Statistics Agency, to obtain the data collected in the Cancer Registry. We acknowledge this important collaboration, and are grateful for their support.

We are so very proud of the work we do relating to surveillance, analytical and evaluative epidemiological research, and with our efforts to engage public health professionals and the general public on the importance of cancer and cancer initiatives. To hear more about us and the work that we do, please see the story on page 16.



Dr. Jane Griffith

MANAGER, EPIDEMIOLOGY UNIT
CancerCare Manitoba

Gail Noonan

MANAGER, MANITOBA CANCER REGISTRY
CancerCare Manitoba

Introduction to the Data

The Manitoba Cancer Registry is an essential tool for evidence-based, data-driven decision making that has an immense impact on treatment and research. This year's report is based on the following information.

NOTE: All statistics in the body of this report only include Manitoba residents.

Manitoba Cancer Registry data is used for:

- health care planning and monitoring
- surveillance and studies on the causes and prevention of cancer, cancer clusters, treatment patterns, outcomes and survival
- patient care
- quality assurance
- reporting to the Canadian Cancer Registry, the North American Association of Central Cancer Registries and the International Association of Cancer Registries

Information sources include:

- provincial cytology and pathology departments
- admission/separation data from the provincial hospital abstracting system
- Vital Statistics
- letters and "Report of Malignant Neoplasm Forms" from physicians and other health care providers
- hospital health records
- correspondence from other provincial and territorial cancer registries on Manitoba residents diagnosed and/or treated in those jurisdictions

Incidence data

Incidence refers to the number of new cases of cancer diagnosed in Manitoba every year. Cancer cases referenced were diagnosed in the 2010 calendar year. Incidence is also provided by stage of disease at diagnosis.

The Manitoba Cancer Registry uses disease site groupings according to the International Classification of Diseases for Oncology Third Edition (ICD-O3), based on Surveillance Epidemiology and End Results (SEER) Groups. The primary site groupings used for incidence can be found in Appendix 3.

Mortality data

Mortality information refers to Manitobans who died of cancer in the 2010 calendar year, however those patients may not have been diagnosed in 2010. This information is provided by Manitoba's Vital Statistics Agency. The totals in the summary on page 7 (Mortality by site, 2010) include all cancer deaths occurring in Manitoba. The Manitoba Cancer Registry uses disease site groupings according to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10).

Rates

Incidence and mortality counts and rates are all presented in this report. Annual age-standardized rates are per 100,000 population and allow for comparison of cancer rates in different regions with different age structures. Rates are age-standardized (using the direct method) to the 2001 Manitoba population.

Staging data

The Manitoba Cancer Registry implemented the Collaborative Stage Data Collection System for all cases of cancer (excluding non-melanoma skin) diagnosed January 1, 2004 and forward. This data derives the "best stage" grouping consistent with the AJCC Cancer Staging Manual, 7th edition.

In this report, stage data is shown for all disease site groups with a cancer incidence of 45 cases per year or more and is represented using pie charts. Additionally, stage information, along with frequency of incidence for each of these sites, can be found in table format on page 14.

Population data

Data are based on Manitoba estimates provided by Manitoba Health.

Additional statistical information is available upon request. Please contact the Manitoba Cancer Registry at (204) 787-2174 or email epi.cancerregistry@cancercare.mb.ca.

Manitoba's Cancer Profile

Facts & Figures

Cancer is a significant health issue. In 2010, 9,715 Manitobans were diagnosed with cancer:

- 6,103 invasive cancers
- 3,285 in situ (confined to the area of origin)
- 327 unspecified cancers

In this same year, 2,703 people died from the disease.

The number of cancer cases in Manitoba is influenced by three factors:

- the age of the population
- the size of the population
- risk factors such as unhealthy living (including smoking, poor diet, inactivity, sun exposure), some environmental carcinogens, genetic predisposition and not being screened.

Most Common Cancer Diagnoses, 2010

Incidence

Male

SITE	CASES
Prostate	737
Colorectal	445
Lung & bronchus	414
Kidney	149
Non-Hodgkin lymphoma	139
Bladder	97
Melanoma of the skin	93
Pancreas	89
Stomach	66
Chronic lymphocytic leukemia	62

Female

SITE	CASES
Breast	848
Lung & bronchus	442
Colorectal	422
Uterus	215
Non-Hodgkin lymphoma	136
Ovary	91
Thyroid	90
Pancreas	80
Melanoma of the skin	78
Kidney	73

Total

SITE	CASES
Colorectal	867
Breast	857
Lung & bronchus	856
Prostate	737
Non-Hodgkin lymphoma	275
Kidney	222
Corpus Uteri	215
Melanoma of the skin	171
Pancreas	169
Bladder	125

Mortality

Male

SITE	CASES
Lung & bronchus	334
Colorectal	186
Prostate	178
Pancreas	62
Esophagus	53
Kidney	45
Bladder	44
Stomach	39
Non-Hodgkin lymphoma	39
Brain	33

Female

SITE	CASES
Lung & bronchus	328
Breast	192
Colorectal	146
Pancreas	74
Ovary	64
Non-Hodgkin lymphoma	42
Uterus	29
Other digestive system	28
Brain	27
Kidney	24

Total

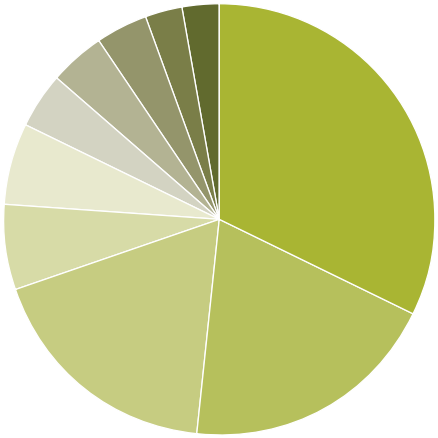
SITE	CASES
Lung & bronchus	662
Colorectal	332
Breast	194
Prostate	178
Pancreas	136
Non-Hodgkin lymphoma	81
Esophagus	70
Kidney	69
Ovary	64
Bladder	61

Cancer Incidence by Site

Invasive cancers only

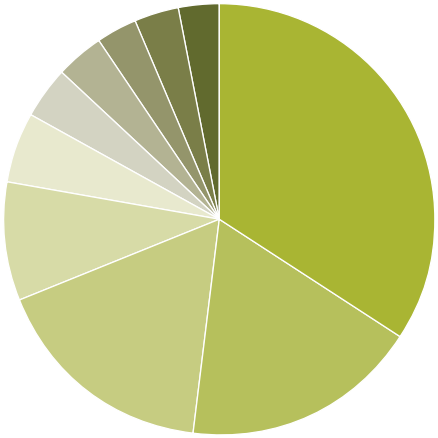
Cancer Incidence by Site, Male

- 24.5% prostate
- 14.8% colorectal
- 13.7% lung & bronchus
- 4.9% kidney
- 4.6% non-Hodgkin lymphoma
- 3.2% bladder
- 3.1% melanoma of the skin
- 2.9% pancreas
- 2.2% stomach
- 2.0% chronic lymphocytic leukemia



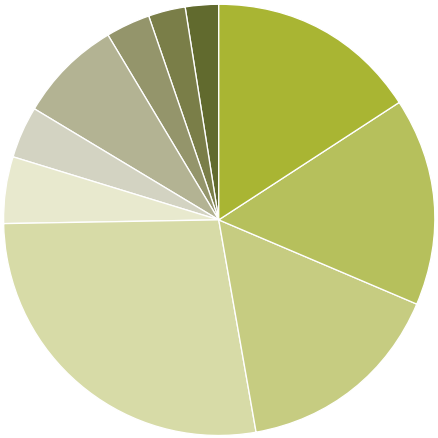
Cancer Incidence by Site, Female

- 27.3% breast
- 14.2% lung & bronchus
- 13.6% colorectal
- 6.9% corpus uteri
- 4.4% non-Hodgkin lymphoma
- 2.9% ovary
- 2.9% thyroid
- 2.6% pancreas
- 2.6% melanoma of the skin
- 2.3% kidney



Cancer Incidence by Site, Total

- 14.2% colorectal
- 14.0% breast
- 14.0% lung & bronchus
- 12.0% prostate
- 4.5% non-Hodgkin lymphoma
- 3.6% kidney
- 3.5% corpus uteri
- 2.8% melanoma of the skin
- 2.8% pancreas
- 2.1% bladder

