



# Minnesota Cancer Surveillance System NOTES



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## Cancer Incidence in Minnesota, 2002

*Carin Perkins, Ph.D., MCSS Epidemiologist*

Cancer reporting in Minnesota for 2002 was considered complete in April 2005. Although case counts may change as additional information is identified, it is unlikely that substantial changes will result. Data submitted to the North American Association of Central Cancer Registries (NAACCR) in December 2004 met the highest quality standard (a gold certification) for completeness, timeliness, and accuracy. Minnesota data will therefore be included in *U.S. Cancer Statistics: 2002 Incidence*, to be published later this year by the Centers for Disease Control and Prevention and the National Cancer Institute in collaboration with NAACCR. This achievement is possible because of the dedicated work of staff in the hospitals and pathology laboratories throughout and bordering Minnesota, for which MCSS is extremely grateful.

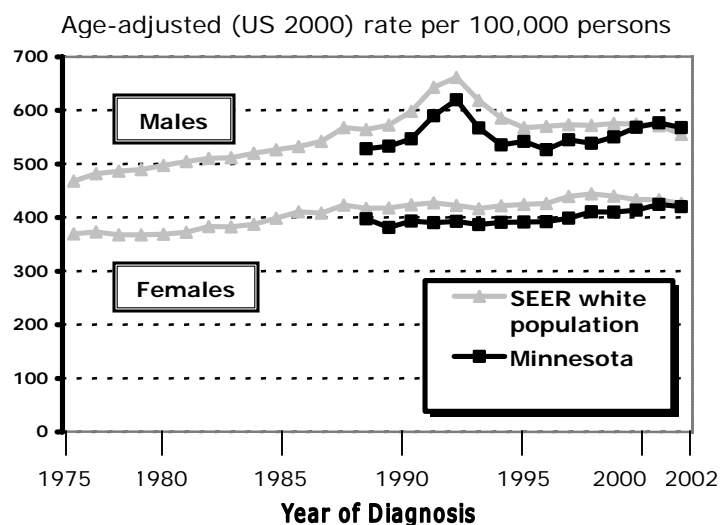
A total of 23,744 invasive cancers and *in situ* bladder cancers were diagnosed among Minnesota residents in 2002. The rates in 2002 and trends for 1988-2002 are very similar to those reported for 2001. See *Cancer Incidence in Minnesota, 2001* in MCSS Notes, March 2004, available online at:

[www.health.state.mn.us/divs/hpcd/cdee/mcss/MCSSNotes.html](http://www.health.state.mn.us/divs/hpcd/cdee/mcss/MCSSNotes.html)

The overall cancer incidence rate in Minnesota is increasing significantly by more than one percent per year among both males and females.

Among males, this primarily reflects an increasing incidence (almost three percent per year) of prostate cancer, which accounts for one out of every three male cancer diagnoses. Among women, this primarily reflects an increasing incidence (over two percent per year) of lung cancer and a smaller increase (about a half of a percent per year) in breast cancer.

## Trends in Overall Cancer Incidence in Minnesota and the SEER Program



Source: Minnesota Cancer Surveillance System (April 2005) and SEER 9 Region public use file (November 2004).

Except for lung and bronchus cancer, where incidence is significantly increasing among females and decreasing among males, cancer trends for the most common cancers are generally similar for both sexes. (See *Ten Most Commonly Diagnosed Cancers by Gender*, page 2.)

Incidence rates are decreasing for colorectal cancer, the third most common cancer among both males and females, and stable for urinary bladder cancer and leukemia. Rates are significantly increasing for each sex for non-Hodgkin lymphoma, melanoma of the skin, and cancers of the kidney and thyroid.

Since 1988, when statewide cancer reporting was implemented in Minnesota, the overall cancer incidence rate has been six to eight percent lower in Minnesota than in the white population in the nine geographic areas reporting cancer cases since 1973 to the Surveillance, Epidemiology and End Results (SEER) Program of the National Cancer Institute. However, rates in Minnesota and the nine SEER regions have gradually become more similar, and in 2001 and 2002 rates were almost the same. For men, this largely reflects the fact that prostate cancer incidence is twelve percent higher in Minnesota than in SEER areas; for women, this largely reflects the fact that lung cancer incidence has leveled off in the SEER areas but is continuing to increase in Minnesota.

