Preventive screening

What factors influence testing?

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ABSTRACT

OBJECTIVE To determine factors associated with having preventive screening tests in a population-based sample of Ontario women.

DESIGN Secondary analysis of data from Statistics Canada's National Population Health Survey linked to data from the Ontario Health Insurance Plan to ascertain whether women aged 20 or older had Pap smears, mammography, bone densitometry, or cholesterol testing. Factors associated with having testing were subjected to logistic regression analysis.

SETTING Ontario.

PARTICIPANTS Women aged 20 or older; from 19 600 Canadian households, 2232 Ontario women gave consent to linkage of administrative databases.

MAIN OUTCOME MEASURES Age-specific population screening rates. Odds ratios and probabilities of having screening in relation to socioeconomic, geographic, and physician-associated factors.

RESULTS Having screening was associated with age, income, education, and place of residence. Women with regular physicians were more likely to have Pap smears (odds ratio [OR] 4.4, range 1.7 to 12), densitometry (OR 22, range 3.6 to 140), and cholesterol testing (OR 8.0, range 2.3 to 29). Women who had periodic health examinations were more likely to have Pap smears (OR 6.7, range 4.6 to 9.8), mammograms (OR 3.7, range 2.3 to 5.9), densitometry (OR 3.7, range 1.3 to 10.5), and cholesterol testing (OR 3.0, range 2.0 to 4.5). The probability of having testing increased with number of visits a year to a doctor, but ceased to increase after three visits.

CONCLUSION Having screening tests was associated with socioeconomic factors including income, education, and place of residence. Patients who went to doctors for episodic care only were less likely to have preventive screening than patients who went for periodic health examinations.

RÉSUMÉ

OBJECTIF Déterminer les facteurs qui favorisent la tenue de tests de dépistage d'ordre préventif chez un échantillon de femmes tiré de la population de l'Ontario.

TYPE D'ÉTUDE Analyse secondaire des données de l'Enquête nationale sur la santé des Canadiens de Statistiques Canada, combinée aux données de l'Ontario Health Insurance Plan, afin de déterminer si les femmes de 20 ans et plus subissent des cytologies cervicovaginales, des mammographies, des ostéodensitométries et des bilans lipidiques. Une analyse de régression logistique a été effectuée sur les facteurs associés au fait d'avoir eu ces examens.

CONTEXTE L'Ontario.

PARTICIPANTS Femmes âgées de 20 ans et plus; 2232 Ontariennes provenant de 19 600 foyers canadiens ont consenti à ce qu'on établisse un lien entre ces bases de données gouvernementales.

PRINCIPAUX PARAMÈTRES MESURÉS Taux de dépistage dans des groupes d'âge spécifique. Rapports de cote et probabilité de subir un dépistage en fonction des caractéristiques socioéconomiques et géographiques et de facteurs reliés au médecin.

RÉSULTATS Il existe une relation entre le fait de subir des tests de dépistage et l'âge, le revenu, le niveau d'instruction et le lieu de résidence. Les femmes suivies régulièrement par un médecin avaient plus de chances de subir des cytologies cervicovaginales (test de Papanicolaou) (rapport de cote (RC) 4,4, intervalle 1,7 à 12), des ostéodensitométries (RC 22, intervalle 3,6 à 140) et des bilans lipidiques (RC 8,0, intervalle 2,3 à 29). Celles qui avaient des examens de santé périodiques avaient plus de chances d'avoir des cytologies cervicovaginales (RC 6,7, intervalle 4,6 à 9,8), des mammographies (RC 3,7, intervalle 2,3 à 5,9), des ostéodensitométries (RC 3,7, intervalle 1,3 à 10,5) et des bilans lipidiques (RC 3,0, intervalle 2,0 à 4,5). Il existe une relation entre le nombre de consultations médicales par année et la probabilité de subir des tests de dépistage, mais la probabilité cesse d'augmenter après trois consultations.

CONCLUSIONS La probabilité d'avoir des tests de dépistage est reliée à certains facteurs socioéconomiques tels que le revenu, le niveau de formation et le lieu de résidence. Les femmes qui consultaient leur médecin uniquement pour des soins épisodiques étaient moins susceptibles d'avoir un dépistage préventif que celles qui avaient des examens de santé périodiques.

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Cet article a fait l'objet d'une évaluation externe.

