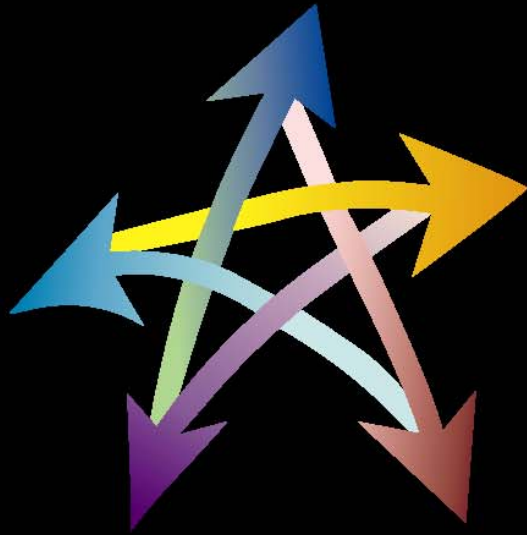


# Developing Cancer Prevalence Estimates for Cancer Control Planning

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# **cancer plan minnesota**

**PREVENTION**

**DETECTION**

**TREATMENT**

**SURVIVORSHIP**

**PALLIATION**

# Cancer Prevalence



- ✓ Number of persons alive on a given date who were previously diagnosed with cancer
- ✓ Can be complete (ever diagnosed) or limited duration (in the last 5 years, 10 years, etc)
- ✓ Different tumor inclusion criteria can be used
- ✓ Important measure of the burden of cancer



# Determinants of Cancer Prevalence



- ✓ Incidence
- ✓ Survival
- ✓ Competing causes of mortality (life expectancy)
- ✓ Age and sex distribution of the population
- ✓ For all sites combined, the distribution of cancer types

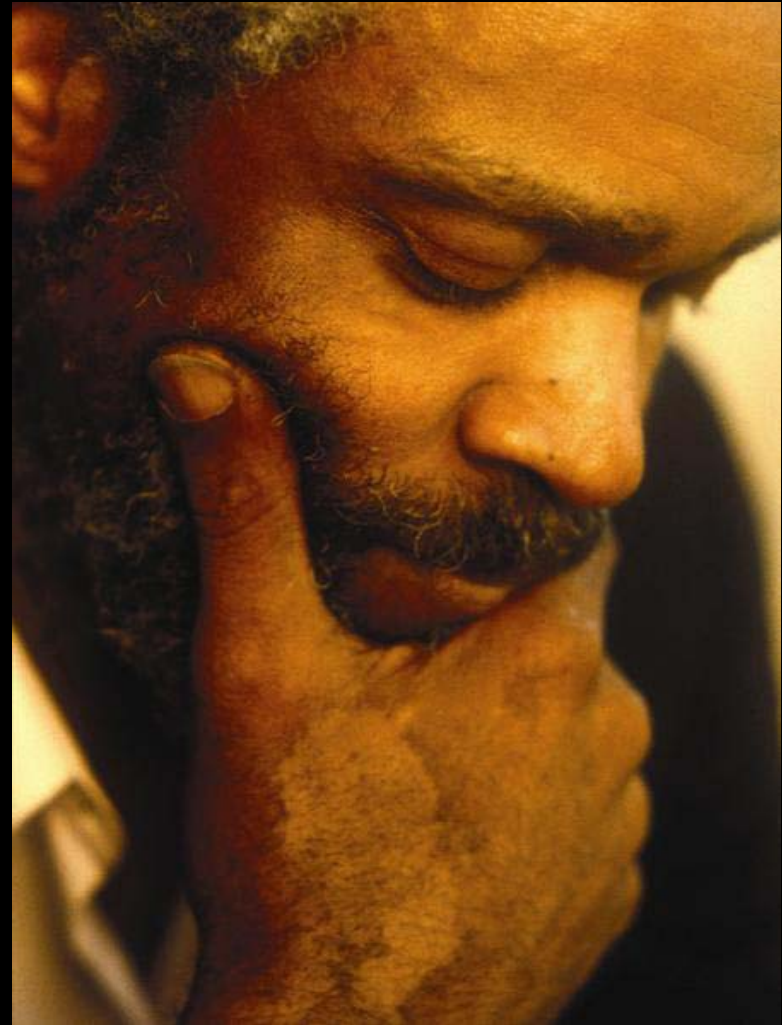
# Measuring Prevalence Directly

- ✓ For complete prevalence count, need incidence data of a maximum lifetime's duration
- ✓ Need complete follow-up for cases during the interval of interest
- ✓ Few NPCR-funded registries have resources for active follow-up
- ✓ SEER uses estimates for  $\geq 26$  years duration



