

Cancer Mortality among Wisconsin American Indians

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INTRODUCTION

- Generalized statistics have led health care professionals and policymakers to believe that American Indians have lower cancer rates than the general population.
- While low cancer mortality rates are found among Southwest American Indians, this is not the case in the Northern Plains and Alaska.
- Previous literature presents an inconsistent picture of the burden of cancer among Wisconsin American Indians.

METHODS AND ANALYSIS

- The cancer mortality rates for the Wisconsin population (total and American Indian) were obtained from death certificates from the Wisconsin State Vital Records Section, Bureau of Health Information
- Age- and sex-specific mortality rates were calculated based on the 2000 census estimates of the Wisconsin American Indian and total Wisconsin populations
- Indirect age-adjustment to the American Indian population was used and Chi-square tests were used to determine significant differences by age and sex ($\alpha=0.05$)

TABLE 1
CANCER MORTALITY RATES OF DIFFERENT POPULATIONS AND STANDARDS

Population	Years	Deaths	Population	Rate*
Wisconsin Indian	1996-00	225	46,446	219
Wisconsin All	1996-00	51,906	5,296,087	192
IHS Region				
Northern Plains	1994-98	1,383		291
Alaska	1994-98	593	249	
East	1994-98	602	140	
Pacific Coast	1994-98	970	134	
Southwest	1994-98	1,404	128	
US all	1994-98			206
AI all	1994-98			161

*per 100,000, age-adjusted to US 2000 population

FIGURE 1
RATIO OF AMERICAN INDIAN CANCER DEATHS TO EXPECTED DEATHS.