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Preventive services are an important component of primary health care.[1] There are, however, no reliable estimates of the extent to which patients receive complete or even minimal preventive services.[2] What is known about preventive services has been derived from physicians' reports, review of medical records, billing data, or information from patients. These sources have several limitations. Physicians tend to greatly overestimate the number of preventive services they provide.[2] Billing data are likely to be accurate only for services that affect remuneration and so are unlikely to document ordering of screening examinations. Patient questionnaires are limited by patients' recall and understanding.[3,4]

Innovative methods, such as use of standardized patients[5] and direct observation of family physicians in their offices, have recently been adopted.[2] Most surveys have found that rates of preventive services are lower than recommended.[2,6]

Canadian[7] and American[8] authorities have made recommendations on screening services. The Canadian recommendation for breast cancer screening states:

> Screening with mammography every 1 or 2 years (with or without annual clinical breast examination) is recommended for all women aged 50 to 69 years. There is insufficient evidence to recommend for or against routine mammography or clinical breast examination for women aged less than 50 years or 70 years and older.[9]

Routine screening for cervical cancer with Papanicolaou (Pap) testing is:

> recommended for all women who are or have been sexually active and who have a cervix. Pap smears should begin with the onset of sexual activity and should be repeated at least every 3 years. There is insufficient evidence to recommend for or against an upper age limit for Pap testing, but recommendations can be made on other grounds to discontinue regular testing after age 65 in women who have had regular previous screenings in which the smears have been consistently normal.[8]

The Society of Obstetricians and Gynaecologists of Canada and the Osteoporosis Society of Canada have recommended that:

> evaluation of fracture risk in postmenopausal women should include the assessment of risk factors, with bone mineral density testing for those at increased risk. Central (hip and spine) measurements by dual energy x-ray absorptiometry (DEXA) are the most accurate and precise measurements of bone density available, making them useful for both risk assessment and follow up.[10]

In this paper I describe the analysis of a unique population-based database that contains administrative data about specific tests to identify factors that, among Ontario women, are associated with having screening tests. The goal was to identify factors that physicians might be able to modify to improve rates of preventive screening.

METHODS

Data sources

Data were obtained from the Ontario Ministry of Health. Data on respondents to the National Population Health Survey (NPHS) of 1994-1995 were linked to data on Ontario Health Insurance Plan (OHIP) billing files for the year before the NPHS survey. Health insurance numbers were scrambled to protect respondents' privacy. Consent to publish information on NPHS respondents was implied by publication of the data.

National Population Health Survey. Statistics Canada designed the NPHS to collect information about the health of Canadians.[11] The NPHS's target population were household residents in all provinces. In 1994-1995, the NPHS used a two-stage stratified sampling design and a labour force survey sampling frame to draw a representative sample of 19 600 households. The national response rate to the survey was 88%.

In each household, one person was randomly selected for an in-depth interview. Information collected included age, education, and household income. Residences were classified as urban or rural. Statistics Canada derived an Index of Income Adequacy based upon household income and household size. In 1994 Canadian dollars, the four categories of the Index were lowest (less than $10 000 for one to four people), lower middle ($10 000 to $22 499 for one or two people), upper middle ($22 500 to $59 999 for one or two people), and highest ($60 000 or more for one or two people).

Ontario Health Insurance Plan. The OHIP providers' database contains details of each transaction and lists phy-

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sicians' specialties. In this study, primary care providers are defined as general or family physicians and gynecologists. A visit to a GP was counted if the fee code included an "A" (assessment) or "K" (counseling) prefix. A periodic health examination was identified by the diagnostic code 917.

Screening services. Screening tests that would generate laboratory or radiography billings were selected for analysis. These included mammography (codes X184-187 and X194), Pap smears (cervical cytopathology L812A), serum cholesterol measurement (L055A), and bone densitometry (codes X152-157). Mammograms obtained by the Ontario Breast Screening Program (OBSP) were not identified because they are covered by global funding and are not billed to OHIP.

Statistical analysis

Logistic regression was used to explore factors associated with having screening tests. The survey weight[12] for each subject was used in all calculations, and bootstrap resampling[13] was used to compute 95% confidence intervals. Variables considered for inclusion in the regression models comprised three categories: subject-related (age, household income, education); geographic (residence location: urban or rural and northern or southern Ontario); and health services–related: having a regular physician (from NPHS data), having an annual health examination (from OHIP data), and number of visits to GPs (from OHIP data).

