

## DIABETES: THE RODNEY DANGERFIELD OF DISEASES

**D**IABETES IS A MAJOR HEALTH problem in Oregon, leading to life-threatening complications. Yet, like Mr. Dangerfield, diabetes needs respect. Many Oregonians with diabetes are undiagnosed, do not understand their condition, are unable to make the required lifestyle changes, and/or receive inadequate care. A large proportion of the morbidity and mortality attributed to diabetes could be prevented. This article will focus on the complications of diabetes in Oregon and what health care providers can do to prevent them. More information on diabetes can be found in an upcoming Oregon Health Division report entitled *Diabetes in Oregon*.

### THE BURDEN OF DIABETES IN OREGON

Up to 200,000 Oregonians have diabetes. According to data from the Behavioral Risk Factor Surveillance System (BRFSS), a random sample telephone survey of Oregonians 18 years and older, nearly 100,000 Oregon adults, or 4.4% of those 18 and over, have been told they have diabetes.<sup>1</sup> For each diagnosed case of diabetes, there is estimated to be an additional undiagnosed case.<sup>2</sup> An estimated 1,500 Oregon children (less than 18 years) have diabetes.<sup>3</sup>

Diabetes is expensive. In 1992, the direct (medical care) and indirect (lost productivity due to disability and premature death) costs of diabetes in Oregon were estimated to be over \$1.3 billion.<sup>4</sup> Common complications include:

**Retinopathy.** Diabetes is the leading cause of blindness in adults. CDC estimates that several hundred Oregonians become blind each year due to diabetes.<sup>4</sup>

**Nephropathy.** In 1995, 618 Oregonians with diabetes were on dialysis for end-stage renal disease (ESRD). An estimated 200 people develop ESRD due to diabetes each year in Oregon.<sup>5</sup>

**Heart disease.** Those with diabetes are 2-4 times more likely to have heart disease than those without diabetes.<sup>3</sup> Among

Oregon hospitalizations that list diabetes as a discharge diagnosis, 60% also list heart disease.<sup>6</sup>

**Cerebrovascular disease.** People with diabetes are five times more likely to have had a stroke than people who have never had diabetes.<sup>3</sup> In Oregon, 295 hospitalizations listed both stroke and diabetes as discharge diagnoses in 1994.<sup>6</sup>

**Lower extremity amputation.** Persons with diabetes have an up to a 40 times increased risk of lower extremity amputation.<sup>2</sup> In Oregon, there were 637 such amputations in 1994—almost two a day.<sup>6</sup> Alarming, the rate of amputations due to diabetes has increased by 45% in Oregon since 1988.<sup>6</sup>

### PREVENTING THE COMPLICATIONS OF DIABETES IN OREGON

Fortunately, many of these complications can be prevented or delayed through early diagnosis of diabetes, controlling blood sugar, avoiding smoking, and receiving regular preventive screening exams. Studies such as the Diabetes Control and Complications Trial, a large multi-center randomized controlled trial of intensive therapy for Type I diabetes, showed that up to 76% of retinopathy can be prevented, and up to 54% of nephropathy can be prevented or its onset delayed through tight glucose control and close follow-up.<sup>7</sup> However, barriers continue to exist for patients and providers, and within the health care system which adversely affect diabetes self-care and medical care.

### Self-care issues

Oregonians with diabetes tend to be poorer, less educated, and less likely to be employed.<sup>1</sup> This is not reassuring when one contemplates the considerable array of self-management skills required for blood glucose control, such as regular exercise, smoking cessation, self-monitoring of blood glucose, and meal planning.

