

AN EPIDEMIOLOGY PUBLICATION OF THE OREGON DEPARTMENT OF HUMAN SERVICES

THE HEART OF THE MATTER — CARDIAC DISEASE IN OREGON

*Never morning wore to evening but  
Some heart did break.*

Alfred, Lord Tennyson

**C**ARDIOVASCULAR disease is the leading cause of death in Oregon, for both men and women. In 2002, heart disease and stroke combined accounted for 10,811 deaths in the state, representing 35% of the total. A previous *CD Summary* (Oct. 21, 2003) outlined the impact of stroke in Oregon. This issue focuses on the epidemiology of heart disease among Oregonians and reviews how the clinical manifestations have changed over time.

Ischemic disease was the principal cause listed for two-thirds of Oregon heart disease deaths in 2002, with the remaining deaths attributed to hypertensive heart disease and valvular disorders, including rheumatic heart disease. Congestive heart failure (CHF) accounted for 11% (more on that later).

While heart disease is a leading killer, many Oregonians are living with it as well. In 2003, among Oregon adults age 45 or older, 8% reported being told by a healthcare provider that they had angina or coronary artery disease, while 7% reported being told by a clinician that they had suffered a heart attack or myocardial infarction (MI).

**AGE, SEX, RACE AND ETHNICITY**

As one might expect, heart disease prevalence and mortality to rise sharply with age. Heart disease death rates increased from 67.5/100,000 among those 45–54 years to 4,800/100,000 in those 85 years or older in 2002. This isn't to say that heart disease takes its toll solely on the elderly—one in 10 heart disease deaths among women, and one in five among men, occurred in people younger than 65 years.

Coronary artery disease prevalence and mortality are higher for men than for women. Prevalence in Oregon men is almost 60% higher than in women, and Oregon men continue to have a higher age-adjusted heart disease death rate (241.4/100,000)\* than Oregon women (150.0/100,000).

Heart disease death rates and prevalence also differ by race and ethnicity. From 1998–2002 rates for Hispanic/Latinos and Asian/Pacific Islanders were half the rates for non-Hispanic whites, while rates for American Indian/Alaska Natives were 10% lower and for African Americans were 20% higher than those for whites. In survey data from 2000–2001, among adults age 45 or older, 4% of Hispanic/Latinos and 5% of African Americans reported having clinician-diagnosed angina/coronary heart disease compared to 9% of all Oregonians (see figure below). The lower prevalence among African Americans and Hispanic/Latinos is in part due to the fact that they are, on average, younger than the general population. However, the fact that African Americans experience higher death rates from heart disease—in spite of reporting less clinician-diagnosed disease—is disconcerting. It could be a consequence of problems with access to health care or under-diagnosis of heart disease in this population, or could simply reflect misunderstanding between patients and their healthcare providers about the patient's diagnosis.

**OTHER RISK FACTORS**

The strength of the relationship between smoking and heart disease never fails to impress: among Oregonians <65 years of age who died of heart disease in 2002, almost half were smokers, compared to 21% of the general population.

Hypertension (24% of adults) hypercholesterolemia (34%), being overweight or obese (58%), and physical inactivity (50%) also put many Oregonians at risk for heart disease.

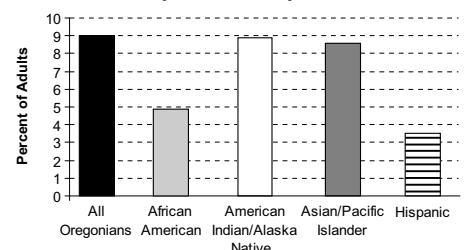
**THE ECONOMIC IMPACT**

During 2003, more than 40,000 hospitalizations in Oregon listed heart disease as the principal diagnosis, representing 13.3% of all hospital admissions. They resulted in direct, inpatient costs of \$711 million. Of these, 7,071 were for acute MI (mean cost: \$19,494/admission) and 6,676 were for CHF (mean cost: \$12,692/admission). Since 1995, these mean costs have increased 173% for MI admissions, and 221% for CHF admissions. These costs are only for hospitalization. If we consider outpatient care, medication costs, rehabilitation, long-term care, and loss of productivity, the annual economic burden of heart disease is in the billions.