# Estimating Cancer Prevalence

- ✓ SEER publishes cancer prevalence estimates (counts and percents) for the US in SEER Cancer Statistics Review
- ✓ 9.8 million in US on 1/1/2001, 3.46% of US population living with a history of cancer
- ✓ 3.8 million (38%) of these diagnosed in the previous five years, or 1.33% of the total US population
- ✓ Simplest estimate would be to apply those prevalence percents to your population



# Concerns



- ✓ Cancer rates in Minnesota lower for many sites
- ✓ Higher life expectancy in Minnesota
- ✓ Lower proportion of minorities
- ✓ Higher cancer survival rates? We don't know.



# Cancer Prevalence Database

- ✓ <http://srab.cancer.gov/prevalence/canques.html>
- ✓ Precalculated prevalence percents by site, race, sex, and age group
- ✓ For up to 27 years duration, depending on SEER Region
- ✓ Complete prevalence counts only for US (no percents)
- ✓ Data files can be output and downloaded



Photo by Andy Kraushsar, 1997



## Example: 5-Year Prevalence Counts, Females, Melanoma of the Skin, Minnesota, 1/1/2002

Age	Prev %	Mn Pop	Unadj Prev	Mn/SEER IRR	Adj Prev
0	0	32,145	0	1	0
1-4	0	126,916	0	1	0
5-9	0.0006	166,265	2.0	0.333	0.7
...	...	...	...	...	...
80-84	0.1458	58,071	169.4	0.6872	116.4
85+	0.1175	64,387	151.4	0.9442	142.9
Total		2.5 mil	<b>3,771</b>		<b>3,174</b>

**Prev %** = 5-yr prevalence percent among SEER 9 Region white females

**Mn Pop** = Minnesota population 1/1/2002

**Mn/SEER IRR** = Incidence rate ratio, 1998-2002, Mn/SEER

# Comparison of Methods to Estimate Number of Women in Minnesota Diagnosed with Melanoma in the Previous 5 Years and Still Alive

Method	Prevalence Estimate
SEER Overall Crude prevalence percent applied to total MN population	1,945
SEER Overall Age-adjusted prevalence percent applied to total MN population	1,839
SEER Age-specific prevalence percents, unadjusted	3,771
SEER Age-specific prevalence percents, adjusted for differences in incidence	3,174

## 25-Year Cancer Prevalence Estimates, Minnesota, 1/1/2000, before and after adjusted for incidence

Site	Unadjusted Prevalence	Adjusted Prevalence	% Difference
All Sites	153,016	143,110	-6.5%
Female Breast	34,464	33,459	-3.0%
Prostate	27,044	28,161	+ 4.1%
Colorectal	16,501	15,948	-3.4%
Lung	5,521	4,505	-18.4%
Melanoma	9,792	7,522	-23.2%

## Conclusions

- ✓ Applying SEER prevalence percents without adjusting for age underestimated prevalence.
- ✓ Applying age-specific SEER prevalence percents without adjusting for differences in incidence overestimated prevalence.
- ✓ Estimating Minnesota cancer prevalence provided helpful information for the cancer plan.
- ✓ It also created good will with stakeholders and educated them on a limitation of registry data.

# Thank You



- ✓ *Estimated Minnesota Cancer Prevalence, January 1, 2000* available at [www.health.state.mn.us/divs/hpcd/cdee/mcss](http://www.health.state.mn.us/divs/hpcd/cdee/mcss).
- ✓ *Cancer Plan Minnesota 2005-2010* available at [www.cancerplanmn.org](http://www.cancerplanmn.org)