RESULTS

Subjects

Subjects were female respondents to the NPHS, aged 20 or older, residing in Ontario. Consent to linkage to administrative databases was granted by 2332 (89%) of the subjects. Approval for linkage was independent of age and household income.

Testing rates among Ontario women

Among the 2332 subjects included in the study, 595 had Pap smears, 255 mammograms (outside of the OBSP), 30 bone densitometry, and 405 serum cholesterol testing in the year before the NPHS interview. **Table 1** shows estimates of age-specific testing rates among all Ontario women; rates were computed using survey sampling weights.

Factors associated with testing

Personal factors. Age was strongly related to the probability of having each of the tests in the year before the NPHS interview (**Table 1**). **Table 2** shows that high school graduates and women in upper income brackets were more likely to have tests, with the exception of cholesterol screening, than women who had not finished high school or had lower incomes. The trend with income was significant for Pap smears ($P = .018$) and mammography ($P = .017$). The trend with education was significant for Pap smears ($P = .007$) and bone densitometry ($P = .05$).

Geographic factors. Urban residents were more likely to have each of the tests, except mammography, than rural residents; residents of northern Ontario were less likely than those from southern Ontario to have each of the tests.

Health services factors. Having a regular physician was significantly associated with having each of the tests, except mammography. Having an annual health

Table 1. Population-based estimates of rates of testing per 100 Ontario women by age in 1994-1995: *Responses were combined with survey sampling weights to estimate rates of testing in the entire population.*

AGE (YEARS) (NO. IN SAMPLE)	PAP SMEAR* N (95% CI)	MAMMOGRAPHY† N (95% CI)	BONE DENSITY‡ N (95% CI)	CHOLESTEROL§ N (95% CI)
20-29 (415)	42 (28-34)	0.8 (0-2)	NA	14 (9-19)
30-39 (534)	41 (35-49)	5 (1-9)	NA	20 (14-26)
40-49 (392)	32 (25-38)	13 (8-18)	NA	23 (17-29)
50-59 (302)	27 (21-33)	26 (20-32)	5 (2-8)	33 (25-41)
60-69 (286)	18 (13-24)	29 (22-35)	3 (1-5)	31 (24-38)
70-79 (287)	13 (8-17)	13 (9-18)	1 (.1-2)	26 (19-33)
≥80 (116)	5 (.3-10)	7 (1-13)	2 (.01-4)	9 (3-15)

CI—confidence interval, NA—not applicable (bone density not measured under age 50).
**595 tests in sample.*
†255 tests in sample. Excludes mammograms performed by the Ontario Breast Screening Program.
‡30 tests in sample.
§405 tests in sample.

Table 2. Predictors of screening among Ontario women: *Results from logistic regression modeling.*

