HIGHLIGHTS

Screening for diabetic retinopathy by pharmacy-based teleophthalmology

Although treatment of diabetic retinopathy is effective, about half of patients with diabetes do not receive eye examinations as recommended in guidelines. Pharmacy-based teleophthalmology is a possible alternative to in-person examination that may reduce barriers to screening and treatment. This study estimated the cost-effectiveness of mobile teleophthalmology screening compared with in-person examination in primary care for those with diabetes living in semi-urban areas in southwestern Ontario. The economic model used was designed to identify patients with more than minimal diabetic retinopathy (i.e., at least one microaneurysm at examination). Using a population base of 10 354 patients with diabetes and a compliance rate of 56.2% with screening, this cost-effectiveness analysis showed that teleophthalmology would correctly detect an additional 136 cases of diabetic retinopathy, and an additional 688 cases would be correctly diagnosed, compared with in-person examination in primary care (Table 1). The incremental cost-effectiveness ratio was $314 per additional case detected and $73 per additional case correctly diagnosed. The most important cost drivers were use of pharmacologic dilation and health care specialists' fees. The authors conclude that in a semi-urban setting where in-person examination is still available, a teleophthalmology program would be more effective but also more expensive. However, the results may be different in a rural setting. ***CMAJ Open* 2016;4:E95-102**

Table 1: Examination outcomes of in-person examination and pharmacy-based teleophthalmology programs

Measure	In-person examination	Introduction of TO
Patient compliance, %	51.1	56.2
True-positive result	893	1029
True-negative result	3362	3914
False-positive result	738	595
False-negative result	298	280
Total no. of patients screened	5291	5819

Note: TO = teleophthalmology.

Trends in prostate cancer incidence and mortality with prostate-specific antigen screening

The prostate-specific antigen (PSA) test was introduced in 1986, initially for diagnosis and follow-up, then used in Canada and the United States for screening from the early 1990s. Subsequently, there was a dramatic increase in the apparent incidence of the disease and decline in mortality. Has PSA screening allowed earlier diagnosis and treatment, leading to reductions in mortality? The authors of this study say no. Age-standardized and age-specific cancer incidence (1969–2007) and mortality (1969–2009) data from Public Health Agency of Canada databases were analyzed by joinpoint regression, and changes in incidence and mortality were related to introduction of PSA screening. Figure 1 shows that incidence was increasing before PSA screening began and continued to rise after it was introduced. Reductions in prostate cancer mortality began before PSA screening was widely used and were larger than could be anticipated from screening alone, suggesting that screening caused an artifactual increase in incidence, but no more than a part of reductions in mortality, say the authors. ***CMAJ Open* 2016;4:E73-9**

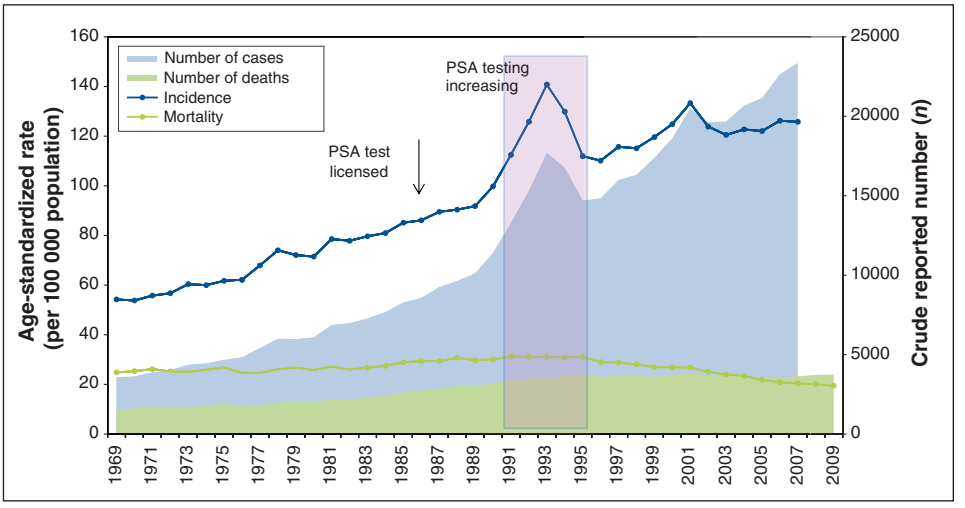

Figure 1: Age-standardized incidence and mortality, number of cases and deaths from prostate cancer, 1969–2009, Canada.

CMAJ 2016. DOI 10.1503/cmaj.160350