**THE CHANGING FACE OF HEART DISEASE**

Since 2000, when collection of self-reported heart disease prevalence data began, rates have been stable. However, age-adjusted mortality rates for heart disease declined 30% in Oregon (to 191.6) between 1990 and 2001, mirroring national trends. Heart disease death rates for men and women in Oregon have been consistently lower than those for the U.S. (see figure, verso); however, the gap in heart disease mortality between men and women in Oregon has

Percentage of Adult Oregonians Age ≥45 Diagnosed with Angina/Coronary Heart Disease by Race/Ethnicity, 2000–2001



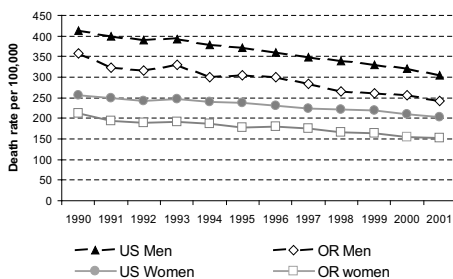
\* Unless otherwise indicated, all rates given are age adjusted to the 2000 U.S. Census standard population and are given as rates per 100,000.



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Heart Disease Death Rates in Oregon and the United States, by Sex, 1990–2001



narrowed slightly. From 1978 to 1998, the heart disease death rate among Oregon women dropped 34% compared to a 42% drop for men. Death rates for MI fell by 43% among women and 53% among men over the same period. These substantial declines are due in large part to advances in the management of acute cardiac events through prompt EMS response, improved treatment of arrhythmias and the increased availability of early, effective thrombolysis.

The clinical manifestations of heart disease deaths have been changing. While mortality from MIs fell from 1978 to 1998, death rates for CHF in Oregon more than doubled for both women and men, and, in 2001, women (21.2) surpassed men in age-adjusted CHF death rate. As people with ischemic heart disease live longer and survive MIs, there is more time for the effects of ischemia and non-fatal infarction to compromise cardiac function, increasing the risk of CHF on that basis. Also, since age is a strong independent risk factor for CHF<sup>1</sup> those who survive an MI can be at higher risk of CHF simply by living longer.

### WILL IT ALL JUST GET BETTER?

Not likely. Age and obesity are both risk factors for heart disease, and as a state, we're not getting any younger or any skinnier. Patients can't do much about their age, sex, or family history. That makes identifying and addressing modifiable risk factors like smoking, hypertension, hyperlipidemia, poorly controlled diabetes, physical inactivity and overweight even more important.

You may find patients surprisingly receptive. 70% of smokers with a history of MI report seriously considering quitting within the next six months, compared to 64% overall. The benefits are pretty rapid as well; smoking cessation reduces the risk of developing coronary artery disease to that of nonsmokers within three years of quitting.<sup>2</sup>

Other areas have room for improvement. In 2003, fewer than 40% of Oregonians <45 years who reported they had clinically diagnosed hypertension said they were taking medication for the condition. The U.S. Preventive Services Task Force strongly recommends routine cholesterol screening among men 35 years and older and women 45 years and older. Still, 20% of men 35–54 years report they have never had their cholesterol checked.

Only half of adults report meeting CDC physical activity recommendations, and the proportion meeting those recommendations is actually lower among those with hypertension (41%) than it is among those without it (53%).

### THE TAKE-HOME MESSAGE

While age-adjusted heart disease mortality has declined, its prevalence has not. Risk factors for heart disease abound

among Oregonians; and, though mortality from acute MI has decreased, CHF and other manifestations of chronic heart disease could well erode the gains as the population ages. The more clinicians and their patients can do to identify and address modifiable risk factors, the less patients and their families will be burdened by the disability and suffering caused by heart disease.

The Oregon Heart Disease and Stroke Prevention Program of Oregon Health Services, funded by a CDC grant, will be undertaking a statewide planning process during 2005. Working with partners, the goal is to develop a comprehensive 5–10 year plan to reduce risk factors, address disparities, prevent acute events, and reduce complications from heart disease and stroke.

### REFERENCES

1. Lund LH, Mancini D. Heart failure in women. *Med Clin N Am* 2004;88:1321–45.
2. Havranek EP. Primary prevention of CHD: nine ways to reduce risk. *Am Fam Physician* 1999;59:1455–63

### Wound Botulism Alert

LAST MONTH, the Washington Department of Health reported two confirmed and one probable case of wound botulism. All three were black-tar heroin users. Wound botulism is rare in Oregon; only 5 have been reported in the past 10 years, but 4 of 5 were injection-drug users. If you suspect botulism, remember to call the health department ASAP. We facilitate rapid acquisition of antitoxin and investigation of the source.