VARIABLE	PAP SMEAR OR (95% CI)	MAMMOGRAPHY* OR (95% CI) [AFTER EXCLUSIONS†]	BONE DENSITY OR (95% CI)	CHOLESTEROL OR (95% CI)
AGE (Y)				
20-29	1	1	NA	1
30-39	0.94 (0.65-1.4)	8.1 (1.5-43) [2.6 (0.3-23)]	NA	1.57 (0.95-2.6)
40-49	0.57 (0.36-0.89)	20.1 (4-100) [19.5 (2.5-150)]	NA	1.97 (1.1-3.4)
50-59	0.49 (0.31-0.77)	68 (14-334) [57 (7.5-435)]	1.0 (reference)	3.54 (2.1-6.1)
60-69	0.26 (0.16-0.43)	78 (16-386) [73 (10-570)]	0.65 (0.24-1.8)	2.62 (1.5-4.6)
70-79	0.22 (0.13-0.37)	36 (7-183) [31 (4-240)]	0.30 (0.1-0.94)	2.18 (1.2-3.9)
≥80	0.09 (0.03-0.25)	15 (2.7-91) [18 (2-158)]	0.29 (0.1-1.8)	.54 (0.21-1.4)
EDUCATION				
Less than high school	1	1	1	1
High school	1.40 (0.96-2)	1.31 (0.87-2) [1.34 (0.84-2.1)]	1.41 (0.5-4.2)	.91 (0.6-1.4)
Postsecondary	1.70 (1.1-2.6)	1.31 (0.80-2.1) [1.53 (0.88-2.7)]	3.01 (1.0-9.1)	0.88 (0.6-1.4)
INCOME				
Lowest	1	1	‡	1.11 (0.69-1.8)
Lower middle	0.98 (0.64-1.5)	1.08 (0.63-1.8) [1.10 (0.6-2)]	‡	
Upper middle	1.53 (1.03-2.3)	1.60 (0.92-2.8) [1.48 (0.77-2.9)]	‡	1.25 (0.81-1.9)
Highest	1.47 (0.92-2.4)	2.62 (1.32-5.2) [2.30 (1.10-4.8)]	‡	1.04 (0.61-1.8)
RESIDENCE				
Rural	1	1	1	1
Urban	1.39 (0.92-2.1)	1.0 (0.61-1.6) [1.24 (0.70-2.2)]	6.6 (0.86-51)	2.2 (1.4-3.5)
South	1	1	1	1
North	0.71 (0.48-1.04)	0.60 (0.4-0.97) [0.66 (0.4-1.10)]	0.08 (0.01-0.6)	0.42 (0.3-0.66)
HAS A REGULAR DOCTOR	4.44 (1.66-11.9)	0.74 (0.2-2.4) [1.29 (0.4-4.2)]	22.2 (3.6-138)	8.0 (2.3-29)
HAS ANNUAL HEALTH EXAMINATIONS	6.69 (4.6-9.8)	3.67 (2.3-5.9) [3.89 (2.5-6.1)]	3.7 (1.3-11)	3.0 (2-4.5)
NO. OF VISITS TO DOCTOR YEARLY				
None	1	1	‡	1
One	3.69 (2-6.8)	2.88 (1.4-5.9) [2.46 (1.2-5.1)]	‡	4.53 (2.3-9.1)
Two	3.53 (1.9-6.5)	4.26 (2.1-8.8) [3.19 (1.5-6.9)]	‡	6.41 (3.3-12)
Three or more	4.53 (2.6-8.0)	4.67 (2.4-8.9) [3.31 (1.7-6.7)]	‡	6.10 (3.3-11)

CI—confidence interval, NA—not applicable (bone density not measured under age 50), OR—odds ratio.
**Excludes mammograms performed by the Ontario Breast Screening Program.*
†Second line presents ORs after exclusion of women with diagnoses of breast disorders.
‡Data not presented because statistical model is unstable due to only 30 women having the test.

examination was significantly associated with having each of the tests. **Figure 1** shows the probability of having screening tests in relation to number of visits to GPs in the year before the NPHS interview. Surprisingly, probabilities for all the tests reached a plateau after three visits.

Screening versus diagnostic testing

Some tests were almost certainly obtained for diagnostic or management purposes rather than screening. Data from OHIP indicated that 89 women were diagnosed with breast disorders; 46% of these women had mammograms, but only 11% of women without such diagnoses had mammograms. **Table 2** shows the change in ORs when women with breast disorders were excluded from the analysis.

Interesting changes include lower likelihood of mammography among women 30 to 39 years old; a small increase in probability of screening among women with postsecondary education; slightly lower probabilities among upper-income women; and higher probabilities among urban residents, women with regular physicians, and women who had periodic health examinations. It was not possible to determine which women had Pap or cholesterol testing for reasons other than screening.

Probabilities of testing

Table 2 uses ORs to describe factors associated with screening. Logistic regression modeling is valuable for estimating effects while controlling for confounding, but, when events are common, as they are with

screening, ORs can be difficult to interpret.[14] Results of the models were thus used to compute *probabilities* by fixing the values of some of the variables in the multivariable model.

Table 3 shows the probability of having Pap testing in relation to income, education, and annual health examinations. Probabilities were calculated by setting income to upper middle (when examining education), education to high school graduate (when examining income), residence to urban southern Ontario, and visits to a GP to three or more. Probability of testing increased with income and education. The probability of Pap testing in the year before the NPHS interview was about 75% among women who had annual health examinations and about 30% among women who did not. **Table 4** shows the probability of having screening tests in relation to having annual health examinations and having a regular physician. Among subjects who reported having a regular doctor, those who had periodic health examinations were about twice as likely to have testing as those who did not.

