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Periodic Health Examinations: A Rapid Economic Analysis

Health Quality Ontario

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List of Abbreviations

AHE	Annual health examination
FGH	Family health group
HQO	Health Quality Ontario
FFS	Fee for service
ICES	Institute for Clinical Evaluative Sciences
OHIP	Ontario Health Insurance Plan
OHTAC	Ontario Health Technology Advisory Committee
OMA	Ontario Medical Association

Background

Objective of Analysis

The objective of this analysis was to estimate the potential cost savings associated with reducing the frequency of periodic health examinations from once per year to once every 2 years in Ontario.

Clinical Need and Target Population

General medical checkups continue to be one of the top reasons for visiting a family physician, second only to appointments associated with hypertension (1). In 2012, 45% of adult Canadians reported that they attend an annual health exam (2). According to a 2008 Statistics Canada survey, the vast majority do so for the reassurance it provides. Other reasons—prevention (15%), existing conditions (14%), tests (10%), and family history concerns (5%)—lag far behind. (3)

Although such reassurance may provide a sense of well-being for some patients, it is also associated with large costs. Nationally, annual physician visits have been estimated to cost approximately $2 billion in consultation fees alone. (4) This figure assumes that 10.5 million visits occur across Canada each year and that they require a visit twice as long as a regular appointment. It does not include the costs of associated tests, investigations, and recall appointments.

Health Quality Ontario conducted a rapid review of evidence to support periodic health exams in asymptomatic adults. (5) This review concluded that, while these exams may have a beneficial effect on the delivery of some clinical preventive services, there was no evidence that the periodic health exam has an impact on other outcomes, such as morbidity, mortality, hospitalization, physician visits, referrals, and absence from work. Among government preventive services organizations in Canada, the United States, and the United Kingdom, there is no consensus on the optimal frequency of general exams.

Ontario Context

Currently, the Ontario Health Insurance Plan (OHIP) covers annual physicals for patients with no symptoms, as does public insurance in Alberta, Manitoba, Saskatchewan, Quebec, Prince Edward Island, and the Northwest Territories. Nunavut funds them for children under age 10 years and adults age 65 years and older. The Yukon pays for a “well-woman” checkup (which typically includes a Pap smear and breast exam). New Brunswick, Newfoundland and Labrador, and Nova Scotia do not cover general examinations for patients without symptoms. In British Columbia, a general health exam is not considered medically necessary unless the doctor has a reason for conducting it.

Cost analysis

Research Question

What are the potential cost savings associated with reducing the frequency of periodic health examinations from once per year to once every 2 years in Ontario?

Methods

Claims data from the Ministry of Health and Long-Term Care were queried to obtain the total number of people age 19 to 65 years who received an annual health examination (AHE) in fiscal years 2010/2011 and 2011/2012. A comprehensive cost was calculated accounting for all fee-for-service charges, shadow claims, capitation rates, access bonuses, after-hours premiums, family health group (FHG) premiums, and laboratory tests. See Table 1 for details on the methods used to calculate each cost component.

Claims data were also obtained for the number of people who had an AHE in 2011/2012 but not in 2010/2011. If an AHE were only available once every 2 years, those people who had an AHE in both 2011/2012 and 2010/2011 would not have been eligible for the AHE in 2011/2012. The cost associated with these people is equivalent to the annual savings that could be realized by reducing the frequency of the AHE to once every 2 years.

To understand Ontarians' use of periodic health exams over a longer time horizon, the Institute for Clinical Evaluative Sciences (ICES) was asked to provide data on the number of AHEs attended by each OHIP-eligible person over the past 7 fiscal years. Data were segregated by age group and sex.

As defined by the Ontario Schedule of Benefits for Physician Services, (6) "an annual health or annual physical examination is a general assessment performed on a patient, after their second birthday, who presents and reveals no apparent physical or mental illness. Annual health examinations are limited to one per patient per 12-month period per physician and constitute 'general assessments' for the purpose of calculating general assessment limits set out above. Annual health examinations in excess of the limit are not insured." A key assumption of this analysis was that physicians bill annual health exams in accordance with these payment rules; in other words, it was assumed that all patients undergoing an AHE are healthy adults "with no apparent physical or mental illness."

Data Sources

This analysis was originally conducted by the Economics Department of the Ontario Medical Association using claims data from the Ministry of Health and Long-Term Care. ICES provided data on the type and volume of laboratory tests associated with AHEs. Unit costs were applied to resource use according to the Ontario Schedule of Benefits for Laboratory Services.

Results

Approximately 1.4 million Ontarians age 19 to 65 years received an AHE in fiscal year 2011/2012. Accounting for fees for service, shadow claims, capitation rates, access bonuses, after-hours and FHG premiums, and laboratory tests, the total cost associated with these examinations was $207.3 million. See Table 1 for a breakdown of cost components and calculations used to inform these values.

Of these people, 485,453 did not have an AHE in the previous year (2010/2011). If the AHE were reduced to once every 2 years, these people would not have been eligible to receive an examination in 2011/2012. Therefore, the $63.6 million associated with AHEs conducted for these people is assumed to represent the annual savings that could be realized if eligibility for the AHE were reduced to once every 2 years.

