



Wisconsin Cancer Data Bulletin

Wisconsin Department of Health Services
Information from the Wisconsin Cancer Reporting System

Wisconsin Northwestern Counties with Apparent Low Cancer Incidence Rates Due to Under-reporting of Cancer Cases Treated at Minnesota Facilities

The most recent analysis conducted at the Wisconsin Cancer Reporting System (WCRS) found that 21 counties had cancer incidence rates significantly lower than the overall state rate, based on cancer cases reported to the state cancer registry. Approximately half (12) of those counties with lower incidence rates are clustered in the northwestern area (Figure 1) from which Wisconsin residents may travel to Minnesota facilities, such as the Mayo Clinic, to seek medical care. This bulletin presents cancer data for those northwestern counties known to have probable interstate health care and lower than expected numbers of cancer cases reported to WCRS.

Figure 1. Northwestern Counties with Low Reported Cancer Incidence



Note: Counties shaded in blue have lower reported incidence rate compared with state incidence rate.

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WCRS currently has contractual agreements with 30 Minnesota facilities to report Wisconsin resident cases directly to WCRS. Facilities vary in their level of compliance with the agreements, however, and WCRS has no statutory authority over Minnesota facilities. Mayo Clinic does not have an agreement with WCRS, although Mayo Clinic reports Wisconsin cancer cases to the Minnesota cancer registry, the Minnesota Cancer Surveillance System (MCSS). Wisconsin currently receives cancer case reports from 20 other state central cancer registries, including other bordering state registries, but not from MCSS. The Minnesota statutes governing MCSS, as currently interpreted, do not allow data sharing with other state cancer registries.

The 2003-2007 cancer data for the northwestern counties of Wisconsin that have apparent underreporting of cancer cases show lower incidence rates than the overall Wisconsin incidence rate (Table 1).

Table 1. Cancer incidence rates for northwestern counties with lower rates than Wisconsin, 2003-2007

County	Rate	Standard Error	Confidence Interval		Cancer Cases	Population	Percent Unstaged
Barron	431.3	12.5	407.1	456.6	1,225	227,824	21.5%
Bayfield	389.1	20.2	350.4	431.2	387	75,141	18.6%
Buffalo	409.4	21.9	367.3	454.5	358	68,981	19.0%
Burnett	346.3	17.4	313.0	382.5	420	81,362	26.3%
Douglas	383.5	12.6	359.3	409.0	951	219,105	19.8%
Dunn	385.5	14.3	358.1	414.5	748	208,678	19.4%
Eau Claire	389.7	9.1	372.0	408.1	1,858	479,708	17.8%
Pepin	411.9	30.9	353.5	477.6	183	36,846	35.0%
Pierce	305.8	13.9	279.3	334.0	512	194,796	38.5%
Polk	372.8	12.1	349.3	397.4	959	218,751	31.4%
St Croix	288.6	9.6	270.1	307.9	952	381,126	47.8%
Washburn	462.8	20.9	422.8	505.9	525	82,651	23.6%

Wisconsin incidence rate = 473.7 Wisconsin unstaged cases = 12.1%

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services

Notes: Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population (19 age groups - Census P25-1130) standard. Confidence intervals are 95% for rates. Population = county population. Percent Unstaged = percent of cases with no stage reported.

Only two of the 12 northwestern counties with lower incidence rates than the state have significantly lower cancer mortality rates (Table 2).

Table 2. Cancer mortality rates for northwestern counties with lower incidence rates than Wisconsin, 2003-2007

County	Rate	Standard Error	Confidence Interval	Cancer Deaths	Population
Barron	184.2	7.9	169.0 200.5	556	227,824
Bayfield	176.6	13.3	151.4 205.2	179	75,141
Buffalo	169.3	13.7	143.5 198.8	155	68,981
Burnett	184.1	12.3	160.9 210.3	232	81,362
Douglas	208.7	9.2	191.1 227.5	532	219,105
Dunn	151.5	8.9	134.6 169.9	299	208,678
Eau Claire	166.2	5.9	154.8 178.2	816	479,708
Pepin	191.1	20.7	152.8 236.7	90	36,846
Pierce	176.2	10.7	155.8 198.4	279	194,796
Polk	193.8	8.6	177.3 211.6	514	218,751
St. Croix	173.6	7.5	159.1 188.9	553	381,145
Washburn	188.3	12.5	164.6 214.9	233	82,651

Wisconsin mortality rate = 182.0

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services

Notes: Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population (19 age groups - Census P25-1130) standard. Confidence intervals are 95% for rates. Population = county population.

If not reported by the health care facilities, cancer incidence data are not accessible to the state registry until after a patient dies. After that event, the Wisconsin Cancer Reporting System (WCRS) contacts the physician listed on the death certificate and requests more information. These Death Certificate Only (DCO) cases are not always converted to complete cases, although DCOs are counted as general incidence cases according to National Program of Cancer Registries (NPCR) guidelines. Therefore, published cancer data may be incomplete for such cases, and missing basic diagnostic information such as stage at diagnosis. This is evidenced by high percentages of unstaged cancer cases found in all 12 of these northwestern counties (Table 1). WCRS reported 12 percent unstaged cancer cases statewide in recent years, in comparison with the Surveillance Epidemiology and End Results (SEER) national rate of 5 percent. Although there are multiple reasons for unstaged data (untrained reporters, lack of resources in American Indian tribal areas, and incomplete medical records), it appears that underreporting in these northwestern counties contributes disproportionately to Wisconsin's relatively high percent of unstaged

cases. Based on Wisconsin cancer incidence and mortality data, published incidence rates probably do not accurately represent the burden of cancer in at least 10 of these 12 northwestern counties (Table 3).

Table 3. Summary: Cancer incidence and mortality rates in 12 northwestern counties compared with Wisconsin rates, 2003-2007

County	Incidence Rate	Mortality Rate
Barron	431.3	184.2
Bayfield	389.1	176.6
Buffalo	409.0	169.3
Burnett	346.3	184.1
Douglas	383.5	208.7
Dunn	385.5	151.5
Eau Claire	389.7	166.2
Pepin	411.9	191.1
Pierce	305.8	176.2
Polk	372.8	193.8
St Croix	288.6	173.6
Sawyer	435.8	190.6
Washburn	462.8	188.3
Wisconsin	473.7	182.0

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Department of Health Services.

Note: Rates are for all cancers, per 100,000 and age-adjusted to the 2000 U.S. standard population.

Local health departments in Wisconsin are increasingly interested in local cancer data for community-based research and cancer control projects, even though the relatively small number of cancer cases in most counties results in statistical limitations. Underreporting greatly exacerbates these statistical limitations. The increased interest in local community projects in state health plans (Healthiest Wisconsin 2020, and the Wisconsin Comprehensive Cancer Control Plan 2010-2015) now requires that WCRS publish clear cautions and explanations for the low incidence rates in these 12 northwestern counties. NPCR’s Program Consultant recommended posting the data with caveats and cautions, to help avert misinterpretation of the low incidence rates.

The current data analyses show that incidence data for the northwestern counties of Wisconsin highlighted in this report are not complete indicators of the true cancer burden in those counties. Unless WCRS has access to complete cancer incidence data for these northwestern counties, published incidence rates should be interpreted with caution due to probable under-reporting. Future improvements in attaining more complete cancer incidence data are needed, as WCRS and NPCR are working toward a more comprehensive data sharing process to best represent and inform all Wisconsin residents.

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