Figure 1. Probability of having Pap testing, mammography, and cholesterol testing in relation to number of visits to a family physician or general practitioner during the year

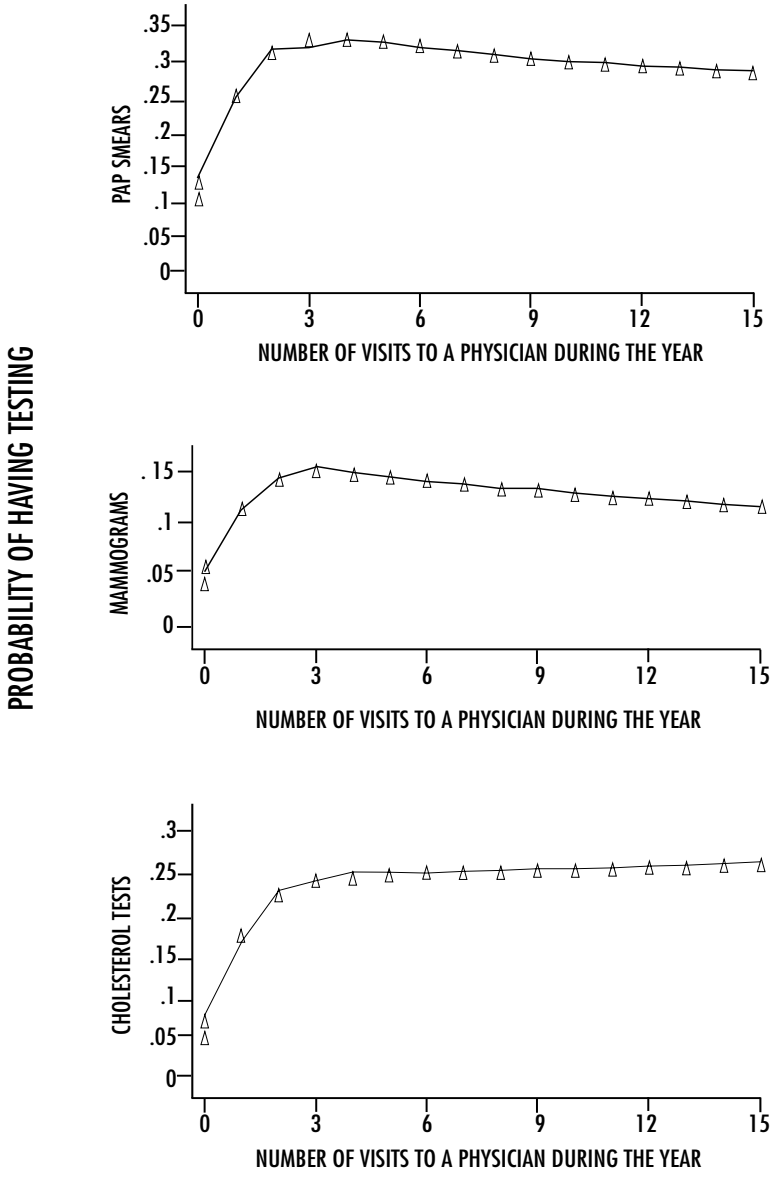

Table 3. Probability of having a Pap smear in the year before the NPHS interview in relation to income, education, and annual health examinations: *Probabilities were calculated by setting income to upper middle (when examining education), education to high school graduate (when examining income), residence to urban southern Ontario, and visits to a family physician to three or more.*

INCOME AND EDUCATION	HAD AN ANNUAL HEALTH EXAMINATION OR (95% CI)	DID NOT HAVE AN ANNUAL HEALTH EXAMINATION OR (95% CI)
INCOME		
Lowest	0.26 (0.17-0.38)	0.70 (0.55-0.81)
Lower middle	0.25 (0.16-0.36)	0.68 (0.54-0.80)
Upper middle	0.34 (0.25-0.45)	0.77 (0.65-0.86)
Highest	0.34 (0.24-0.45)	0.77 (0.64-0.86)
EDUCATION		
Less than high school	0.26 (0.18-0.37)	0.70 (0.55-0.81)
High school	0.34 (0.25-0.45)	0.77 (0.65-0.86)
Postsecondary	0.39 (0.28-0.50)	0.80 (0.7-0.88)

CI—confidence interval, OR—odds ratio.