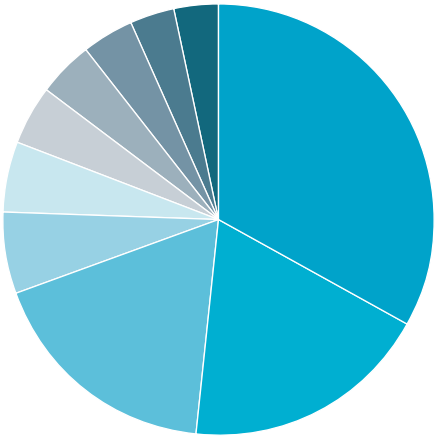


Cancer Mortality by Site

Invasive cancers only

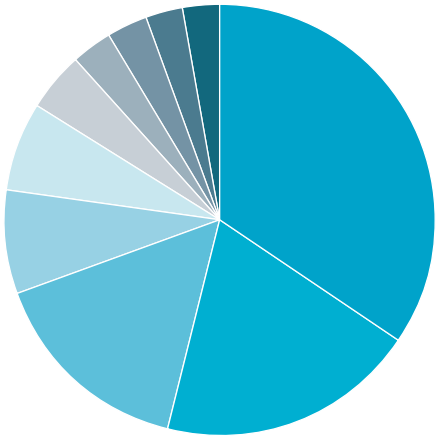
Cancer Mortality by Site, Male

- 25.2% lung & bronchus
- 14.0% colorectal
- 13.4% prostate
- 4.7% pancreas
- 4.0% esophagus
- 3.4% kidney
- 3.3% bladder
- 2.9% stomach
- 2.9% non-Hodgkin lymphoma
- 2.5% brain



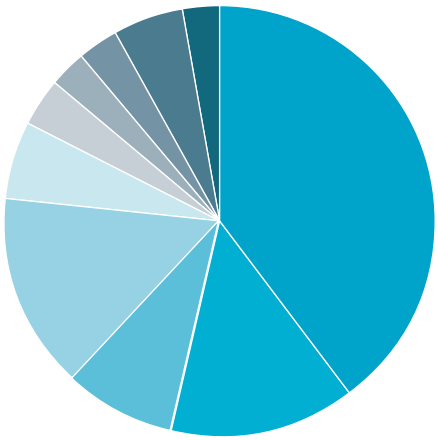
Cancer Mortality by Site, Female

- 25.5% lung & bronchus
- 14.9% breast
- 11.4% colorectal
- 5.7% pancreas
- 5.0% ovary
- 3.3% non-Hodgkin lymphoma
- 2.3% corpus uteri
- 2.2% other digestive system
- 2.1% brain
- 1.9% kidney



Cancer Mortality by Site, Total

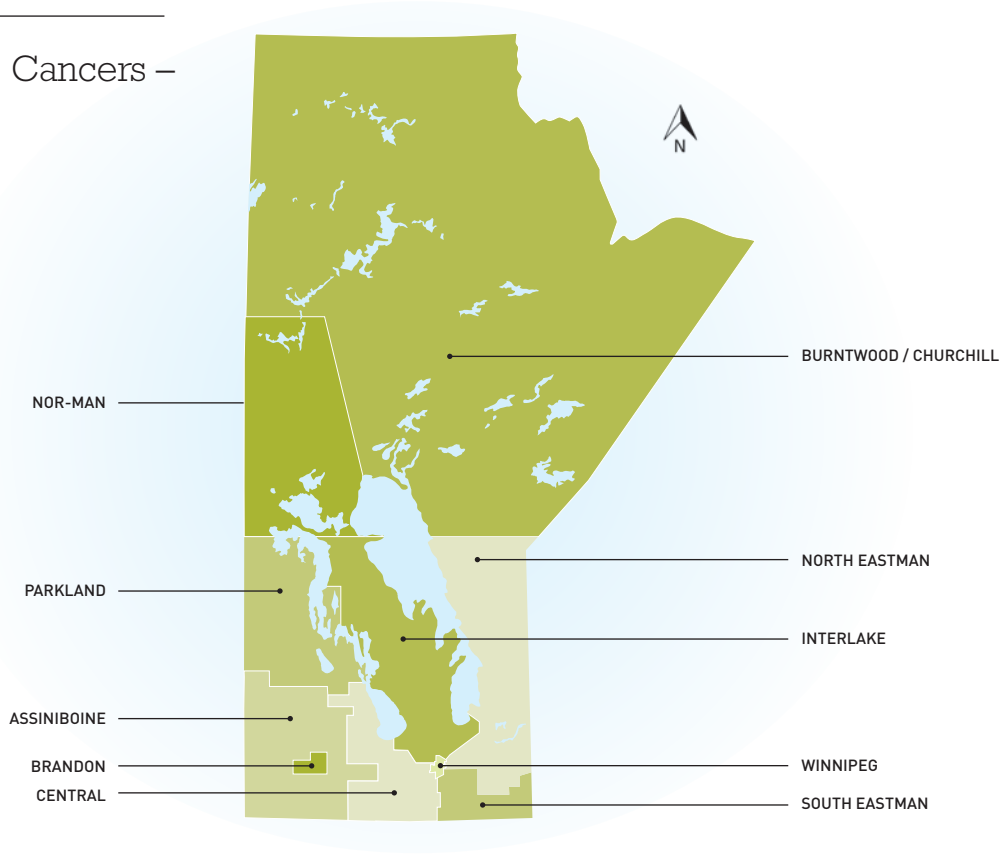
- 25.3% lung & bronchus
- 12.7% colorectal
- 7.4% breast
- 6.8% prostate
- 5.2% pancreas
- 3.1% non-Hodgkin lymphoma
- 2.7% esophagus
- 2.6% kidney
- 3.0% ovary
- 2.3% bladder



2010 All Invasive Cancers – Male *Incidence*

Age-standardized rate per 100,000
Standard population: Manitoba 2001
Out of province residents excluded.

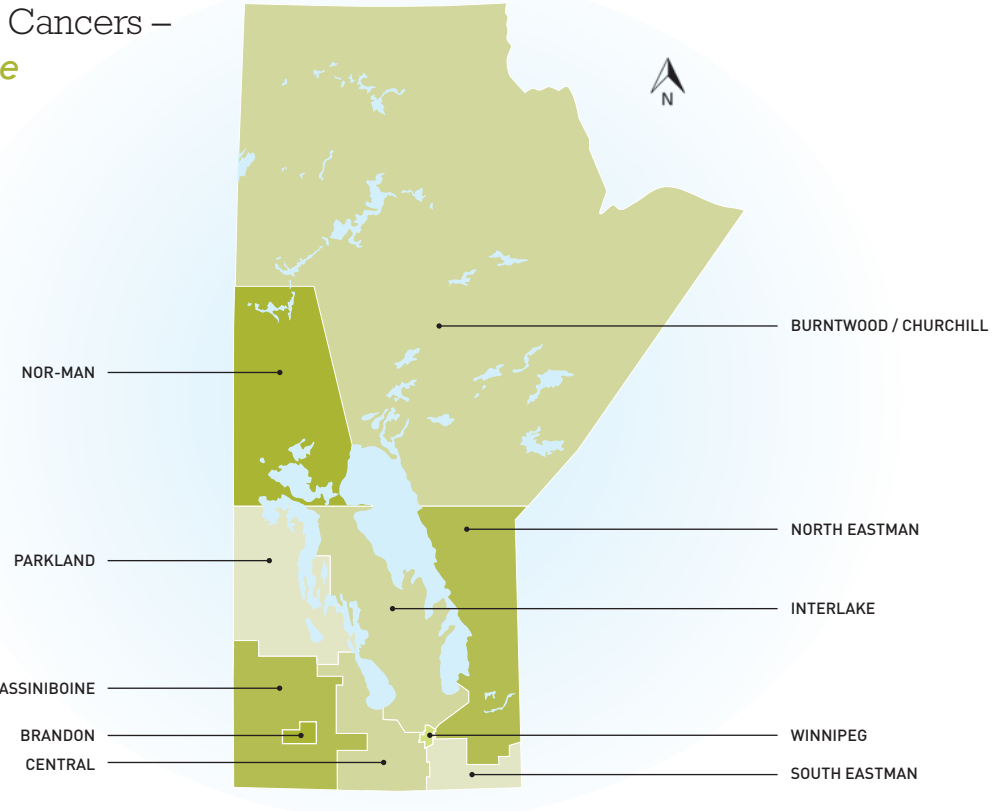
- 452 - 461
- 462 - 503
- 504 - 506
- 507 - 519
- 520 - 631



2010 All Invasive Cancers – Female *Incidence*

Age-standardized rate per 100,000
Standard population: Manitoba 2001
Out of province residents excluded.

