

Vermont Mental Health Performance Indicator Project
Agency of Human Services, Department of Health, Division of Mental Health
Weeks Building, 103 South Main Street, Waterbury, VT 05671-1601

MEMORANDUM

TO: Vermont Mental Health Performance Indicator Project
Advisory Group and Interested Parties

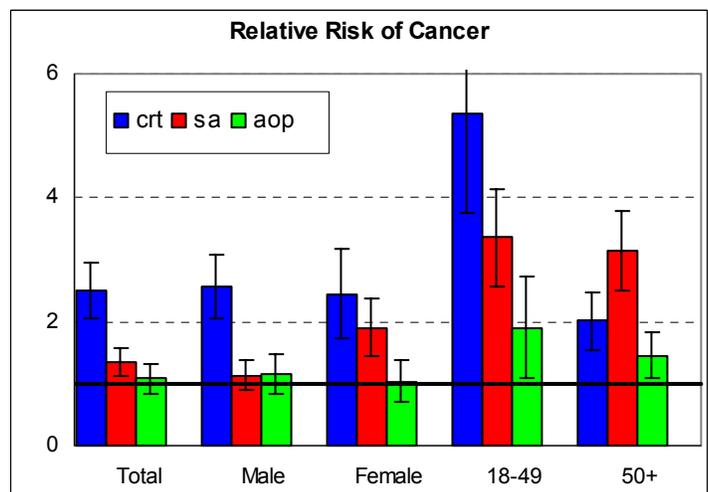
FROM: John Pandiani and Monica Boyd

DATE: January 14, 2005

RE: Cancer Diagnosis among Adult Outpatient and Substance Abuse Caseloads

This week's PIP compliments the brief report on "Relative Risk of Cancer Diagnosis for CRT Clients" published on September 10, 2004 (www.ddmhs.state.vt.us/docs/pips/2004/pip091004.pdf). This week's report provides findings regarding relative risk (compared to the general population) of cancer diagnosis for people served by CMHC-based Adult Mental Health Outpatient Programs and CMHC-based Substance Abuse (SA) Programs. The earlier analysis found a substantially elevated risk of cancer diagnosis for individuals served by Vermont's Community Rehabilitation and Treatment (CRT) Programs for adults with serious mental illness. Overall, CRT clients were more than twice as likely as adult Vermont residents overall to receive a cancer diagnosis. Men in the 18-49 age group had the greatest elevated risk. They were 6.6 times as likely to have a cancer diagnosis as men in the same age group in the general population.

The findings presented here are based on analysis of anonymous extracts from the Vermont Cancer Registry maintained by the Department of Health and anonymous extracts from the Monthly Service Report database maintained by the Division of Mental Health. Because these data sets do not include unique person identifiers, Probabilistic Population Estimation (PPE) was used to determine the proportion of individuals served by CMHC programs who were also represented in the Cancer Registry during the same year. PPE is a statistical data-mining tool that measures



the number of people represented in data sets that do not share unique person identifiers. PPE reports how many people are represented in and across data sets, but does not reveal who the people are. This analysis provides the information necessary to determine the incidence of cancer for adults with serious mental illness as well as for the larger population of the State of Vermont. These calculations were completed for each of eight years (1994 - 2001) and the results were averaged.