Table 4. Probability of testing procedure in the year before the NPHS interview in relation to having a regular physician and annual health examinations: *Probabilities were calculated by setting income to upper middle (when examining education), education to high school graduate (when examining income), residence to urban southern Ontario, and visits to a family physician to three or more.*

TEST	HAS A REGULAR PHYSICIAN HAD ANNUAL EXAMINATION OR (95% CI)	HAS A REGULAR PHYSICIAN NO ANNUAL EXAMINATION OR (95% CI)	NO REGULAR PHYSICIAN HAD ANNUAL EXAMINATION OR (95% CI)	NO REGULAR PHYSICIAN NO ANNUAL EXAMINATION OR (95% CI)
Mammograms (age 50-59)	0.58 (0.41-0.73)	0.26 (0.17-0.38)	0.51 (0.21-0.81)	0.21 (0.07-0.50)
Pap test (age 30-39)	0.86 (0.79-0.91)	0.49 (0.40-0.57)	0.59 (0.31-0.82)	0.18 (0.07-0.38)
Cholesterol test (age 60-69)	0.62 (0.47-0.75)	0.35 (0.25-0.47)	0.17 (0.05-0.46)	0.06 (0.02-0.21)

CI—confidence interval, OR—odds ratio.

DISCUSSION

This population-based study of factors related to receiving preventive services used administrative data to ascertain Ontario women's use of screening. Testing rates in Ontario in 1994-1995 are shown in **Table 1**. Rates of Pap smears were in reasonable agreement with the recommendation that testing begin at onset of sexual activity and be repeated at least every 3 years until age 65. Testing every 3 years translates into a population rate of 33/100 women per year. This rate was achieved among women up to about age 60. Having mammograms every 2 years corresponds to a population rate of 50/100 per year. The population rate was 25/100 to 30/100 women per year among women aged 50 to 69. This rate fails to account for those screened under the OBSP, which in 1994-1995 gave 55 000 mammograms, some 14% of all mammograms given to women aged 50 or older.

The estimate that an annual population rate of 33% corresponds to women being tested every 3 years fails, of course, to account for heterogeneity; a rate of 33% could be seen if some women were tested every year while others were never tested. The logistic regression analysis demonstrated heterogeneity among Ontario women. Women with more education were more likely to have Pap smears, mammography, and bone densitometry. Women with higher incomes were more likely to have Pap smears and mammography. Since all these procedures are paid for by universal health insurance, low income would not be a barrier to having a test. It is possible that more educated women request or expect certain screening procedures and that these expectations influence the probability of testing. A study of opportunistic delivery of preventive services found that patient request was associated with receiving increased services.[15]

No association was seen between cholesterol testing and income or education. Among Canadian adults, the

prevalence of elevated cholesterol levels is highest in the lowest socioeconomic category, particularly among those with the lowest levels of education.[16] It is likely that physicians order cholesterol testing in response to presence of risk factors or established disease. The risk-factor gradient probably overwhelms the socioeconomic factors that influence ordering of other tests.

Rural and remote location

Residents of rural areas and northern Ontario were less likely to receive testing. Access to the specialized testing services required for bone densitometry and mammography is restricted in remote areas of the province. A recent survey of Ontario family physicians[17] showed that rural physicians were more likely to "never use densitometry" ($P = .04$). Rural physicians who reported using densitometry used it less frequently ($P = .002$) and were less likely to have local access ($P = .001$) than their urban counterparts. Ontario has a provincial breast-screening program operated by Cancer Care Ontario. Women do not require referral from a physician. The OBSP attempts to deal specifically with the access problem by operating mobile testing facilities in northern Ontario. In 1994-1995, the OBSP reports giving 55344 mammograms representing 31% of all mammograms obtained by women in the north and 12% of all mammograms obtained by women in the south.

Mammography and bone densitometry require a visit to a specialized imaging facility, but Pap smears and venipuncture for cholesterol measurement can be done in a physician's office. Rural and northern areas of the province tend to be relatively short of physicians. Perhaps the physicians in rural areas are so busy that preventive testing is overlooked. A study of 108 community practices in Ohio observed that patients of physicians who saw a high volume of patients had lower up-to-date rates of preventive services.[18]

Periodic health examinations

Women who informed NPHS interviewers that they had regular physicians were significantly more likely to have each type of testing, except mammography. Episodic care by physicians unfamiliar with patients is not conducive to delivery of preventive services. In an analysis of NPHS data, including respondents from all provinces, McIsaac and colleagues[19] found that adults who reported receiving regular care from a family physician were more likely to report receiving recommended preventive services. In our analysis, periodic health examinations, which can be initiated by either patients or physicians, were a strong predictor of testing, even among women with regular physicians.