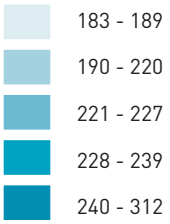
- 355 - 388
- 389 - 404
- 405 - 445
- 446 - 473
- 474 - 486

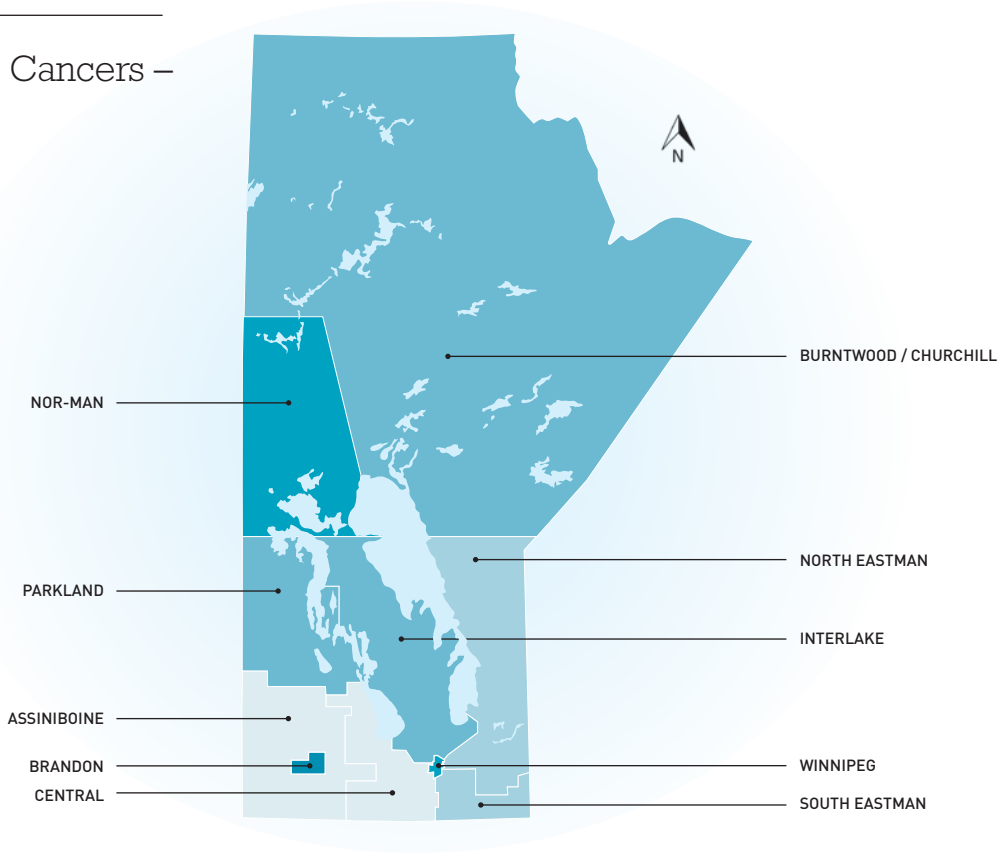


IN MAY 2012, MANITOBA'S 11 REGIONAL HEALTH AUTHORITIES WERE MERGED INTO FIVE REGIONS. THESE MAPS REFLECT STATISTICS AND BOUNDARIES FROM 2010.

2010 All Invasive Cancers – Male *Mortality*

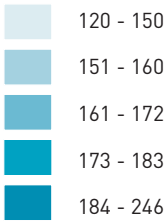
Age-standardized rate per 100,000
Standard population: Manitoba 2001
Out of province residents excluded.

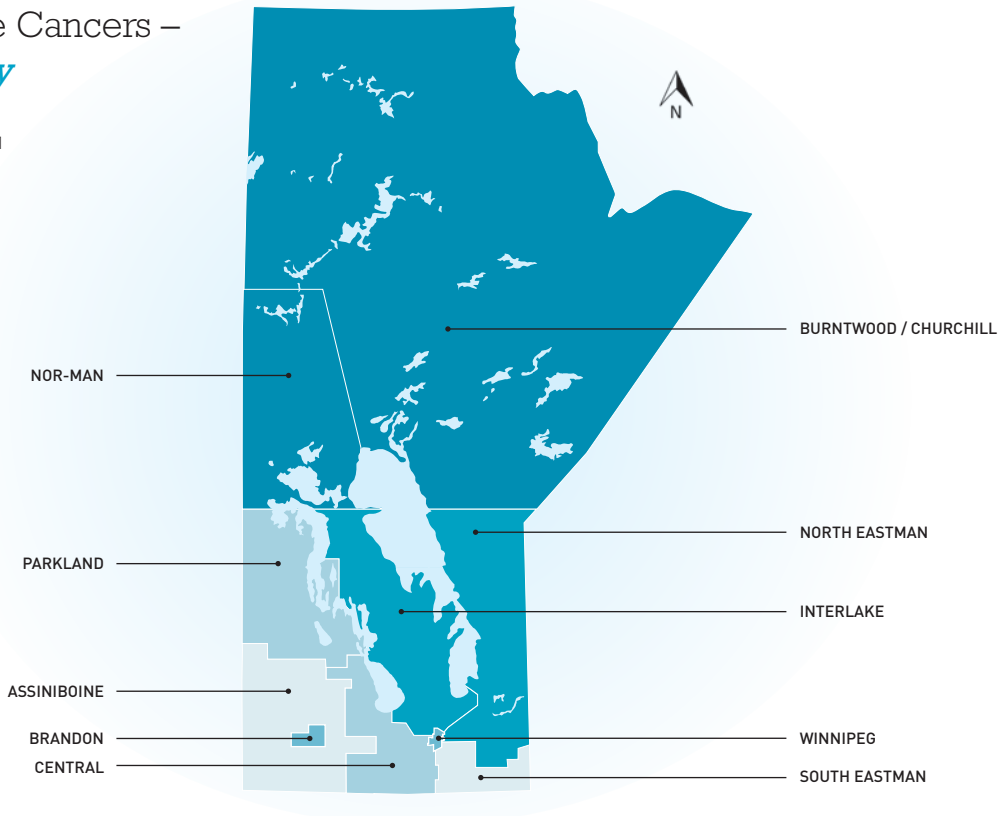




2010 All Invasive Cancers – Female *Mortality*

Age-standardized rate per 100,000
Standard population: Manitoba 2001
Out of province residents excluded.





IN MAY 2012, MANITOBA'S 11 REGIONAL HEALTH AUTHORITIES WERE MERGED INTO FIVE REGIONS. THESE MAPS REFLECT STATISTICS AND BOUNDARIES FROM 2010.

Cancer Incidence - Cases and Rates in Manitoba by Site, 2010

	CANCER SITE	0-29			30-39			40-49			50-59			60-69			70-79			80+			TOTAL COUNT			*ASIR		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
BUCCAL CAVITY & PHARYNX	Lip	0	0	0	1	1	2	0	1	1	1	2	3	10	2	12	6	2	8	3	3	6	21	11	32	3.42	1.56	2.41
	Tongue	0	0	0	1	1	2	2	0	2	3	4	7	10	5	15	4	3	7	2	3	5	22	16	38	3.45	2.20	2.80
	Major salivary gland	0	3	3	0	0	0	0	1	1	1	3	4	3	2	5	0	1	1	2	0	2	6	10	16	0.94	1.51	1.17
	Floor of mouth	0	0	0	0	0	0	1	1	2	2	0	2	9	0	9	2	1	3	0	1	1	14	3	17	2.02	0.46	1.24
	Gum & other mouth	0	0	0	0	0	0	0	0	0	3	2	5	6	3	9	1	3	4	0	5	5	10	13	23	1.39	1.72	1.65
	Nasopharynx	0	0	0	0	0	0	2	1	3	2	1	3	3	0	3	0	0	0	0	0	0	7	2	9	1.02	0.31	0.66
	Oropharynx	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	2	2	2	3	5	3	6	9	0.55	0.80	0.68
	Hypopharynx	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	3	0	3	2	0	2	7	0	7	1.30	0.00	0.57
	Other buccal cavity & pharynx	0	0	0	1	0	1	1	0	1	6	1	7	10	0	10	1	0	1	2	0	2	21	1	22	3.10	0.14	1.54
DIGESTIVE	Esophagus	0	0	0	0	0	0	5	0	5	6	1	7	15	3	18	11	2	13	8	4	12	45	10	55	7.45	1.31	4.13
	Stomach	0	0	0	0	1	1	6	2	8	14	5	19	17	4	21	10	6	16	19	18	37	66	36	102	11.04	4.77	7.58
	Small intestine	0	0	0	0	0	0	1	2	3	3	4	7	4	1	5	3	1	4	2	4	6	13	12	25	2.10	1.64	1.86
	Colon excluding rectum	0	0	0	3	3	6	13	11	24	47	35	82	68	62	130	82	74	156	71	121	192	284	306	590	48.74	41.22	44.71
	Rectum & rectosigmoid	2	0	2	1	1	2	12	9	21	31	16	47	45	24	69	53	37	90	17	29	46	161	116	277	26.59	16.47	21.31
	Anus	0	0	0	0	0	0	0	1	1	1	2	3	3	6	9	1	0	1	0	3	3	5	12	17	0.73	1.55	1.18
	Liver	1	0	1	0	0	0	2	0	2	8	2	10	4	1	5	11	3	14	3	1	4	29	7	36	4.89	1.01	2.81
	Gallbladder	0	0	0	0	0	0	0	1	1	0	2	2	1	0	1	2	8	10	2	7	9	5	18	23	0.93	2.58	1.85
	Pancreas	0	1	1	0	1	1	4	1	5	19	4	23	20	13	33	24	26	50	22	34	56	89	80	169	15.11	10.93	12.91
	Other digestive system	1	0	1	0	0	0	0	0	0	1	5	6	10	4	14	7	5	12	4	13	17	23	27	50	3.80	3.50	3.72
RESPIRATORY	Larynx	0	0	0	1	0	1	2	0	2	9	4	13	14	2	16	9	2	11	4	0	4	39	8	47	6.18	1.13	3.47
	Lung & bronchus	0	1	1	2	1	3	17	13	30	43	55	98	130	121	251	143	140	283	79	111	190	414	442	856	70.44	61.50	65.26
	Other respiratory system	0	1	1	1	0	1	0	0	0	2	0	2	3	1	4	2	1	3	1	5	6	9	8	17	1.45	1.03	1.28
	Bones & joints	1	3	4	1	0	1	0	0	0	1	0	1	1	1	2	0	0	0	1	2	3	5	6	11	0.82	0.86	0.84
	Soft tissue (Including heart)	3	1	4	1	2	3	2	2	4	2	2	4	5	2	7	5	1	6	5	1	6	23	11	34	3.96	1.69	2.66
	Kaposi sarcoma	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	3	0	3	5	0	5	0.92	0.00	0.37
	Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	6	1	7	6	0	6	3	0	3	15	1	16	2.58	0.13	1.21
	Melanoma of the skin	0	5	5	3	5	8	12	14	26	22	16	38	25	8	33	15	12	27	16	18	34	93	78	171	15.14	11.46	13.06
	Breast	0	3	3	2	34	36	0	117	117	1	190	191	0	229	229	3	151	154	3	124	127	9	848	857	1.71	121.50	64.74
FEMALE GENITAL	Cervix uteri		5			7			10			5			6			2			5			40			6.23	
	Corpus uteri		0			6			20			59			67			40			23			215			30.43	
	Uterus, NOS		0			0			1			1			0			1			0			3			0.48	
	Ovary		3			6			12			20			20			17			13			91			13.29	
	Other female genital system		1			3			8			5			6			9			7			39			5.87	