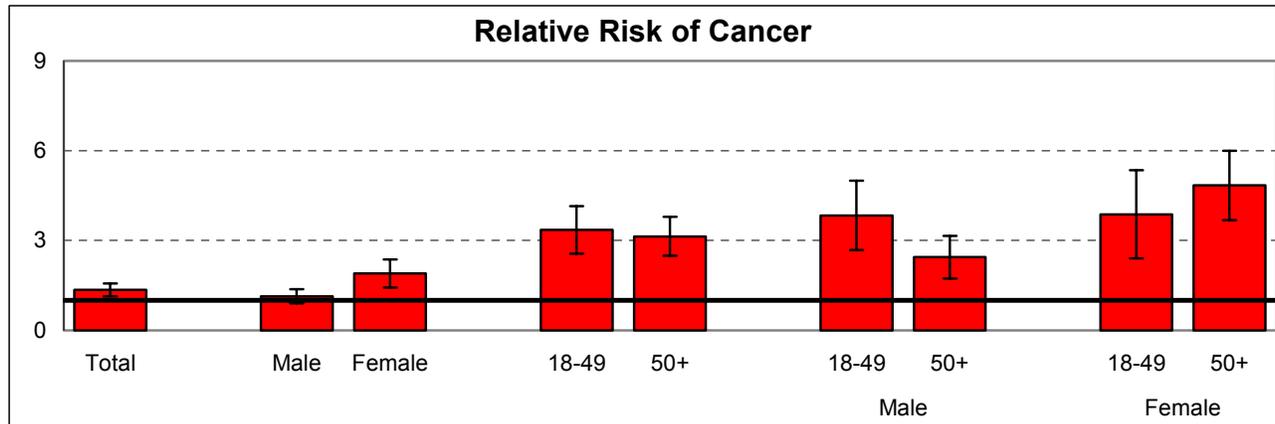
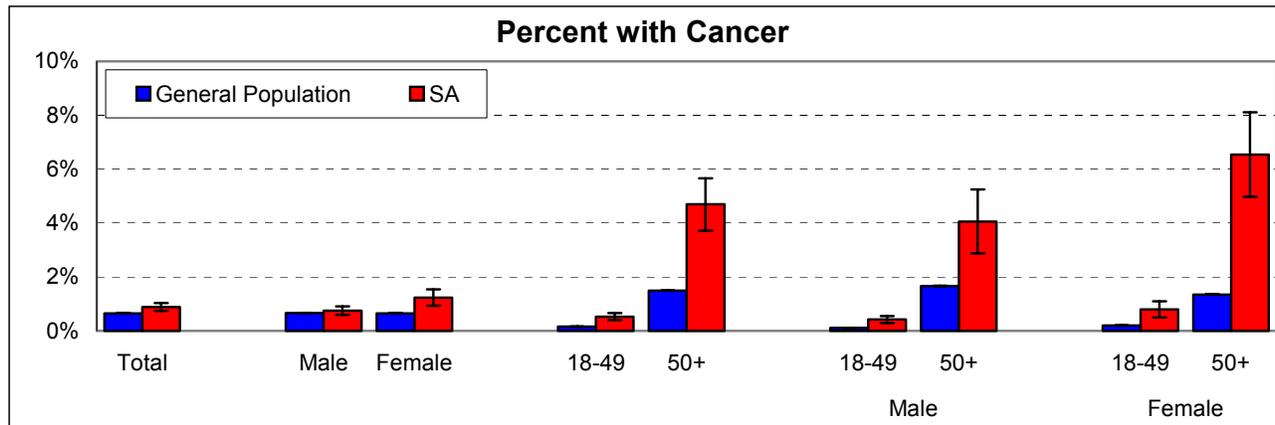
Relative risk is used to compare the proportion of service recipients to the proportion of the general population who received a cancer diagnoses. Relative risk was derived by dividing the rate of cancer diagnoses among service recipients by the rate of cancer diagnosis in the general population. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients were twice as likely as other residents to have a cancer diagnosis. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have a cancer diagnosis.

As you will see, the incidence of cancer for Substance Abuse service recipients was significantly elevated, overall, and for most age and gender groups. Overall the cancer rate for Substance Abuse service recipients was 40% higher than for the adult population of Vermont. The relative risk was greatest for women in the 50+ age group (4.8 times the rate for the general population of women in this age group), and for men in the 18-49 age group (3.8 times the rate for the general population of women in this age group). The relative incidence of cancer among substance abuse service recipients, however, was substantially less than the rate for

The incidence of cancer for AOP clients overall was not significantly different from the incidence for the adult population of Vermont, although some age specific rates were significantly higher. The greatest relative risk of cancer among AOP clients was observed for men in the 18 to 49 age group where the rate was three times the rate of men in this age group in the general population.