ICES identified a cohort of approximately 8 million people in Ontario age 18 to 65 between 2005/2006 and 2011/2012. Of these, 50% (3.9 million) did not have an annual physical exam at any point during this 7-year period.

Limitations

This analysis provides a comprehensive estimate of historical costs associated with periodic health exams in Ontario. Due to a lack of clinical data, it does not take into account the effects or effectiveness of periodic health exams. (5) The incremental estimate of savings assumes that physician behaviour and patient demographics remain constant in the future. In order to capture how changes in AHE policy might lead to changes in provider behaviour, it would be useful to look to other countries or provinces that have implemented similar changes. An aging population might mean that, in future, fewer people would fall into the 19-to-65 year age group, decreasing the number of people affected by a change in policy and reducing the total annual savings.

Table 1. Number and cost of annual health exams (AHE) in people age 19 to 65 years, Ontario, 2011/2012 and 2010/2011

	2011/2012	2011/2012, not 2010/2011	Difference	Source/Calculation Notes
Number of fee-for-service claims	868,768	555,786	312,982	
Number of shadow claims	527,586	355,115	172,471	
Total number	**1,396,354**	**910,901**	**485,453**	
Total costs, $	**207,315,686**	**143,674,560**	**63,641,126**	
Cost components				
Cost of fee-for-service claims, $	67,068,890	42,906,976	25,000,000	Number of FFS claims multiplied by $77.20, the value of the unit cost of an annual physical exam (OHIP billing code A003) as of April 1, 2012.
Cost of shadow claims, $	6,109,446	4,112,232	1,997,214	Number of shadow claim services multiplied by 15% of $77.20 (shadow billing premium for physicians in harmonized model).
Capitation rate costs, $	50,514,776	37,424,527	13,090,249	The total value of base capitation payment in fiscal 2011/2012 was $891,109,365. Of this, A003 represents 12.58% (based on the initial list of codes included in the Family Health Organisation basket), and of A003, diagnostic code 917 (annual exam) represents 57.23%. Therefore, the base capitation value of annual exams is about 7.2% (i.e., 0.1258*0.5723) of $891,109,365. Based on the proportion of people age 19 to 65 years who had an AHE in both of the past 2 years, if the frequency of AHE was reduced to once every 2 years, this was assumed to result in a 27.4% decrease in the volume and cost of these claims. Adjusting for the change that would occur in the size of the base capitation as a whole, capitation payments would decrease overall by about 1.87%.
Access bonus, $	4,381,851	3,246,352	1,135,499	The total value of access bonuses in fiscal 2011/2012 was $77,298,365. Applying the same reasoning described above, the value of access bonus for the annual exams is about 7.2% of that total. Adjusting for the 27.4% decline that would occur to the size of the base capitation as a whole, access bonus payments would decrease overall by about 1.87%.
After-hour premium, $	1,624,164	940,829	683,335	GPs receive a premium of 30% for providing after-hours care. Claims eligible for this premium for patients 19 to 65 years of age were identified using code Q012/6 (after-hours care).

	2011/2012	2011/2012, not 2010/2011	Difference	Source/Calculation Notes
Family health group premium, $	4,172,660	2,542,343	1,630,317	GPs receive a premium of 10% for patients enrolled in a family health group (FHG). This premium was calculated using the number of patients 19 to 65 years of age who were enrolled to the FHG physician at the time of service.
Geriatric premium, $	0	0	0	Geriatric premiums were not included as our cohort was restricted to people under age 65.
Laboratory tests, $	67,099,163	48,731,593	18,367,570	To capture the additional laboratory costs associated with AHEs, the Institute for Clinical and Evaluative Sciences (ICES) was asked to report the volume and type of fee codes billed to each patient within 2 weeks of an AHE in the previous year. Unit costs were applied according to the Ontario Schedule of Benefits for Laboratory Services. Based on conversations with expert advisors, approximately 10% of all tests are ordered by GPs before the patient presents for an AHE so that results are ready for discussion at consultation. Therefore, 10% of the laboratory costs, based on ICES data, was added to the total cost. Based on expert opinion, it was assumed that 67% of tests are performed in people who are asymptomatic. Because patients who are symptomatic will continue to receive appropriate laboratory tests, only those tests ordered in asymptomatic patients were assumed to be affected by a change in policy.
Other tests, $	6,344,736	4,607,794	1,736,942	Claims data from the Ministry of Health and Long-Term Care were used to obtain the total number and cost of fee claims (prefix codes G, J, and X) made by GPs within 14 days of an A003 claim with diagnosis code 917. Applying the same reasoning described above, 10% of tests were assumed to occur before the AHE and 67% were assumed to be performed in asymptomatic patients.

Source: OMA Economics, 2012.

Abbreviations: AHE, annual health examination; GP, general practitioner; FFS, fee for service; FHG, family health group; FHO, family health organization; ICES, Institute for Clinical Evaluative Sciences; OHIP, Ontario Health Insurance Plan.

