

Immigrant Women and Cervical Cancer Screening Uptake

A Multilevel Analysis

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ABSTRACT

Background: Contextual factors may play an influential role in determining individual uptake of preventive health care services, especially among potentially vulnerable subpopulations. Using cervical cancer screening as a case study, this paper examines the multilevel factors associated with Pap testing in native-born and immigrant women.

Methods: Cross-sectional multilevel logistic regression models were used to identify the individual- and neighbourhood-level characteristics that might explain differences in the lifetime uptake of Pap testing among immigrants and native-born women between the ages of 18 and 69 residing in the Montreal, Toronto and Vancouver Census Metropolitan Areas (CMAs). Individual-level data were drawn from the Canadian Community Health Survey (Cycle 2.1, 2003) and linked with census tract profile data from the Canadian Census (2001).

Results: Findings reveal significant between-neighbourhood variation in uptake. After controlling for age, marital status, access to a regular doctor and socio-economic status, a woman's immigrant status and cultural origin appear to be significantly associated with ever having had a Pap test. In particular, the uptake of cervical cancer screening is less common among recent immigrant women and women of Chinese, South Asian and other Asian backgrounds.

Interpretation: There appear to be significant differences between neighbourhoods and CMAs in the uptake of Pap testing. Findings point to the role of cultural origin, which largely accounts for these differences. This indicates the need to promote greater information and awareness of public health services for cervical cancer screening, especially among recent immigrant women with such backgrounds.

MeSH terms: Women's health; environment, preventive medicine and public health; Papanicolaou smear; immigrants; cross-sectional studies

La traduction du résumé se trouve à la fin de l'article.

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In 2006, 1,350 new cases and 390 deaths from cervical cancer were estimated in Canada.¹ Cervical cancer affects women of all ages and is curable when detected at an early stage using the Papanicolaou smear technique (Pap test).^{2,3} While overall rates of death are decreasing,^{1,4,5} approximately 50% of women with invasive cervical cancer have never had a Pap test.⁶ Failure to participate in Pap testing is the single greatest risk factor for poor outcomes in women who develop cervical cancer.^{7,8} Recent immigrant women may be at a higher risk, primarily because they have lower rates of Pap testing.⁹

Representing a growing proportion of the Canadian population,¹⁰ recent immigrants are less likely to be screened for chronic diseases compared to their longer-term immigrant and native-born counterparts.¹¹⁻¹⁶ Lack of knowledge, unease, and the cultural incongruity that immigrants experience upon arrival may deter the use of health services,¹⁷ especially those that are not necessarily considered essential by the individual. Additional factors associated with a lack of screening include being single, older, reporting low income, low level of education, and speaking neither English nor French.^{12,18}

Interactions between people and places may also influence screening participation. Independent of individual characteristics, it is recognized that an individual's immediate environment may possess both material and social characteristics that are potentially linked to health-seeking behaviours.¹⁹⁻²¹ For example, neighbourhoods may provide important information and support with regard to screening.¹⁶ Given that immigrants as a group are less likely to participate in these services, knowledge of these health services may be less likely to occur when immigrants are living closely together. Areas with high immigrant concentrations may face even greater risk.

The purpose of this study is to investigate the individual and neighbourhood characteristics associated with the uptake of preventive cervical cancer screening in immigrant and native-born women residing in Canada's largest Census Metropolitan Areas (CMAs). In order to address these objectives, the following questions are investigated: 1) Is there evidence of between-neighbourhood variation in the uptake of cervical cancer screening?

2) Does the neighbourhood concentration of immigrants account for between-area differences? 3) Does uptake differ between immigrant and native-born women? 4) To what extent does CMA moderate the association between immigrant status and uptake? 5) Is there evidence of cultural differences?

METHOD

Data

Data are primarily drawn from Cycle 2.1 (2003) of Statistics Canada's Canadian Community Health Survey (CCHS) master file. The objective of the CCHS is to provide timely, reliable, cross-sectional estimates of health determinants, health status and health system utilization at sub-provincial levels. A multi-stage stratified cluster design was used to sample household dwellings, which covered approximately 98% of the Canadian population aged 12 and older living in private households. Additional data come from the 2001 Canadian census, which offers demographic, social and economic information on the population of Canada at various geographical scales. Using Statistics Canada's postal code conversion file to link with the postal codes of CCHS respondents, the 2001 census was used to provide demographic and socio-economic measures for the census tracts (neighbourhoods) in which respondents were residing. Recent comparison of several "neighbourhood" units of analysis suggests that census tracts may be good proxies for natural neighbourhood boundaries in studies of neighbourhood effects on health.¹⁹

Sample for analysis

Women between the ages of 18 and 69, residing in the Montreal, Toronto and Vancouver CMAs were selected. The dependent variable was: whether she has ever had a Pap test. This variable captured individual lifetime uptake of cervical cancer screening, which may include use in countries other than Canada. Approximately 2.8% of those selected did not respond to the Pap test question, leaving 8,327 (*N* unweighted) for assessment.