		20-29			30-39			40-49			50-59			60-69			70-79			80+			All Ages			Crude Rate			ASR*		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
MALE GENITAL	Prostate	0			1			12			115			274			221			114			737			120.53					
	Testis	22			9			5			2			1			0			1			40			6.77					
	Penis	0			0			0			0			2			1			0			3			0.46					
	Other male genital system	0			0			0			0			2			0			1			3			0.47					
URINARY	Bladder	1	0	1	0	0	0	3	0	3	11	1	12	26	5	31	25	5	30	31	17	48	97	28	125	**16.85**	**3.54**	**9.38**			
	Kidney	2	0	2	0	2	2	13	9	22	36	19	55	45	14	59	35	15	50	18	14	32	149	73	222	**23.94**	**10.40**	**16.67**			
	Ureter	0	0	0	0	0	0	1	0	1	0	0	0	2	0	2	1	0	1	0	0	0	4	0	4	**0.63**	**0.00**	**0.31**			
	Other urinary system	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	2	1	3	4	**0.20**	**0.42**	**0.30**			
	Eye	0	1	1	0	1	1	0	0	0	0	0	0	1	1	2	3	0	3	1	1	2	5	4	9	**0.92**	**0.59**	**0.72**			
BRAIN &OTHER NERVOUS	Brain	6	4	10	2	2	4	4	4	8	6	7	13	6	8	14	11	6	17	4	5	9	39	36	75	**6.63**	**5.29**	**5.88**			
	Other nervous system	2	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	**0.50**	**0.00**	**0.25**			
ENDOCRINE	Thyroid	1	9	10	4	16	20	7	20	27	4	20	24	10	15	25	4	6	10	2	4	6	32	90	122	**5.18**	**14.06**	**9.63**			
	Other endocrine	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	1	2	3	**0.16**	**0.33**	**0.26**			
LYMPHOMA	Hodgkin lymphoma	3	10	13	0	0	0	1	1	2	2	0	2	2	2	4	1	0	1	1	1	2	10	14	24	**1.60**	**2.25**	**1.89**			
	Non-Hodgkin lymphoma	5	5	10	5	1	6	8	7	15	25	22	47	39	31	70	32	33	65	25	37	62	139	136	275	**23.05**	**18.91**	**20.81**			
	Multiple myeloma	0	0	0	0	0	0	4	2	6	6	3	9	7	6	13	19	11	30	7	15	22	43	37	80	**7.58**	**5.06**	**6.29**			
LEUKEMIAS	Acute lymphocytic	5	2	7	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	7	2	9	**1.15**	**0.34**	**0.74**			
	Chronic lymphocytic	0	0	0	0	0	0	1	1	2	12	4	16	19	8	27	18	9	27	12	14	26	62	36	98	**10.28**	**4.83**	**7.34**			
	Acute myeloid	1	3	4	1	1	2	1	1	2	2	2	4	5	3	8	13	7	20	7	3	10	30	20	50	**5.43**	**3.03**	**4.02**			
	Chronic myeloid	0	0	0	0	0	0	2	2	4	4	0	4	3	1	4	2	3	5	3	5	8	14	11	25	**2.29**	**1.55**	**1.92**			
	Other leukemias	1	0	1	0	1	1	0	0	0	2	1	3	3	0	3	0	2	2	3	3	6	9	7	16	**1.45**	**0.99**	**1.19**			
	Other, ill defined & unknown	2	3	5	0	0	0	3	8	11	19	8	27	27	26	53	38	28	66	42	53	95	131	126	257	**23.02**	**17.00**	**19.53**			
	TOTAL - ALL INVASIVE	**61**	**64**	**125**	**40**	**96**	**136**	**149**	**283**	**432**	**476**	**534**	**1010**	**898**	**715**	**1613**	**829**	**678**	**1507**	**549**	**731**	**1280**	**3002**	**3101**	**6103**	**500.88**	**437.88**	**463.00**			
IN SITU	Other skin & in situ	4	14	18	20	23	43	72	112	184	215	181	396	370	253	623	397	292	689	392	387	779	1470	1262	2732	**252.79**	**175.74**	**207.75**			
	Breast in situ	0	0	0	0	1	1	0	15	15	0	32	32	0	30	30	0	21	21	0	5	5	0	104	104	**0.00**	**15.05**	**7.77**			
	Cervix in situ		70			49			34			16			5			3			0			177			**30.19**					
	Prostate in situ	0			0			1			7			10			4			1			23			**3.43**					
	Bladder in situ	0	0	0	0	0	0	5	0	5	9	5	14	31	9	40	31	11	42	28	10	38	104	35	139	**17.98**	**4.80**	**10.54**			
	Other in situ (Excl. Breast, Skin, Cervix, Prostate, Bladder)	1	0	1	3	7	10	7	16	23	29	17	46	36	44	80	58	33	91	33	26	59	167	143	310	**28.72**	**20.46**	**23.83**			
	TOTAL - INVASIVE & IN SITU	**66**	**148**	**214**	**63**	**176**	**239**	**234**	**460**	**694**	**736**	**785**	**1521**	**1345**	**1056**	**2401**	**1319**	**1038**	**2357**	**1003**	**1159**	**2162**	**4766**	**4822**	**9588**	**803.79**	**684.12**	**729.55**			
	Brain uncertain & unspecified	2	1	3	0	0	0	1	0	1	0	2	2	0	0	0	5	0	5	3	7	10	11	10	21	**2.10**	**1.24**	**1.66**			
	Neoplasms (Uncertain & unspecified, excluding brain)	8	4	12	3	9	12	2	13	15	14	23	37	24	32	56	30	20	50	25	25	50	106	126	232	**18.27**	**17.99**	**17.71**			
	Brain & nervous system benign	1	1	2	0	4	4	2	2	4	9	19	28	2	8	10	2	8	10	7	9	16	23	51	74	**3.82**	**7.21**	**5.50**			
	ALL CANCERS	**77**	**154**	**231**	**66**	**189**	**255**	**239**	**475**	**714**	**759**	**829**	**1588**	**1371**	**1096**	**2467**	**1356**	**1066**	**2422**	**1038**	**1200**	**2238**	**4906**	**5009**	**9915**	**827.97**	**710.55**	**754.43**			

