

Increasing Longevity and Future Hospital Use

The implications of an aging population are now a part of long-term hospital planning. David Foot's *Boom, Bust & Echo* guides you through the process of multiplying the number of soon-to-be-older baby boomers with the high hospitalization rates of the elderly. The inevitable result is a higher demand for future hospital services, but the number of older people is not the only issue. Increasing longevity will also affect future hospital use. Although longevity and the aging of populations are terms that are linked, there are important differences and each has distinct implications that merit consideration.

The aging of a community is affected by three factors: the rate of birth, migration, and death. The high birth rate during the post-war years created the baby boom generation – and, in large part, the impending increase in the Canadian aged population. Canada's implicit policy is to encourage the immigration of young people. This mitigates the effects of an aging population by lowering the dependency ratio (the ratio of people of working age to the young and elderly). The increasing likelihood that people survive longer leads to a decline in the death rate and contributes to an older age structure of the population. Longevity, on the other hand, is affected by only the death rate of a community. The lower the death rate, the higher the life expectancy.

In a recent ICES Atlas Report, *Adding Years to Life and Life to Years in Ontario*, we examined the potential impact of a decrease in the death rate on hospital use (See: www.ices.on.ca/Publications:AtlasReportsSeries). At first glance, you might think that a drop in the death rate is synonymous with better health and reduced hospital use. However, we know that health is more than longevity. If death rates decrease without improvements in the degree of disability there will be a greater number of people (mostly elderly) living with chronic conditions. The probable result will be an increase in hospital use.

In the 1980s, Fries coined the phrase, “expansion and contraction of morbidity” to describe this changing pattern of disease. He argued that lifestyle improvements would not only reduce death rates but would also lead to an increase in the amount of life lived in a healthy state, or what he called a “compression of morbidity.” Other authors take the view that increased medical care will lead to an “expansion of morbidity,” and a further increase in hospital use.

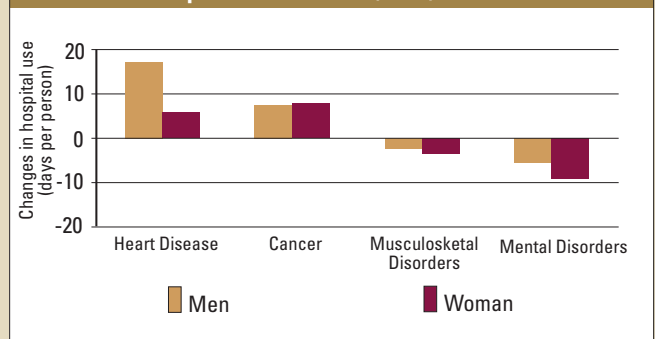
Health expectancy measures have been developed to measure whether, in addition to “years of life,” we are also adding “life to years.” These measures combine life expectancy with measures of health-related quality of life. This year, Statistics Canada will publish disability-free life expectancy estimates for all Canadian health planning regions.

We reported good news in our Atlas Report. We calculated several health expectancy measures and found that, along with an important gain in life expectancy, there has also been a small

compression of morbidity in Ontario between 1991 and 1996.

Whether there will continue to be a compression of morbidity, with the ensuing impact on hospital use, depends very much on the changing pattern of specific conditions (Exhibit 1). Reducing the prevalence of the leading causes of death, such as cardiovascular disease and cancer, will result in a longer life expectancy. However, part of that extra life will be lived with other more disabling conditions and the potential result is an expansion of morbidity and increasing hospital use. For example, eliminating ischemic heart disease for men would increase life expectancy by 3.5 years. Over their lifetime the total number of days in hospital would increase by 18%, or 17 days due to increased hospital use from other chronic conditions. Reducing highly disabling but less fatal diseases, such as mental disorders, will result in a compression of morbidity and a reduction in hospital use. In women, eliminating mental disorders would increase life expectancy by 0.3 years, but hospital use would go down by 7% or 7 days over their lifetime.

Exhibit 1: Potential Impact of Eliminating Chronic Conditions on Hospital Use in Ontario, 1996/7



What does this mean for planning hospital resources? The changing pattern of hospital use is more complex than simply projecting the number of older people. Planning for future hospital resources should consider not only whether there is an aging population, but also whether, in addition to living longer, people are successfully aging in good health. If health-care interventions from all sectors help people maintain a high quality of life, in addition to keeping them alive, there will be improvements in overall population health. This in turn, may contribute to a reduced future demand for hospital care. A reduction in mortality, without improvements in health-related quality of life, may actually contribute to an increase in hospital use.

Doug Manuel MD, MSc, FRCPC, is a member of the Institute for Clinical Evaluative Sciences and the Department of Public Health Sciences at the University of Toronto. Sue Schultz, MSc is with the Institute for Clinical Evaluative Sciences.