Variables and measures

Based on a review of the literature, demographic, health, acculturation and socio-

TABLE I
Descriptive Characteristics (%) of Sample, Weighted

Variables	Total Sample	Native-born	Recent Immigrant	Long-term Immigrant
Sample	100.0	61.4	19.5	19.1
Ever had a Pap test				
No	16.1	11.4	34.9	12.5
Yes	83.9	88.7	65.1	87.6
Age (Mean)	41	40	36	50
Marital Status				
Married, Common-law	61.7	56.9	66.4	72.0
Separated, Divorced, Widowed	12.7	12.4	10.5	16.0
Single	25.6	30.7	23.1	12.0
Educational Attainment				
Less than High School	13.0	11.0	12.6	19.9
High School Graduate	27.3	28.3	26.8	24.1
Post Secondary Graduate	59.7	60.6	60.6	56.0
Household Income Adequacy				
Low	9.7	6.9	21.9	7.3
Middle	50.6	47.1	59.6	53.5
High	39.7	46.0	18.5	39.2
Self-reported General Health				
Negative	10.7	8.7	10.6	17.2
Positive	89.3	91.3	89.4	82.8
Has a Regular Doctor				
No	12.2	14.5	13.0	4.1
Yes	87.8	85.5	87.0	96.0
Can Converse in English and/or French				
Yes	96.0	99.7	86.4	94.1
No	4.0	0.3	13.6	5.9
Cultural Origin				
White	70.3	91.2	22.2	52.1
Black	4.0	1.3	6.7	10.0
Chinese	8.6	1.9	25.9	12.7
South Asian	5.1	0.8	15.2	8.7
Other Asian	4.2	1.2	11.4	6.6
All Others	7.8	3.6	18.6	10.0
Neighbourhood Proportion of Immigrants (mean)	3.50	2.78	4.97	4.29
Neighbourhood Disadvantage Index Score (mean)	0.06	-0.04	0.41	0.03
N (weighted)	3,474,352	2,134,383	675,959	664,010

economic variables were identified; coding can be found in the Appendix. Independent individual-level variables included age, marital status and cultural origin (based on self-reported cultural/racial origin), self-reported general health, a variable measuring access to a regular medical doctor, and immigrant status. Immigrant status was distinguished between recent (resident for ≤ 15 years) and long-term (resident > 15 years) immigrant status versus native-born (Canadian-born). As a measure of acculturation, language ability was examined. Socio-economic characteristics included educational attainment and household income adequacy.

Derived from the census tract profile data from the Canadian census, the neighbourhood proportion of immigrants was also included. The percentage of immigrants at the neighbourhood level was expressed in increments of 10 (i.e., 25% took on a value of 2.5). In addition, a neighbourhood disadvantage index score (NDIS) was derived from five variables

(described in the Appendix).²² These five variables were entered into a principal component analysis. To represent NDIS, a factor regression score was calculated by weighting each of the five variables by its factor loading.

Statistical analyses

The analyses entailed a multi-stage process consisting of descriptive statistics and multilevel logistic regression models. Unlike traditional multivariate methods that require aggregation or disaggregation so that variables reflect the individual or group level, a multilevel approach can identify relationships among variables measured at both the individual and group levels. This approach is needed to account for the correlation of responses within naturally formed groupings, such as neighbourhoods.²² Multilevel models were developed to simultaneously consider *i* individual females (Level 1) within *j* neighbourhoods in Montreal, Toronto and Vancouver (Level 2).