* Age-standardized incidence rate per 100,000
Standard population: Manitoba 2001

Cancer Mortality - Cases and Rates in Manitoba by Site, 2010

	CANCER SITE	0-29			30-39			40-49			50-59			60-69			70-79			80+			TOTAL COUNT			*ASIR		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
BUCCAL CAVITY & PHARYNX	Lip	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2	2	1	3	0.34	0.11	0.21
	Tongue	0	0	0	0	0	0	0	0	0	2	0	2	0	1	1	0	1	1	0	0	0	2	2	4	0.27	0.29	0.29
	Major salivary gland	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	2	0.20	0.14	0.16
	Floor of mouth	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	2	0	2	0.33	0.00	1.15
	Gum & other mouth	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	0	1	1	1	3	4	2	6	8	0.34	0.83	0.61
	Nasopharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0.00	0.13	0.06
	Oropharynx	0	0	0	0	0	0	0	0	0	1	1	2	1	0	1	0	0	0	0	3	3	2	4	6	0.27	0.48	0.42
	Hypopharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	1	2	1	3	0.39	0.11	0.25
	Other buccal cavity & pharynx	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	2	3	2	0	2	4	2	6	0.74	0.33	0.48
DIGESTIVE	Esophagus	0	0	0	0	0	0	4	0	4	12	5	17	13	3	16	16	1	17	8	8	16	53	17	70	8.81	2.13	5.24
	Stomach	0	1	1	2	0	2	1	1	2	4	2	6	13	1	14	5	2	7	14	9	23	39	16	55	6.65	2.10	4.07
	Small intestine	0	0	0	0	0	0	0	1	1	1	1	2	1	1	2	0	1	1	0	3	3	2	7	9	0.27	0.95	0.66
	Colon excluding rectum	0	0	0	0	0	0	1	2	3	9	8	17	28	13	41	45	29	74	49	56	105	132	108	240	23.92	14.30	18.41
	Rectum & rectosigmoid	0	0	0	0	0	0	4	2	6	6	7	13	13	9	22	18	8	26	13	12	25	54	38	92	9.41	5.14	7.00
	Anus	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	0	0	0	0	2	2	0	5	5	0.00	0.63	0.35
	Liver	0	0	0	0	0	0	0	0	0	4	0	4	4	0	4	8	5	13	5	7	12	21	12	33	3.66	1.63	2.58
	Gallbladder	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	1	5	6	1	2	3	2	9	11	0.40	1.33	0.90
	Pancreas	0	0	0	1	0	1	2	1	3	12	6	18	15	14	29	15	23	38	17	30	47	62	74	136	10.55	10.02	10.31
	Other digestive system	0	0	0	0	0	0	1	0	1	2	4	6	7	4	11	3	7	10	2	13	15	15	28	43	2.36	3.70	3.20
RESPIRATORY	Larynx	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	2	0	2	1	1	2	6	1	7	0.99	0.11	0.52
	Lung & bronchus	0	0	0	0	1	1	8	12	20	34	43	77	97	70	167	100	93	193	95	109	204	334	328	662	57.80	44.95	50.17
	Other respiratory system	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1	1	1	2	0.14	0.11	0.14
	Bones & joints	1	1	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	2	3	3	3	6	0.50	0.40	0.45
	Soft tissue (Including heart)	4	2	6	0	0	0	0	1	1	1	4	5	4	1	5	3	1	4	1	2	3	13	11	24	2.11	1.58	1.83
	Kaposi sarcoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
	Mesothelioma	0	0	0	0	0	0	0	0	0	0	1	1	3	2	5	12	0	12	3	0	3	18	3	21	3.36	0.39	1.69
	Melanoma of the skin	1	1	2	0	0	0	0	0	0	4	1	5	2	4	6	9	0	9	3	1	4	19	7	26	3.34	0.93	2.00
	Breast	0	0	0	0	5	5	0	19	19	0	23	23	1	38	39	0	35	35	1	72	73	2	192	194	0.34	26.23	14.69
FEMALE GENITAL	Cervix uteri		0			1			1			3			0			3			4			12			1.72	
	Corpus uteri		0			0			0			3			4			11			11			29			4.00	
	Uterus, NOS		0			0			0			0			2			2			0			4			0.59	
	Ovary		0			0			3			7			12			23			19			64			9.01	
	Other female genital system		0			0			0			0			3			2			2			7			0.94	

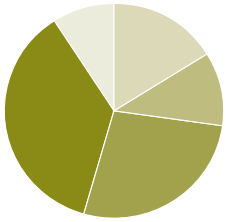
MALE GENITAL	Prostate	0			0			0			4			15			57			102			178			34.57		
	Testis	1			0			0			0			0			0			0			1			0.16		
	Penis	0			0			0			0			1			2			0			3			0.52		
	Other male genital system	0			0			0			0			0			0			0			0			0.00		
URINARY	Bladder	0	0	0	0	0	0	1	0	1	4	1	5	9	1	10	15	3	18	15	12	27	44	17	61	**7.91**	**2.13**	**4.67**
	Kidney	0	0	0	0	0	0	2	0	2	8	3	11	14	4	18	11	5	16	10	12	22	45	24	69	**7.48**	**3.11**	**5.13**
	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**	**0.00**	**0.00**
	Other urinary system	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	1	1	2	3	**0.20**	**0.29**	**0.23**
BRAIN &OTHER NERVOUS	Eye	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	2	1	3	**0.33**	**0.13**	**0.22**
	Brain	1	0	1	0	0	0	5	4	9	6	5	11	8	6	14	9	8	17	4	4	8	33	27	60	**5.49**	**3.93**	**4.64**
	Other nervous system	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**	**0.00**	**0.00**
ENDOCRINE	Thyroid	0	0	0	0	0	0	0	1	1	1	0	1	1	2	3	0	1	1	0	1	1	2	5	7	**0.27**	**0.71**	**0.51**
	Other endocrine	1	1	2	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	1	3	4	**0.16**	**0.47**	**0.33**
LYMPHOMA	Hodgkin lymphoma	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	2	1	3	**0.36**	**0.13**	**0.24**
	Non-Hodgkin lymphoma	0	0	0	1	1	2	2	0	2	3	0	3	8	6	14	14	14	28	11	21	32	39	42	81	**6.99**	**5.67**	**6.33**
	Multiple myeloma	0	0	0	0	0	0	0	0	0	1	2	3	5	1	6	10	9	19	10	11	21	26	23	49	**4.80**	**3.15**	**3.84**
LEUKEMIAS	Acute lymphocytic	1	0	1	0	1	1	0	0	0	1	0	1	1	1	2	1	0	1	0	0	0	4	2	6	**0.63**	**0.31**	**0.46**
	Chronic lymphocytic	0	0	0	0	0	0	0	0	0	0	1	1	2	1	3	5	2	7	5	10	15	12	14	26	**2.27**	**1.73**	**1.99**
	Acute myeloid	1	1	2	0	0	0	0	0	0	2	0	2	5	1	6	6	4	10	3	2	5	17	8	25	**2.88**	**1.19**	**1.96**
	Chronic myeloid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	1	2	3	**0.20**	**0.28**	**0.25**
	Other leukemias	0	0	0	0	0	0	1	1	2	0	0	0	1	1	2	3	3	6	3	2	5	8	7	15	**1.51**	**1.03**	**1.21**
	Other, ill defined & unknown	0	0	0	1	0	1	4	6	10	14	9	23	19	21	40	37	29	66	40	50	90	115	115	230	**20.72**	**15.47**	**17.64**
	TOTAL - ALL INVASIVE	**12**	**7**	**19**	**5**	**10**	**15**	**36**	**55**	**91**	**140**	**147**	**287**	**297**	**232**	**529**	**415**	**336**	**751**	**422**	**500**	**922**	**1327**	**1287**	**2614**	**234.91**	**175.06**	**199.67**
IN SITU	Other skin & in situ	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	6	3	9	7	4	11	**1.36**	**0.47**	**0.79**
	Breast in situ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**	**0.00**	**0.00**
	Cervix in situ		0			0			0			0			0			0			0			0			**0.00**	
	Prostate in situ	0			0			0			0			0			0			0			0			**0.00**		
	Bladder in situ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**	**0.00**	**0.00**
	Other in situ (Excl. Breast, Skin, Cervix, Prostate, Bladder)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00**	**0.00**	**0.00**
	TOTAL - INVASIVE & IN SITU	**12**	**7**	**19**	**5**	**10**	**15**	**36**	**55**	**91**	**140**	**147**	**287**	**298**	**233**	**531**	**415**	**336**	**751**	**428**	**503**	**931**	**1334**	**1291**	**2625**	**236.27**	**175.53**	**200.45**
	Brain uncertain & unspecified	0	0	0	0	0	0	0	1	1	1	1	2	3	1	4	3	3	6	3	8	11	10	14	24	**1.73**	**1.85**	**1.83**
	Neoplasms (Uncertain & unspecified, excluding brain)	0	0	0	0	0	0	1	0	1	2	0	2	2	4	6	8	2	10	15	15	30	28	21	49	**5.35**	**2.55**	**3.70**
	Brain & nervous system benign	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	3	3	0	5	5	**0.00**	**0.63**	**0.37**
	ALL CANCERS	**12**	**7**	**19**	**5**	**10**	**15**	**37**	**56**	**93**	**143**	**148**	**291**	**303**	**239**	**542**	**426**	**342**	**768**	**446**	**529**	**975**	**1372**	**1331**	**2703**	**243.35**	**180.56**	**206.36**

* Age-standardized incidence rate per 100,000
Standard population: Manitoba 2001

Staging on sites with more than 45 cases

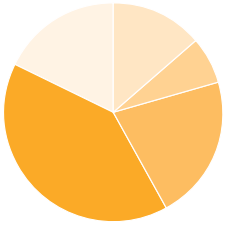
ESOPHAGUS

	FREQUENCY	PERCENT
Stage I	9	16.36
Stage II	6	10.91
Stage III	15	27.27
Stage IV	20	36.36
Unknown	5	9.09
Total	55	100