Women with regular physicians who reported having periodic health examinations were about twice as likely to have one of the screening tests; women who did not report having regular physicians but who reported having periodic health examinations were about three times as likely to have one of the screening tests. The association with having a periodic health examination is in keeping with findings of surveys of primary care providers in British Columbia[20] and New England.[21] Most stated that they performed preventive maneuvers in the context of annual general physical examinations rather than integrating them into routine patient care.

In our analysis, the probability of having a test reached a plateau rapidly in relation to number of office visits; women making 10 visits during the year were no more likely to have tests than women making two or three visits. This suggests that physicians providing episodic care, or focusing on specific health problems, sometimes neglect elements of preventive care.

Increasing rates of preventive screening

What can physicians do to enhance delivery of preventive services? In a survey of Ontario physicians, many reported that they provided less than satisfactory levels of preventive services.[22] More than two thirds of respondents suggested the following barriers to providing recommended preventive care: patient is healthy and does not visit; patient refuses, is not interested, or does not comply; no effective systems to remind patients to come in for preventive care; and priority given to presenting problem. Several authors have offered suggestions for improvement.[23,24] Frame[25] has commented that:

> obstacles to the implementation of preventive services in clinical practice include barriers raised by patients, physicians and the health care delivery system itself. Physicians may overcome these barriers to a great extent by improving their time management skills, practice organization system and reinforcement mechanisms. For clinical prevention to be successfully initiated and maintained in practice: the program must be simple and include only procedures the providers believe are worthwhile; an organized record system should be used; a system of checks and reinforcements for prevention must be instituted in the practice routine, and adequate time for preventive services must be allocated, either by using paramedical personnel or by restricting the practice size.

Limitations

A limitation of the study is that information was not available on why physicians ordered the tests. Almost certainly, some tests would have been done for diagnostic

or follow-up purposes, and the prevalence of screening would thus be overestimated.

Another limitation is that these data refer to events that occurred in 1993-1994. Practice has changed markedly since then. Family physicians are trying to cope with increasingly busy practices, so they have less opportunity to schedule annual health examinations. As well, recommendations to order cholesterol screening, bone density testing, and mammograms have become stronger in the last 10 years, so current screening rates could be substantially higher.

Strengths of this study include the fact that subjects were drawn from across the entire province and not only from the practices of participating physicians, and that information on testing came from an administrative database and did not depend on patient recall or chart review.

Conclusion

Having screening tests was associated with socioeconomic factors including income, education, and place of residence. Patients attending for episodic care were less likely to have preventive testing than patients who had periodic health examinations.

Competing interests

None declared

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Editor's key points

- This study integrated data from the National Population Health Survey and the Ontario Health Insurance Plan to determine factors associated with preventive screening with Pap smears, mammography, bone densitometry, and serum cholesterol measurement.
- Increasing age, higher income, higher education, living in southern Ontario or in an urban area, and having a regular family doctor all increased the likelihood of having preventive screening.
- The likelihood of having screening increased during episodic care, but stopped increasing after three visits in a year. Among women with regular family doctors, those who had periodic health examinations were more likely to have screening.

Points de repère du rédacteur

- Dans cette étude, les données de l'Enquête nationale sur la santé des Canadiens ont été combinées à celles de l'Ontario Health Insurance Plan afin d'identifier les facteurs favorisant un dépistage préventif par des cytologies cervicovaginales, mammographies, ostéodensitométries et bilans lipidiques.
- La probabilité d'avoir de tels examens augmente avec l'âge, le revenu, le niveau de formation. Elle est également plus grande chez celles qui vivent dans le sud de l'Ontario ou dans un centre urbain et qui ont un médecin de famille régulier.
- Cette probabilité augmente aussi avec le nombre de consultations pour des soins épisodiques, mais elle cesse d'augmenter après trois visites par année. Les femmes qui avaient un médecin de famille régulier et qui avaient des examens de santé périodiques avaient plus de chances d'avoir des tests de dépistage.

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