Cause Of Death In Middle Age White Non-Hispanic Male Washington State Veterans, 2000-2013

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Abstract
The purpose of this paper is to determine whether relevant cause specific death rates differed between veteran and non-veteran non-Hispanic white men who died in Washington State from 2000-2013. Cause specific death rates were calculated using death records obtained from the Washington State Department of Health, and population estimates were obtained from the Washington State Office of Financial Management for non-Hispanic white men ages 45-64. All cause death rates increased 40% for veterans and 20% for non-veterans during the years 2000-2013. For veterans external causes of death increased significantly as they did for non-veterans. For poisoning or drug or alcohol overdoses, death rates increased 86% for veterans and 69% for non-veterans. For alcoholic liver disease, rates increased 132% for veterans and 69% for non-veterans and were higher in veterans. With respect to intentional causes or suicide, rates were higher for veterans, yet the rate of increase was similar in both groups (61% veterans vs 63% non-veterans). In Washington State, the increase in all-cause mortality for non-Hispanic white men was accompanied by significant increases in deaths due to poisoning, alcoholic liver disease, and suicide. All-cause death rates were higher for veterans as were cause specific rates due to alcoholic liver disease and suicide.

METHODS
Cause specific death rates were calculated using death records obtained from the Washington State Department of Health. This report considered 65,197 deaths that occurred in non-Hispanic white men ages 45-64 from 2000-2013. Using International Classification of Diseases 10th Revision codes, the underlying cause of death was classified as lung cancer (C34), diabetes mellitus (E10-14), poisoning (X40-45, Y10-15, Y45, Y47, Y49), suicide (X60-84, Y87.0), or alcoholic liver disease (K70, K73-74). Veteran status was recorded on Washington State death certificates. This report does not include women as there were relatively few veteran women who died between 2000-2013.

Population estimates were obtained from the Washington State Office of Financial Management for non-Hispanic white men ages 45-64. Estimates of the proportion of male veterans by year and age group were obtained from VetPop, the Department of Veterans Affairs’ official estimate and projection of the veteran population. These proportions were applied to the Washington State non-Hispanic white male population to obtain annual estimates of the number of veterans and non-veterans. These estimates and the number of deaths were used to calculate cause specific death rates for veterans and non-veterans.

RESULTS
All cause death rates increased 40% for veterans and 20% for non-veterans during the years 2000-2013. For veterans (figure 1a) external causes of death increased significantly as they did for non-veterans (figure1b). For poisoning or drug or alcohol overdoses, death rates increased 86% for veterans and 69% for non-veterans and were similar for both groups. For alcoholic liver disease, rates increased 132% for veterans and 69% for non-veterans and were higher in
veterans. With respect to intentional causes or suicide, rates were higher for veterans, yet the rate of increase was similar in both groups (61% veterans vs 63% non-veterans)

Lung cancer was the most important cause of death for both groups, although death rates were 2 times higher in veterans. For both veterans and non-veterans, lung cancer death rates were stable over time. For deaths due to diabetes, rates increased 62% for veterans and 27% for veterans with rates being higher in veterans.

**Figure 1a**
Death rates by cause and year for non-Hispanic white male veterans ages 45-64

**Figure 1b**
Death rates by cause and year for non-Hispanic white male non-veterans ages 45-64

**DISCUSSION**
In Washington State, the increase in all cause mortality from 2000 to 2013 for non-Hispanic white men was accompanied by significant increases in deaths due to poisoning, alcoholic liver disease, and suicide. These findings from Washington State are consistent with a recent study of United States non-Hispanic white men and women and men ages 45-54. (1) In Washington State, all cause rates were higher for veterans as were deaths due to alcoholic liver disease, suicide, and diabetes. Why rates were higher for veterans is a complicated question, but the hazards of military service generally and combat exposure specifically are possible reasons. These findings must be considered in light of limitations of the death certificate and uncertainty regarding estimates of the veteran population.

**References**
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