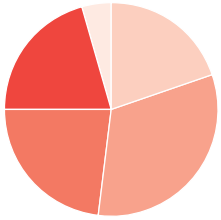
STOMACH

	FREQUENCY	PERCENT
Stage I	14	13.73
Stage II	7	6.86
Stage III	22	21.57
Stage IV	41	40.20
Unknown	18	17.65
Total	102	100



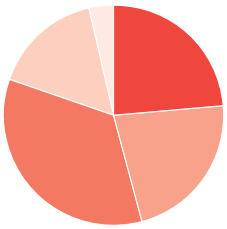
COLON EXCLUDING RECTUM

	FREQUENCY	PERCENT
Stage I	117	19.83
Stage II	191	32.37
Stage III	136	23.05
Stage IV	121	20.51
Unknown	25	4.24
Total	590	100



RECTUM & RECTOSIGMOID

	FREQUENCY	PERCENT
Stage I	66	23.83
Stage II	61	22.02
Stage III	96	34.66
Stage IV	44	15.88
Unknown	10	3.61
Total	277	100

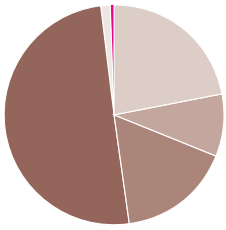


PANCREAS

	FREQUENCY	PERCENT
Stage I	13	7.69
Stage II	45	26.63
Stage III	17	10.06
Stage IV	87	51.48
Unknown	7	4.14
Total	169	100

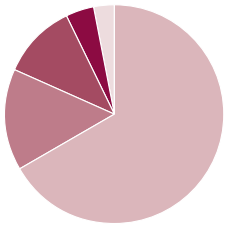
LUNG & BRONCHUS

	FREQUENCY	PERCENT
Stage I	190	22.20
Stage II	77	9.00
Stage III	143	16.71
Stage IV	431	50.35
Unknown	12	1.40
Occult	3	0.35
Total	856	100



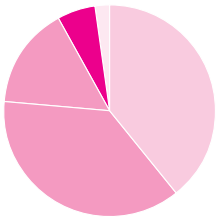
MELANOMA OF THE SKIN

	FREQUENCY	PERCENT
Stage I	114	66.67
Stage II	26	15.20
Stage III	19	11.11
Stage IV	7	4.09
Unknown	5	2.92
Total	171	100



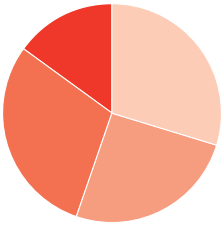
BREAST

	FREQUENCY	PERCENT
Stage I	337	39.32
Stage II	319	37.22
Stage III	134	15.64
Stage IV	49	5.72
Unknown	18	2.10
Total	857	100



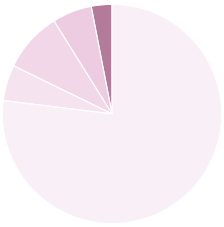
LARYNX

	FREQUENCY	PERCENT
Stage I	14	29.79
Stage II	12	25.53
Stage III	14	29.79
Stage IV	7	14.89
Total	47	100



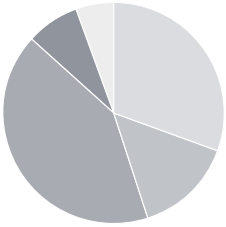
CORPUS UTERI

	FREQUENCY	PERCENT
Stage I	166	77.21
Stage II	11	5.12
Stage III	19	8.84
Stage IV	13	6.05
Unknown	6	2.79
Total	215	100



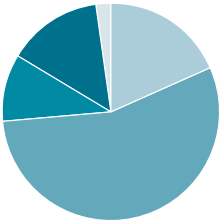
OVARY

	FREQUENCY	PERCENT
Stage I	28	30.77
Stage II	13	14.29
Stage III	38	41.76
Stage IV	7	7.69
Unknown	5	5.49
Total	91	100



PROSTATE

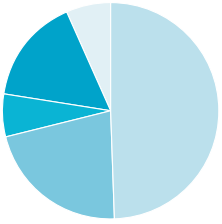
	FREQUENCY	PERCENT
Stage I	136	18.45
Stage II	408	55.36
Stage III	74	10.04
Stage IV	103	13.98
Unknown	16	2.17
Total	737	100



Note: changes within the AJCC 7th ed have affected stage grouping.

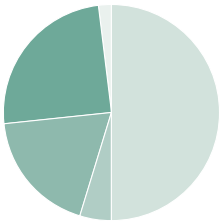
BLADDER

	FREQUENCY	PERCENT
Stage I	62	49.60
Stage II	27	21.60
Stage III	8	6.40
Stage IV	20	16.00
Unknown	8	6.40
Total	125	100



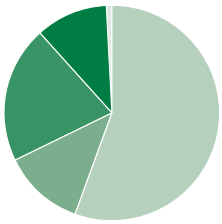
KIDNEY

	FREQUENCY	PERCENT
Stage I	111	50.00
Stage II	11	4.95
Stage III	41	18.47
Stage IV	55	24.77
Unknown	4	1.80
Total	222	100



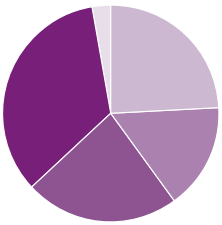
THYROID

	FREQUENCY	PERCENT
Stage I	68	55.74
Stage II	15	12.30
Stage III	25	20.49
Stage IV	13	10.66
Unknown	1	0.82
Total	122	100



NON-HODGKIN LYMPHOMA

	FREQUENCY	PERCENT
Stage I	67	24.36
Stage II	43	15.64
Stage III	64	23.27
Stage IV	94	34.18
Unknown	7	2.55
Total	275	100



In keeping with international coding conventions, all invasive brain tumours, multiple myeloma and leukemia are considered unstageable using the collaborative staging system utilized by all population-based North American Cancer Registries.

Research

Comparing urban and rural experiences relating to blood and marrow transplants

Coming from a small Manitoba town, Dr. Kristjan Paulson has a natural interest in the health and well-being of those living in rural communities.

Intrigued by an American study looking at patient health after blood and marrow transplants and the disparity experienced by some patients, Paulson, who is completing a two year Blood and Marrow Transplant Fellowship, connected with the Department of Epidemiology and Cancer Registry to look at how geography may influence outcomes.

Specialized health services, such as blood and marrow transplantation (BMT), are usually based in large urban centers. Previous research has suggested that rural patients undergoing BMT have a higher risk of death. *"Does location matter? Rural vs urban outcomes after blood and marrow transplantation in a population-based Canadian cohort" was published in* ***Bone Marrow Transplantation*** in 2010, and found that there was no real difference between city and country patients.

"BMT is a very involved process," said Paulson. "It takes weeks and months and people are separated from family and their social supports. One would think urban patients would have an advantage being closer to service, but that is not what we found."

Using data from both the Manitoba BMT Program and the Manitoba Cancer Registry, a total of 463 adult Manitobans underwent BMT between January 1990 and December 2006. To measure access to BMT in urban versus rural patients, all patients with newly diagnosed Hodgkin's Lymphoma (HL) during this same period were evaluated. Of 432 Manitobans diagnosed with HL, 182 (42%) were rural and 250 (58%) were urban. In contrast, 69% of patients undergoing transplant for HL were urban.

When adjusted for gender, age at BMT and year of BMT, Paulson said area of residence was not a significant predictor of mortality. A relative survival analysis was also conducted, and area of residence was again not a significant predictor of mortality. Paulson said CancerCare Manitoba's Community Cancer Programs may have influenced the results due to the range of services provided closer to home or there simply wasn't enough of a sample size to produce significant differences.

While BMT utilization in rural populations deserves further study, Paulson said the study provided insight into how patients fare after transplantation, which could factor into decision-making and how likely patients, regardless of residence, would choose BMT.

This was the first time Paulson, who was being supervised by Dr. Matthew Seftel, worked with the Department and the experience was a good one.

"From a research point of view, the data provided by the Registry was very high quality," he said. "We can do research at the population-based level here that we can't do elsewhere."

2010 Publications

1 Bosetti C, Scelo G, Chuang SC, Tonita JM, Tamaro S, Jonasson JG, Kliewer EV, Hemminki K, Weiderpass E, Pukkala E, Tracey E, Olsen JH, Pompe-Kirn V, Brewster DH, Martos C, Chia KS, Brennan P, Hashibe M, Levi F, La Vecchia C, Boffetta P. High constant incidence rates of second primary cancers of the head and neck: A pooled analysis of 13 cancer registries. Int J Cancer. 2011 Jul 1;129(1):173-9. doi: 10.1002/ijc.25652. Epub 2010 Nov 9.

2 Cheung WY, Butler JR, Kliewer EV, Demers AA, Musto G, Welch S, Sivananthan G, Navaratnam S. Analysis of wait times and costs during the peri-diagnostic period for non-small cell lung cancer. Epub 2010 Sep 6. Lung Cancer 2011 Apr;72(1):125-31

3 Singh H, Nugent Z, Demers AA, Bernstein CN. Rate and predictors of early/missed colorectal cancers after colonoscopy in Manitoba: a population-based study. Am J Gastroenterol. 2010 Dec;105(12):2588-96. Epub 2010 Sep 28.