Those with diabetes are somewhat more likely to be sedentary than those

without diabetes (54% vs. 47%).<sup>1</sup> A sedentary lifestyle for those with diabetes makes control of blood glucose difficult, and those without diabetes who are sedentary place themselves at higher risk for developing the disease. Smoking is hazardous for anyone's health, but the risks of heart disease and microvascular disease are much higher for smokers with diabetes than for other smokers. Oregonians with diabetes are less likely to smoke than their non-diabetic counterparts, but 15% still smoke.<sup>1</sup>

A recent sample of BRFSS respondents with diabetes reported that 44% self-monitor their blood glucose at least daily—much higher than the national average. Among the 40% who use insulin, 66% self-monitor their blood glucose at least once daily. The hemoglobin A1C test (for glycosylated Hb) is recommended for ongoing monitoring of blood glucose control by health care providers. Only 26% of Oregonians with diabetes reporting ever hearing of this test in a recent survey.<sup>8</sup>

In the 1996 BRFSS, 44% of respondents with diabetes reported *never* having attended any formal diabetes education session (either classes or one-on-one instruction with a diabetes educator). Those who report having had diabetes education are 50% more likely to self-monitor their blood glucose.<sup>9</sup>

### Health care

There is room for improvement in the provision of preventive services. The Oregon Medical Professional Review Organization recently undertook the largest medical record review of diabetes care in Oregon to date. The study sample consisted of 765 randomly selected Medicare beneficiaries with diabetes who had enrolled in one of six Oregon Medicare managed care plans during 1993-95. While not necessarily representative of all Oregonians with diabetes, in this sample, 15% were treated with diet alone, 46% with an oral agent, 32% with

insulin, and 4% with combination therapy of oral agent and insulin. More than half (58%) had diagnosed hypertension, and 18% of those asked admitted being a current smoker. Study highlights are shown in the table.

**CLINICAL MANAGEMENT GOALS**

*Early diagnosis.* Because of the gradual onset of Type II diabetes, those who are newly diagnosed have already had the disease for an average of 10 years. Macro- and microvascular complications are often present by the time of first diagnosis.<sup>2</sup> Providers need to have a high index of suspicion for diabetes in certain populations, since symptoms of high glucose (such as fatigue or blurry vision) may be ill-defined. In addition to those who are obese or sedentary, those at increased risk for diabetes include persons over 45, those with a family history of diabetes, and persons who are black, Hispanic, or American Indian.

Although recommendations for national or statewide screening do not currently exist, more aggressive measures to detect diabetes in earlier stages may be warranted to prevent blindness, renal failure, and amputations; and for cardiovascular risk factor detection and treatment in high risk groups.

*Understanding issues in diabetes self-management.* Persons with diabetes are responsible for the day-to-day management of their condition: eating a healthy diet, exercising, and monitoring their symptoms (such as checking feet) and blood sugar, if appropriate. A collaborative approach to diabetes management with a partnership between the patient and provider, including mutual goal-setting and regular follow-up has been shown to be effective.<sup>10</sup>

*Improving the level of preventive care for people with diabetes.* Health care providers need to be aware of the recom-

mended preventive procedures to be done on an ongoing basis for people with diabetes,<sup>11</sup> and understand the collaborative nature and important role of diabetes self-management education.

*Supporting a systematized approach to diabetes care.* Health care systems can improve outcomes by identifying their clients with diabetes and developing the infrastructure to systematize good care for them. Examples might include mailing reminders for preventive services such as the annual dilated eye exam, use of a diabetes care flow sheet, and establishing a “tickler” system so opportunities at clinic visits are not missed.

It’s time to give diabetes some respect. Increasing awareness of the large burden of the disease in Oregon is a first step. Physicians and other health care providers have an important role to play in reducing this burden.

**REFERENCES**

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**Prophylactic Regimens for Diabetic Patients: Recommended Schedules and Compliance**

Procedure	Schedule	Compliance*
Blood pressure monitoring	at least twice in past year	89%
BP control: SBP <130, DBP <85	n/a	16%
Education / self-management goals documented	within past year	55%
Tobacco use assessment	any documentation	59%
Foot inspection	at ≥ 75% of visits in past year	24%
Complete foot examination with risk assessment	within past year	2%
Microalbuminuria screening	within past year	15%
HbA1c or fructosamine monitoring	within past year	70%
Lipid monitoring	within past year	
	cholesterol	70%
	LDL cholesterol	40%
	Triglycerides	63%
Low-dose aspirin prophylaxis, or documented contraindication	current	39%

\* Proportion of Medicare HMO patients in compliance with recommended schedule; unpublished OMPRO study data.