We look forward to your interpretation of these findings and your suggestions for further analysis of these data. As always, you can reach us at pip@vdh.state.vt.us or 802-241-2638.

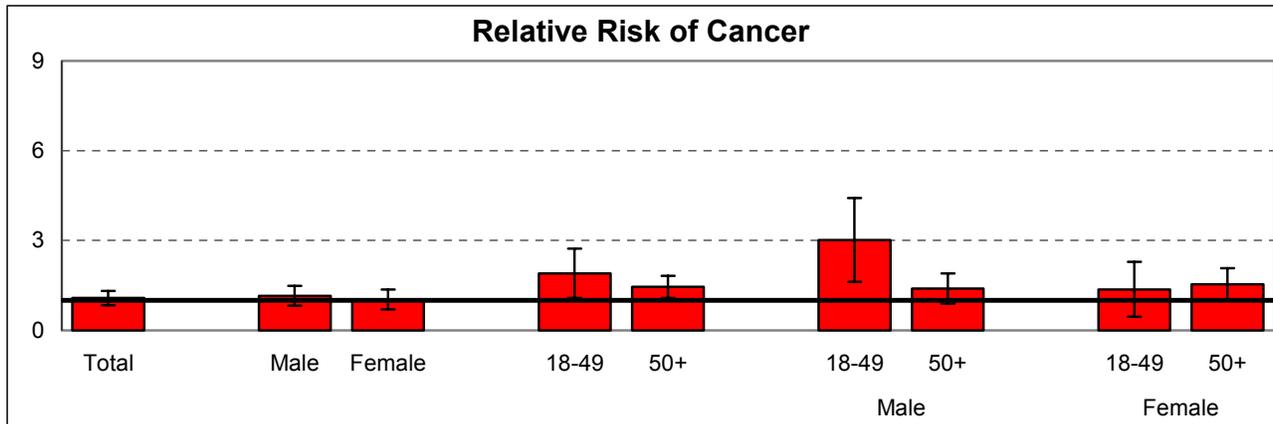
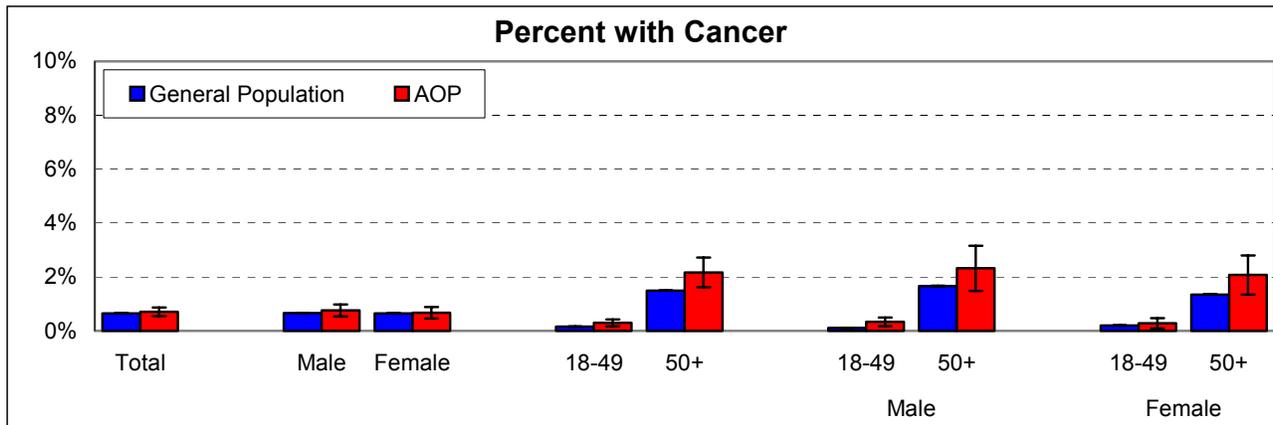
Substance Abuse Clients and General Population with a Cancer Diagnosis During the Year Receiving Services Served During: CY1994 - CY2001