4 Singh H, Nugent Z, Demers AA, Bernstein CN. Screening for Cervical and Breast Cancer Among Women with Inflammatory Bowel Disease: A Population-based Study Inflamm Bowel Dis. 2011 Aug;17(8):1741-50. doi: 10.1002/ibd.21567. Epub 2010 Nov 12.

5 Singh H, Nugent Z, Demers AA, Kliewer EV, Mahmud SM, Bernstein CN. The reduction in colorectal cancer mortality after colonoscopy varies by site of the cancer. Gastroenterology. 2010 Oct;139(4):1128-37. Epub 2010 Jun 20. doi: 10.1053/j.gastro.2010.06.052.

2010 Publications continued

6 Singh H, De Coster C, Shu E, Fradette K, Latosinsky S, Pitz M, Cheang M, Turner D. Wait times from presentation to treatment for colorectal cancer: a population-based study. Can J Gastroenterol. 2010 Jan;24(1):33-9. PMID: 20186354.

7 McDermott S, DesMeules M, Lewis R, Gold J, Payne J, Lafrance B, Vissandjee B, Kliewer E, Mao Y. Cancer incidence among Canadian immigrants, 1980-1998: Results from a national cohort study. with J Immigr Minor Health. 2011 Feb;13(1):15-26. doi: 10.1007/s10903-010-9347-3.

8 Navaratnam S, Kliewer E, Butler J, Demers A, Musto G, Badiani K. Population based patterns and cost of management of metastatic non-small cell lung cancer after completion of chemotherapy until death. Lung Cancer. 2010 Oct;70(1):110-5. doi: 10.1016/j.lungcan.2010.01.012. Epub 2010 Feb 13.

9 Chuang S C, Scelo G, Lee Y CA, Friis S, Pukkala E, Brewster DH, Hemminki K, Tracey E, Weiderpass E, Tamaro S, Pompe-Kirn V, Kliewer EV, Chia KS, Tonita JM, Martos C, Jonasson JG, Boffetta P, Brennan P, Hashibe M,. Risk of second primary cancer among patients with lung cancer for men and women: a pooled analysis of 13 cancer registries. British Journal of Cancer 2010 Mar 30;102:1190 5.

10 Paulson K, Lambert P, Bredeson C, Demers A, Nowatzki J, Richardson E, Rubinger M, Szwajcer D, Seftel MD. Does location matter? Rural vs urban outcomes after blood and marrow transplantation in a population-based Canadian cohort. Bone Marrow Transplant. 2010 Jul;45(7):1167-73. doi: 10.1038/bmt.2009.332. Epub 2009 Dec 14.

11 Coleman MP, Forman D, Bryant H, Butler J, Rachet B, Maringe C, Nur U, Tracey E, Coory M, Hatcher J, McGahan CE, Turner D, Marrett L, Gjerstorff ML, Johannesen TB, Adolfsson J, Lambe M, Lawrence G, Meechan D, Morris EJ, Middleton R, Steward J, Richards MA; ICBP Module 1 Working Group. Cancer survival in Australia, Canada, Denmark, Norway, Sweden, and the UK, 1995-2007 (the International Cancer Benchmarking Partnership): an analysis of population-based cancer registry data. Lancet. 2011 Jan 8;377(9760):127-38. doi: 10.1016/S0140-6736(10)62231-3. Epub 2010 Dec 21.

12 Schultz, A.S.H., Nowatzki, J., Dunn, D.A., & Griffith, E.J. Effects of socialization in the household on youth susceptibility to smoking: a secondary analysis of the 2004/05 Canadian Youth Smoking Survey. Chronic Dis Can. 2010 Jun;30(3):71-7.

13 Nowatzki, J., Schultz, A.S.H., & Griffith, E.J. Discrepancies between youth and parent perceptions of their household smoking environment relevant to smoking. Chronic Dis Can. 2010 Jun;30(3):78-83.

14 G Skliris, Nugent Z, Rowan B, Penner C, Watson P, Murphy L. A phosphorylation code for estrogen receptor alpha predicts clinical outcome to endocrine therapy in breast cancer. Endocr Relat Cancer. 2010 Jun 3;17(3):589-97. Online version via http://www.endocrinology-journals.org; doi:10.1677/ERC-10-0030; PMID: 20418363.

15 Nugent Z, Blanchard J, Bernstein C, A Population-Based Study of Health Care Resource Use Among Infliximab Users. Am J Gastroenterol 2010; 105:2009-2016; doi:10.1038/ajg.2010.139; published online 6 April 2010.

16 Liu HW, Seftel MD, Rubinger M, Szwajcer D, Demers A, Nugent Z, Schroeder G, Butler JB, Cooke A., Total Body Irradiation Compared with Beam: Long-Term Outcomes of Peripheral Blood Autologous Stem Cell Transplantation for Non-Hodgkin's Lymphoma. Int J Radiat Oncol Biol Phys. 2010 Feb 3; Vol No. pp. 1-8, 2010. [Epub ahead of print] doi:10.1016/j.ijrobp.2009.08.024.

17 Campbell HS, Sanson-Fisher R, Turner D, Hayward L, Wang XS, Taylor-Brown J. Psychometric properties of cancer survivors' unmet needs survey. Support Cancer Care 2010; 19:221-230.

Reports

1 CancerCare Manitoba Community Health Assessment Report, released June 29, 2010 *http://www.cancercare.mb.ca/resource/File/communications/CCMB_2010_CHA-Report.pdf*

2 Youth Health Survey Report 2009. Partners in Planning for Healthy Living. Published in 2010 *http://www.healthincommon.ca/wp-content/uploads/Youth-Health-Survey-Report-2009.pdf*

3 The Manitoba Youth Health Survey 2009: Technical Report, Epidemiology Unit, CancerCare Manitoba *http://partners.healthincommon.ca/wp-content/uploads/2011/11/YHS_2009_Tech_Report_Final.pdf*

This is only a sample of publications that have used Manitoba Cancer Registry data. For a complete listing, please visit www.cancercare.mb.ca and click on Epidemiology and Cancer Registry under the Research tab.

Appendix 1

Place of Diagnosis 2010

	MALE	FEMALE	TOTAL
Health Sciences Centre	1271	999	2270
St.Boniface General Hospital	428	525	953
Other Hospitals in Winnipeg	834	656	1490
Other Hospitals in Manitoba	895	1584	2479
Hospitals Outside Manitoba	93	103	196
Doctors and Clinics in Winnipeg	1371	1089	2460
Doctors and Clinics in Manitoba	205	226	431
Total	5097	5182	10279

Place of Death 2010

	MALE	FEMALE	TOTAL
Hospitals - Winnipeg	751	763	1514
Hospitals - Outside Winnipeg	473	434	907
Other - Winnipeg	89	84	173
Other - Outside Winnipeg	58	49	107
Unknown	1	1	2
Total	1372	1331	2703

Residence at Diagnosis 2010

	MALE	FEMALE	TOTAL
Winnipeg	2804	2972	5776
Manitoba-Outside Winnipeg	2102	2037	4139
Non-Manitoba Residence	191	173	364
Total	5097	5182	10279

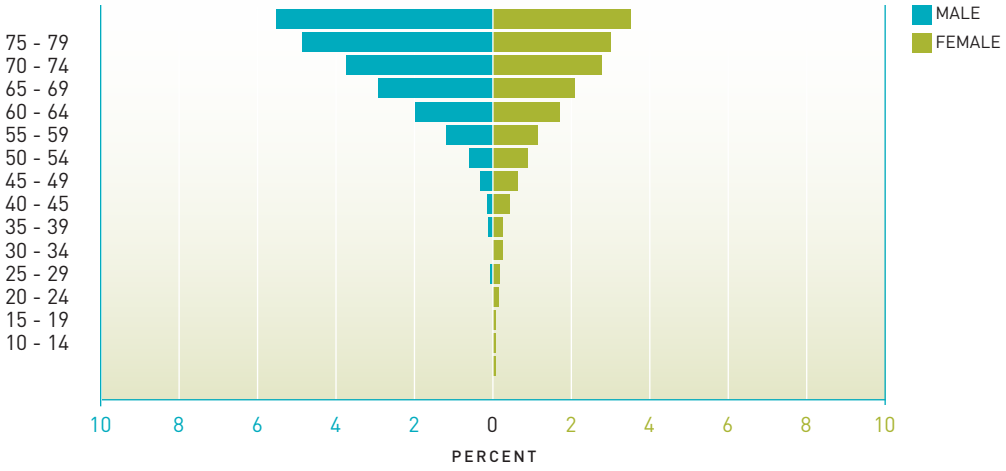
Residence at Death 2010

	MALE	FEMALE	TOTAL
Greater Winnipeg	777	790	1567
Manitoba - Outside Greater Winnipeg	594	540	1134
Residence Not Stated	1	1	2
Total	1372	1331	2703