### Ten Most Commonly Diagnosed Cancers by Gender, Minnesota, 2002

Males	Cancer Incidence 2002†			
	No. of Cases	% of Cases	Rate	APC‡
Prostate	4,187	33.7%	193.3	+2.9%
Lung and Bronchus	1,528	12.3%	71.3	-0.5%
Colon and Rectum	1,275	10.3%	59.1	-1.6%
Urinary Bladder	825	6.6%	38.9	~
Non-Hodgkin Lymphoma	594	4.8%	26.8	+1.1%
Melanoma of the Skin	452	3.6%	19.7	+3.6%
Kidney and Renal Pelvis	429	3.5%	19.1	+1.0%
Leukemia	390	3.1%	17.9	~
Oral Cavity and Pharynx	345	2.8%	15.2	-2.2%
Pancreas	207	1.7%	9.3	~
<b>All Sites Combined</b>	<b>12,422</b>	<b>100%</b>	<b>568.2</b>	<b>+1.3%</b>

Females	Cancer Incidence 2002†			
	No. of Cases	% of Cases	Rate	APC‡
Breast	3,597	31.8%	134.7	+0.6%
Lung and Bronchus	1,298	11.5%	49.2	+2.3%
Colon and Rectum	1,273	11.2%	45.1	-0.8%
Uterus§	758	6.7%	28.5	~
Non-Hodgkin Lymphoma	495	4.4%	18.3	+1.4%
Melanoma of the Skin	395	3.5%	15.1	+3.3%
Ovary	351	3.1%	13.3	-1.5%
Leukemia	294	2.6%	10.3	~
Thyroid	273	2.4%	10.7	+4.1%
Urinary Bladder	266	2.3%	9.6	~
<b>All Sites Combined</b>	<b>11,322</b>	<b>100%</b>	<b>420.3</b>	<b>+1.2%</b>

† *In situ* cancers except *in situ* bladder cancer were excluded. Cases were either microscopically confirmed or Death Certificate Only. The incidence rate is per 100,000 persons, age-adjusted to the 2000 US population standard.

‡ APC is the average annual percent change in the age-adjusted rate during the period 1988-2002, except for prostate cancer and all cancer sites combined. Because of changes in the trends of these sites, the APCs are for the period 1995-2002. For more information on the APC and its interpretation, see MCSS Notes, March 2004, available online at: <http://www.health.state.mn.us/divs/hpcd/cdee/mcss/MCSSNotes.html>.

~ APC is not statistically significant (p ≥ 0.05).

§ Uterus includes Uterus, not otherwise specified.

For more detailed information on trends in common cancers and race/ethnic differences in cancer rates, see *Minnesota Cancer Update 2005*, available on the Cancer Plan Minnesota web site ([www.cancerplanmn.org](http://www.cancerplanmn.org)), along with the newly-released statewide comprehensive cancer control plan, *Cancer Plan Minnesota 2005-2010*. MCSS will release its biennial cancer report during the summer of 2005.

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EVENTS OF

INTEREST

- June 23 - 24, 2005**  
 Courtyard M Mile Marriott  
 165 East Ontario  
 Chicago, IL  
**Novel Therapeutic Approaches in the Treatment of Multiple Myeloma**  
 Sponsored by Northwestern University's Feinberg School of Medicine and the Multiple Myeloma Research Foundation.  
[http://multiplemyeloma.org/medical\\_programs](http://multiplemyeloma.org/medical_programs)
- July 6 - 9, 2005**  
 Dana Point, CA  
**Targeted Therapies for the Treatment of Breast Cancer**  
 Sponsored by The Center for Biomedical Continuing Education (CBCE)  
<http://www.thebcce.com/currentactivities.asp>
- July 14 - 16, 2005**  
 Arlington, VA  
**International Society of Gastrointestinal Oncology 2<sup>nd</sup> Annual Conference**  
<http://www.isgio.org>
- July 28 - 30, 2005**  
 Niagra Falls, NY  
**Prostate Cancer, Roadmap to the Future: The 25<sup>th</sup> Anniversary of PSA**  
<http://www.roswellpark.org/Document.asp?lid=5190>
- August 3 - 6, 2005**  
 Santa Monica, CA  
**Third Annual Therapeutic Advances in the Treatment of Hematological Malignancies** Sponsored by the CBCE  
<http://www.thebcce.com/currentactivities.asp>

## New Study to Investigate the Causes of Adult Acute and Chronic Myeloid Leukemia

Julie A. Ross, Ph.D.

A new statewide case-control study entitled "Predictors of Adult Leukemia in Minnesota" (PALM) is being conducted by investigators at the University of Minnesota Cancer Center. Julie A. Ross, Ph.D., is the Principal Investigator of this study funded by the National Institutes of Health.

**Importance:** Little is known about the causes of AML or CML. Importantly, due to overall poor survival rates, leukemia ranks 5<sup>th</sup> in person years of projected life lost in the United States (following lung, colon, breast, and pancreatic cancer). Minnesota has one of the highest rates of leukemia in the United States. The University of Minnesota, the Mayo Clinic, MCSS, and hospitals statewide are assisting in helping to provide a better understanding of the etiology of these leukemias, which may lead to more effective cancer prevention strategies.