	General Population		Substance Abuse Clients		Relative Risk of Cancer
	Number*	Percent w/ Cancer	Number Served*	Percent w/ Cancer	
Total	453,506	0.7% ± 0.00%	4,462 ± 16	0.9% ± 0.1%	1.4 ± 0.2
Male	218,741	0.7% ± 0.00%	3,194 ± 15	0.7% ± 0.2%	1.1 ± 0.2
Female	234,765	0.7% ± 0.00%	1,268 ± 6	1.2% ± 0.3%	1.9 ± 0.5
18-49	284,656	0.2% ± 0.00%	4,081 ± 16	0.5% ± 0.1%	3.4 ± 0.8
50+	168,850	1.5% ± 0.00%	382 ± 2	4.7% ± 1.0%	3.1 ± 0.6
Male 18-49	141,225	0.1% ± 0.00%	2,909 ± 15	0.4% ± 0.1%	3.8 ± 1.2
50+	77,517	1.7% ± 0.01%	285 ± 2	4.1% ± 1.2%	2.4 ± 0.7
Female 18-49	143,431	0.2% ± 0.00%	1,172 ± 6	0.8% ± 0.3%	3.9 ± 1.5
50+	91,333	1.4% ± 0.01%	97 ± 1	6.5% ± 1.6%	4.8 ± 1.2

*Analysis is based on data provided by the community mental health centers and the Vermont Cancer Registry. Analysis includes adults served by a Substance Abuse Program (SA) in a calendar year and adults diagnosed with cancer during the same calendar year (SA CY1994 was analyzed with Cancer CY1994, etc). The analysis was completed for each of eight years and results were averaged. Because these data sets do not share unique person identifiers, Probabilistic Population Estimation was used to determine caseload size and overlap (with 95% confidence intervals). Relative risk was derived by dividing the rate of cancer diagnoses among service recipients by the rate of cancer in the general population. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients are twice as likely as other residents to have a cancer diagnosis. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have a cancer diagnosis.

Adult Mental Health Outpatient Clients and General Population with a Cancer Diagnosis During the Year Receiving MH Services Served During: CY1994 - CY2001



	General Population		Adult Mental Health Outpatient Clients		Relative Risk of Cancer
	Number*	Percent w/ Cancer	Number Served*	Percent w/ Cancer	
Total	453,506	0.7% ± 0.00%	8,560 ± 25	0.7% ± 0.2%	1.1 ± 0.2
Male	218,741	0.7% ± 0.00%	3,310 ± 13	0.8% ± 0.2%	1.2 ± 0.3
Female	234,765	0.7% ± 0.00%	5,250 ± 22	0.7% ± 0.2%	1.0 ± 0.3
18-49	284,656	0.2% ± 0.00%	6,703 ± 25	0.3% ± 0.1%	1.9 ± 0.8
50+	168,850	1.5% ± 0.00%	1,857 ± 7	2.2% ± 0.6%	1.5 ± 0.4
Male 18-49	141,225	0.1% ± 0.00%	2,598 ± 13	0.3% ± 0.2%	3.0 ± 1.4
50+	77,517	1.7% ± 0.01%	712 ± 4	2.3% ± 0.8%	1.4 ± 0.5
Female 18-49	143,431	0.2% ± 0.00%	4,105 ± 21	0.3% ± 0.2%	1.4 ± 0.9
50+	91,333	1.4% ± 0.01%	1,145 ± 5	2.1% ± 0.7%	1.5 ± 0.5

*Analysis is based on data provided by the community mental health centers and the Vermont Cancer Registry. Analysis includes adults served by an Adult Mental Health Outpatient Program (AOP) in a calendar year and adults diagnosed with cancer during the same calendar year (AOP CY1994 was analyzed with Cancer CY1994, etc). The analysis was completed for each of eight years and results were averaged. Because these data sets do not share unique person identifiers, Probabilistic Population Estimation was used to determine caseload size and overlap (with 95% confidence intervals). Relative risk was derived by dividing the rate of cancer diagnoses among service recipients by the rate of cancer in the general population. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients are twice as likely as other residents to have a cancer diagnosis. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have a cancer diagnosis.