Table 2: Number of annual health examinations (AHE) per person by sex and age group, Ontario, 2005/2006 to 2011/2012

	Total number of AHEs for people in each age group over the 7-year period															
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**Total**
Women																
18–44 years	1,089,346	541,658	351,302	236,704	153,022	93,300	49,501	12,933	409	90	24	15	5	1	1	2,528,311
45–64 years	675,202	282,097	194,456	144,756	105,677	79,542	57,523	21,546	564	146	73	43	28	9	4	1,561,666
Subtotal (women)	1,764,548	823,755	545,758	381,460	258,699	172,842	107,024	34,479	973	236	97	58	33	10	5	4,089,977
Men																
18–44 years	1,428,053	506,400	218,280	108,035	56,714	29,710	14,432	4,075	102	22	5	1	1	0	0	2,365,830
45–64 years	753,060	276,391	163,947	108,550	74,787	52,218	35,468	13,345	283	37	13	8	2	0	0	1,478,109
Subtotal (men)	2,181,113	782,791	382,227	216,585	131,501	81,928	49,900	17,420	385	59	18	9	3	0	0	3,843,939
Total	3,945,661	1,606,546	927,985	598,045	390,200	254,770	156,924	51,899	1,358	295	115	67	36	10	5	7,933,916

Source: Institute for Clinical Evaluative Sciences, 2012.

Conclusions

Half of Ontarians aged 18 to 65 years attended a general periodic health exam within the past 7 years (2005/2006 to 2011/2012). The cost of annual exams in 2011/2012 for adults who also had a physical in the previous year is estimated to be $63.6 million. We have assumed that this represents the annual savings that the province could realize by reducing coverage of periodic health exams from once per year to once every 2 years. The majority of these savings would be found in fees associated with payments to physicians ($43.5 million) and the rest in laboratory fees ($18.3 million).

Glossary

Shadow claims Most non-fee-for-service physicians practising under alternative payment plans or primary care arrangements in Ontario are required to submit Service Encounter Reporting (shadow-billing) in accordance with the Schedule of Benefits. Under some arrangements, shadow-billed claims generate a premium that represents a percentage of the full value of the claim.

Capitation rates Under capitation, physicians practise as part of primary care networks consisting of doctors and nurse practitioners offering a predefined range of services. Each patient will roster (sign a contract) with a physician and agrees to obtain services only from the network to which the physician belongs. For each rostered patient, the government allocates a fixed amount of money periodically, based on a per capita (capitation) rate, adjusted for age and sex. Providers use this prepaid fixed amount to cover all their expenses, including remuneration for doctors and nurse practitioners, operating costs, administration, and all costs related to treating the rostered population.

Access bonuses Access bonuses may be paid to physicians who practise as part of a patient enrolment model. A physician does not receive the monthly access bonus when his or her patient seeks care in other parts of the system for problems that are not emergencies.

After-hours premium An after-hours premium is a tariff paid on top of fee-for-service billings as an additional incentive to provide extended hours. Solo-practice physicians practising under Ontario's Comprehensive Care Model (CCM) are paid a 10% bonus on the most common general practice codes (including A003, the code for a general physical exam) during the after-hours blocks.

Family health groups Family health groups (FHG) are a primary care model in which doctors form groups and share some responsibility for each other's patients. Like the CCM, the FHG model relies on enhancements to the fee-for-service mode of payment. Group members do not have to practice in the same location and are paid as individual physicians.

Acknowledgements

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References

(1) IMS Health. Top 10 reasons for physician visits in Canada. Canadian disease and therapeutic index [Internet]. Montreal (QC): IMS Health; 2009 [cited 2013 May 7]. 2 p. Available from: www.stacommunications.com/journals/cpm/2010/04-April-2010/CPM_035.pdf.

(2) Ipsos. Fewer (45%) Canadians scheduling regular physical checkups, down 4 points in 4 years [Internet]. Toronto (ON): Ipsos; 2011 Dec 1 [cited 2013 May 7]. Available from: http://www.ipsos-na.com/news-polls/pressrelease.aspx?id=5429.

(3) Intini J. Is your annual physical a waste of time? [Internet] Toronto (ON): Maclean's; 2008 Jan 2 [cited 2013 May 7]. Available from: http://www.macleans.ca/science/health/article.jsp?content=20080102_123949_5296.

(4) Howard-Tipp M. Should we abandon the periodic health examination? Can Fam Physician. 2011;57:160-1.

(5) Kaulback, K. Periodic health examinations: a rapid review [Internet]. Toronto (ON): Health Quality Ontario; 2012 Nov 26. 26 p. Available from: http://www.hqontario.ca/evidence/publications-and-ohtac-recommendations/rapid-reviews.

(6) Ontario Ministry of Health and Long-Term Care. Schedule of benefits for physician services under the Health Insurance Act. 2012 Jan 4 [updated 2013 Apr 1; cited October 25, 2012]. Available from: http://www.health.gov.on.ca/english/providers/program/ohip/sob/physserv/physserv_mn.html.

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