Appendix 2

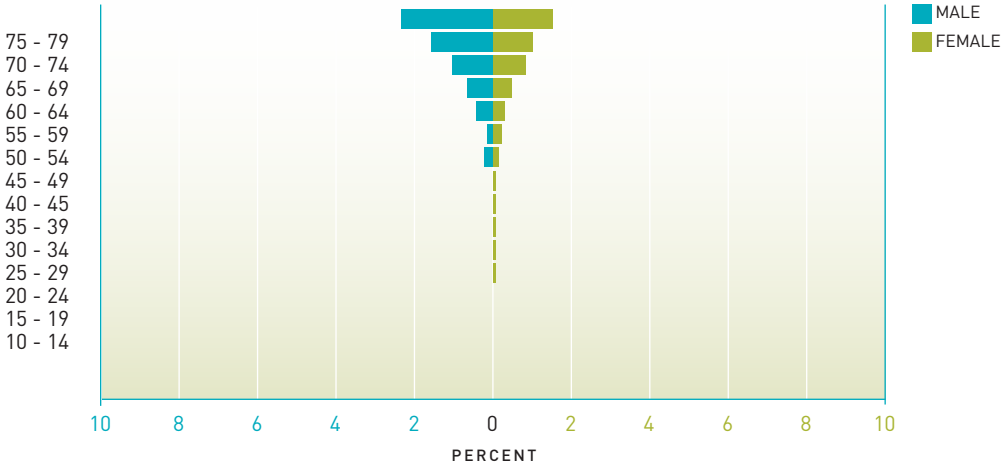
Age distribution at diagnosis, 2010

CANCER INCIDENCE: 9,915



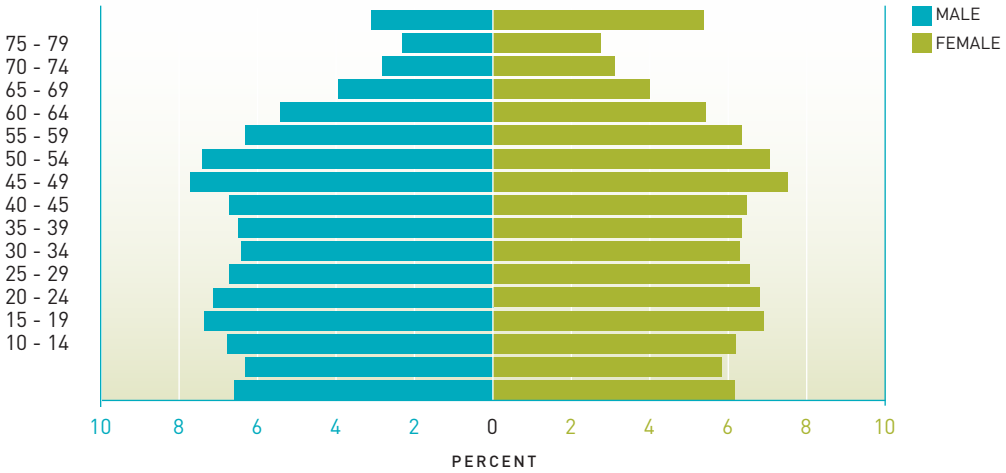
Age distribution at death, 2010

CANCER DEATHS: 2,703



Age distribution for Manitoba, 2010

MANITOBA POPULATION: 1,230,595



Appendix 3

International Classification of Diseases for Oncology – 3rd Edition

PRIMARY SITE	SITE/ CELL TYPE
Buccal cavity & pharynx	C00:C14
Lip	C000:C009
Tongue	C019:C029
Major salivary gland	C079:C089
Floor of mouth	C040:C049
Gum & other mouth	C030:C039, C050:C059, C060:C069
Nasopharynx	C110:C119
Oropharynx	C100:C109
Hypopharynx	C129, C130:C139
Other buccal cavity & pharynx	C090:C099, C140, C142:C148
Digestive system	C15:C26
Esophagus	C150:C159
Stomach	C160:C169
Small intestine	C170:C179
Colon excluding rectum	C180:C189, C260
Rectum & Rectosigmoid	C199, C209
Anus	C210:C212, C218
Liver	C220
Gallbladder	C239
Pancreas	C250:C259
Other digestive system	C240:C249, C221, C480, C481:C482, C268:C269, C488
Respiratory system	C30:C39
Larynx	C320:C329
Lung & bronchus	C340:C349
Other respiratory system	C300:C301, C310:C319, C384, C339, C381:C383, C388, C390:C399
Bones & joints	C400:C419
Soft tissue (including heart)	C380, C470:C479, C490:C499
Mesothelioma	types 9050:9055
Kaposi sarcoma	types 9140
Skin	C44
Melanoma of the skin	C440:C449 (types 8720:8790)
Other skin	C440:C449
Breast	C500:C509
Female genital system	C51:C58
Cervix uteri	C530:C539
Corpus uteri	C540:C549
Uterus, NOS	C559
Ovary	C569
Other female genital system	C529, C510:C519, C570:C589

PRIMARY SITE	SITE/ CELL TYPE
Male genital system	C60:C63
Prostate	C619
Testis	C620:C629
Penis	C600:C609
Other male genital system	C630:C639
Urinary system	C64:C68
Bladder (incl. in situ)	C670:C679
Kidney	C649, C659
Ureter	C669
Other urinary system	C680:C689
Eye	C690:C699
Brain & other nervous system	C70:C72
Brain	C710:C719
Other nervous system	C710:C719 (type 953), C700:C709 C720:C729
Endocrine	C73:C75
Thyroid	C739
Other endocrine	C379, C740:C749, C750:C759
Lymphomas	C77
Hodgkin lymphoma	types 9650:9667
Non-Hodgkin lymphoma	types 9590:9596, 9670:9719, 9727:9729 type 9823, all sites except C420, C421, C424 type 9827, all sites except C420, C421, C424
Multiple myeloma	C421, types 9731:9732, 9734
Leukemias	C42
Acute lymphocytic	types 9826, 9835:9837
Chronic lymphocytic	C420(type 9823), C421 (type 9823), C421 (type 9823), C424 (type 9823)
Acute myeloid	types 9840, 9861, 9866, 9867, 9871:9874, 9891, 9895:9897, 9910, 9920
Chronic myeloid	types 9863, 9875, 9876, 9945, 9946
Other	types 9733, 9742, 9800, 9801, 9805, 9820, 9831, 9832:9834, 9860, 9870, 9930, 9931, 9940, 9948, 9963, 9964 C420 (type 9827), C421 (type 9827), C424 (type 9827)
Other, ill-defined & unknown	types 9740,9741, 9750:9758, 9760:9769, 9950:9962, 9970:9989 C760:C768, (types 8000:9589) C809 (types 8000:9589) C420:C424 (types 8000:9589) C770:C779 (types 8000:9589)

Department of Epidemiology and Cancer Registry Staff

Donna Turner, PhD
PROVINCIAL DIRECTOR, POPULATION ONCOLOGY

Gail Noonan, CTR
MANITOBA CANCER REGISTRY MANAGER

Jane Griffith, PhD
EPIDEMIOLOGY MANAGER

CANCER REGISTRARS

Elena Avila, HIT

Jennifer Cadger, HIT

Angela Deneka, HIT

Sheila Fukumura, CTR
SENIOR CANCER REGISTRAR

Pat Hagan

Terri-Lee Handel, HIT

Coreen Hildebrand, CTR
QUALITY CONTROL COORDINATOR

Jo-Anne Janzen, CHIM, CTR
EDUCATION COORDINATOR

Sharon Lawrence, HIT

Loriann Love, HIT

Vesna Svitlica, CHIM

Melissa Scott, CHIM

Sara Wood, CHIM

EPIDEMIOLOGISTS

Oliver Bucher, MSc

Tannis Erickson, MSc (c)

Jane Griffith, PhD

Carly Leggett, MPH

Donna Turner, PhD

PROGRAMMER ANALYSTS

Humaira Khair, MSc

Huimin Lu, MSc

Grace Musto, BSc

Mary Natividad, BSc

Emma Shu, MSc

Lin Xue, MSc

HEALTH OUTCOMES ANALYSTS

Katherine Fradette, MPH

Pascal Lambert, MSc

CLERICAL SUPPORT

Judy Perry
SENIOR CLERICAL

STUDY COORDINATORS

Elizabeth Harland, MSc

Kate McGarry, MSc, MPA

PROJECT MANAGER

Cheryl Clague, CHIM

CONSULTANT

Salaheddin (Salah) Mahmud, CCFP, MD, PhD

COMMUNICATIONS

Roberta Koscielny

ADMINISTRATIVE ASSISTANT

Karen Carson-Walton

Details

Room ON-2114
675 McDermot Ave.
Winnipeg, MB R3E 0V9
Fax (204) 786-0628

Room OG008
St. Boniface site
409 Tache Ave.
Winnipeg, MB R3H 2A6
Fax (204) 231-8188

Main line: (204) 787-2174
email: epi.cancerregistry@cancercare.mb.ca

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NAACCR 2009 GOLD CERTIFICATION