**Rationale:** Benzene, chemotherapeutic drugs, ionizing radiation, and certain genetic syndromes are established causes but account for few cases. Cigarette smoking is weakly associated with increased risk as are some types of farming exposures. This case-control study will build upon some recent intriguing findings and test for a relationship between specific farming exposures (such as pesticide/herbicide use), obesity, and use of certain over-the-counter pain relief medications. Further, this study will examine genetic susceptibility through evaluation of polymorphisms in genes important in the metabolism of non-steroidal anti-inflammatory drugs, leptin, and specific environmental toxins. This study represents one of the most comprehensive studies of adult myeloid leukemia ever conducted.

**Eligibility:** Potentially eligible cases must be: (1) diagnosed with a microscopically-confirmed acute or chronic myeloid leukemia between June 1, 2005 and November 30, 2009; (2) between the ages of 20 and 79 years at diagnosis; (3) a Minnesota resident at the time of diagnosis; (4) mentally and physically able to participate and to be interviewed; and (5) alive at the time of contact. Potentially eligible controls will be obtained from the Minnesota Driver's License/ID Card List and must be: (1) between the ages of 20 and 79 years; (2) mentally and physically able to participate and to be interviewed; and (3) alive at the time of contact. It is expected that over 700 cases and 700 controls will be enrolled over the study period.

**Participation:** Participation for patients consists of completing a self-administered questionnaire (an hour) and providing either cheek cell samples or blood/marrow samples (if available) for the collection of DNA. Interviews can also be conducted over the telephone if the patient prefers. Patients will also be requested to grant consent for researchers to access their medical records. Participation for controls consists of completing the self-administered questionnaire and providing a cheek cell sample.

Information from questionnaires and DNA from biological specimens will be used to test hypotheses regarding the environmental and genetic causes of myeloid leukemia. Stringent precautions are in place to assure the privacy of participants.

**Note:** Because of the short survival span of some patients diagnosed with AML, it is of special importance to try to interview patients quickly. Along with the MCSS rapid-reporting system, Dr. Ross is visiting Minnesota area hospitals that treat the majority of AML patients to increase study visibility and to help to ensure rapid enrollment.

### FOR MORE INFORMATION

If you have questions regarding the above study, please contact us:

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## ONLINE NEWS SOURCES

**National Cancer Institute (NCI) CancerNet.** Select any cancer type for introductory overview, statistics, clinical trials, genetics, causes, risk factors, and more: [http://www.cancer.gov/cancer\\_information/cancer\\_type](http://www.cancer.gov/cancer_information/cancer_type)

**National Cancer Institute (NCI) News Releases:** <http://www.cancer.gov/newscenter>

**American Cancer Society (ACS) Medical Updates:** [http://www.cancer.org/docroot/NWS/NWS\\_1.asp](http://www.cancer.org/docroot/NWS/NWS_1.asp)

**Cancer Progress Report – 2003 Update** (2005 coming soon). A collaboration between the NCI, ACS, CDC (Centers for Disease Control and Prevention), and other key agencies and groups: <http://progressreport.cancer.gov>

**CDC State Cancer Burden Data.** MN cancer burden data with comparison of Minnesota cancer burden to that of the nation: <http://www.cdc.gov/cancer/CancerBurden/mn.htm>

**CDC National Comprehensive Cancer Control Program.** Links to publications, resources, site-specific cancer topic areas and more: <http://www.cdc.gov/cancer/ncccp/index.htm>

**ACS Colorectal Cancer Facts and Figures – Special Edition 2005.** Download available at:

[http://www.cancer.org/docroot/STT/content/STT\\_1x\\_Colorectal\\_Cancer\\_Facts\\_and\\_Figures\\_Special\\_Edition\\_2005.asp](http://www.cancer.org/docroot/STT/content/STT_1x_Colorectal_Cancer_Facts_and_Figures_Special_Edition_2005.asp)



**The Minnesota Cancer Surveillance System (MCSS)** is the state's cancer registry. It is an ongoing program within the Section of Chronic Disease and Environmental Epidemiology at the Minnesota Department of Health (MDH).

**Mark Your Calendar!**

**45<sup>th</sup> Interscience Conference on Antimicrobial Agents & Chemotherapy**  
 Sept 21 – 24, 2005 New Orleans, LA <http://www.icaac.org>

**Prostate Cancer Symposium**: Radisson Hotel Metrodome, Mpls, MN  
 Sept 23, 2005 (7:00a – 5:00p)  
<http://www.cancer.umn.edu/page/aboutus/prostsympos.html>

**Update in Surgical Oncology 2005** Toronto, Ontario, Canada  
 Oct 28, 2005 <http://www.cme.utoronto.ca>

**American College of Surgeons 2005 Clinical Trials Methods Course**  
 ACS Headquarters and the Wyndham Hotel, Chicago, IL  
 Nov 11 – 15, 2005 <http://www.facs.org/cqi/src/clintrial.html>

**\*\*\* MCSS Notes is Available Online \*\*\***

<http://www.health.state.mn.us/divs/hpcd/cdee/mcss/MCSSNotes.html>

**Change of name or address? Please notify the editor.**

**MCSS Notes**

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Dianne Mandernach,  
 Commissioner of Health

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