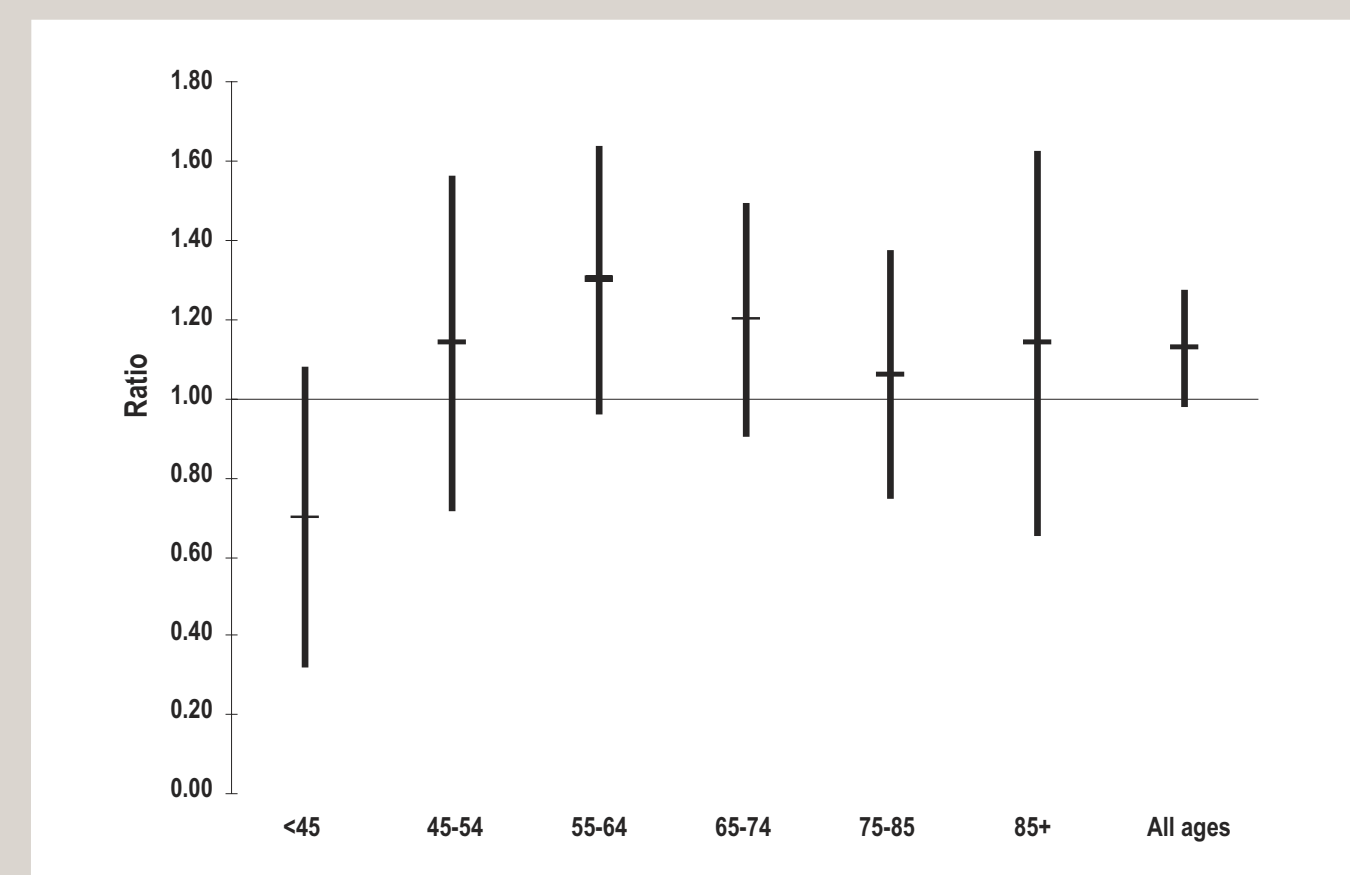


TABLE 2

AMERICAN INDIAN ALL SITES CANCER MORTALITY BY AGE AND SEX, 1996-2000

	Age-specific Wisconsin Rate 1996-2000	American Indian Population 1996-2000	Expected # Deaths1	Observed # Deaths2	Difference	Ratio*
Males						
All Ages		115534	101	119	18	1.18
<45	10.58	94808	8	3	-5	0.36
45-54	116.61	10552	12	18	6	1.46
55-64	390.22	5794	23	29	6	1.28
65-74	987.47	2840	28	37	9	1.32
75-84	1715.42	1246	21	24	3	1.12
85+	2688.06	294	8	8	0	1.01
Females						
All Ages		116698	97	106	9	1.09
<45	13.25	92727	10	10	0	0.98
45-54	110.94	11076	12	10	-2	0.81
55-64	312.61	6518	20	27	7	1.32
65-74	650.11	3678	24	26	2	1.09
75-84	1006.22	1963	20	20	0	1.01
85+	1416.26	736	10	13	3	1.25
Both Sexes						
All Ages		232232	198	225	27	1.13
<45	11.91	187535	19	13	-6	0.70
45-54	113.76	21628	25	28	3	1.14
55-64	350.5	12312	43	56	13	1.30
65-74	805.36	6518	52	63	11	1.20
75-84	1287.65	3209	41	44	3	1.06
85+	1782.04	1030	18	21	3	1.14

* None were significantly different than expected (chi-square test). Numbers may not add due to rounding.
1. Expected number is determined multiplying the calculated WI age specific rates by the AI population.
2. Number of deaths, 1996-2000.

TABLE 3

TOTAL CANCER MORTALITY IN AMERICAN INDIANS BY SEX, 1996-2000

Primary Cancer Site	Sex	Expected*	Observed	Difference	Ratio**	χ^2
All sites	Both sexes	198	225	27	1.13	3.57
	Male	101	119	18	1.18	3.37
	Female	97	106	9	1.09	0.85
Lung	Both sexes	50	69	19	1.38	7.15+
	Male	28	37	9	1.30	2.58
	Female	21	32	11	1.51	5.49+
Colorectal	Both sexes	20	29	9	1.44	3.87+
	Male	11	18	8	1.71	5.36+
	Female	10	11	1	1.15	0.22
Breast	Female	17	9	-8	0.53	3.74+
Cervix	Female	2	6	4	3.33	9.80++
Prostate	Male	10	13	3	1.32	1.02

* Based on rate in Wisconsin for 1996-2000

** Rates are indirectly age adjusted to the 2000 Wisconsin American Indian population estimated by the US Census Bureau

† Statistically significant at $\alpha = 0.05$

†† Statistically significant at $\alpha < 0.0001$, Fisher Exact Test used

CONCLUSIONS

- To identify disparities, reports should present age-specific rates for defined populations rather than using summary age-adjusted rates.
- Using age-specific rates, Wisconsin American Indians were shown to have higher cancer mortality rates than those of the Wisconsin and U.S. general population, and the total American Indian population.
- Identifying these disparities is the first step to addressing them.

INFORMATION

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