TABLE II
Multilevel Logistic Regression Models: Lifetime Pap Test Uptake

	Null Model	Model 2	Model 3	Model 4	Model 5
Intercept	β (se) 1.87‡ (0.04)	β (se) 1.46‡ (0.16)	β (se) 2.70‡ (0.22)	β (se) 2.73‡ (0.22)	β (se) 2.69‡ (0.21)
Variables	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age Centred		1.04‡ (1.03-1.04)	1.03‡ (1.03-1.04)	1.03‡ (1.03-1.04)	1.03‡ (1.02-1.04)
Marital Status (ref=Married, Common-law)					
Separated, Widowed, Divorced		0.91 (0.73-1.13)	0.73† (0.58-0.92)	0.71† (0.57-0.90)	0.65‡ (0.52-0.82)
Single		0.49‡ (0.42-0.58)	0.32‡ (0.27-0.39)	0.32‡ (0.26-0.38)	0.29‡ (0.24-0.35)
Education (ref=High School Graduate)					
Less than High School		0.53‡ (0.43-0.65)	0.51‡ (0.41-0.63)	0.53‡ (0.42-0.66)	0.51‡ (0.41-0.64)
Post Secondary Graduate		1.60‡ (1.37-1.86)	1.81‡ (1.55-2.13)	1.78‡ (1.51-2.09)	1.84‡ (1.56-2.17)
Income Adequacy (ref=Middle)					
Low		0.76* (0.62-0.94)	0.92† (0.74-1.14)	0.93 (0.75-1.16)	0.96 (0.77-1.19)
High		1.60‡ (1.34-1.90)	1.21* (1.01-1.45)	1.21* (1.00-1.45)	1.19 (0.99-1.43)
Neighbourhood Disadvantage Index Score		0.86‡ (0.80-0.93)	1.04 (0.95-1.13)	1.05 (0.96-1.14)	1.02 (0.94-1.12)
Self-reported Health (ref=Negative)					
Positive		1.12 (0.90-1.39)	1.11(0.88-1.38)	1.10 (0.88-1.37)	1.06 (0.84-1.33)
Has a Regular Doctor (ref=No)					
Yes		1.54‡ (1.27-1.86)	1.56‡ (1.29-1.90)	1.57‡ (1.29-1.91)	1.63‡ (1.34-1.99)
CMA (ref=Toronto)					
Montreal		1.26* (1.04-1.51)	0.57‡ (0.44-0.73)	0.52‡ (0.41-0.72)	0.56‡ (0.44-0.73)
Vancouver		1.15 (0.96-1.38)	1.00 (0.83-1.21)	1.40* (1.05-1.86)	1.28* (1.05-1.56)
Neighbourhood Proportion of Immigrant			0.35‡ (0.20-0.62)	0.34‡ (0.19-0.59)	0.68 (0.38-1.20)
Immigrant Status (ref=Native-born)					
Recent Immigrant			0.19‡ (0.16-0.24)	0.23‡ (0.17-0.30)	0.34‡ (0.27-0.43)
Long-term Immigrant			0.56‡ (0.45-0.70)	0.67* (0.48-0.92)	0.72* (0.56-0.93)
Cross-level interactions (ref=Toronto Native-born)					
Montreal* Recent Immigrant Status				1.63* (1.04-2.57)	1.01 (0.73-1.39)
Montreal* Long-term Immigrant Status				0.87 (0.51-1.49)	0.96 (0.72-1.29)
Vancouver* Recent Immigrant Status				0.58† (0.39-0.86)	0.94 (0.67-1.33)
Vancouver* Long-term Immigrant Status				0.56* (0.34-0.92)	0.80 (0.60-1.07)
Can Converse in English and/or French (ref=Yes)					
No				0.55‡ (0.40-0.76)	0.73 (0.53-1.01)
Cultural Origin (ref=White)					
Black					1.35 (0.89-2.06)
Chinese					0.24‡ (0.18-0.31)
South Asian					0.26‡ (0.19-0.37)
Other Asian					0.35‡ (0.25-0.48)
All Others					0.75* (0.56-1.00)

* p<0.05, † p<0.01, ‡ p<0.001, OR Odds Ratio, 95% CI Confidence Interval

TABLE III
Multilevel Logistic Regression Models: Summary of Variance Components, Lifetime Pap Test Uptake

	Null Model	Model 2	Model 3	Model 4	Model 5
Level 2, Neighbourhood	β (se) 0.26 (0.06)	β (se) 0.24 (0.07)	β (se) 0.12 (0.06)	β (se) 0.09 (0.06)	β (se) 0.06 (0.06)
Level 1, Individual	1.00	1.00	1.00	1.00	1.00
Intra-class correlation coefficient	7.32%	6.80%	3.52%	2.66%	1.79%

In models with two levels of analysis, each level is associated with its own, unexplained residual error. At the individual level, the residual error is constrained to 1 in logistic regression; each successive level is associated with its own error term, which estimates the residual between-neighbourhood variation.²³ The proportion of variance accounted for by neighbourhoods can be calculated using the intra-class correlation coefficient (ICC), which is defined as $\rho = \sigma^2 / (\sigma^2 + \pi^2/3)$ where $\pi^2/3=3.29$.²³ This coefficient is the ratio between the neighbourhood-level variation and the total variation (sum of the individual- and neighbourhood-level variation), where a decline in the ICC indicates that the differences

between neighbourhoods have been reduced by the inclusion of explanatory variables.¹⁹

The first model created was the null model with no explanatory variables, which estimates the relative importance of individual and neighbourhood effects in accounting for variation in the outcome (Question 1).²⁴ From the null model, additional models were built incrementally, first controlling for age (mean centred), marital status, socio-economic variables, NDIS, health-related covariates, and CMA. Then the neighbourhood proportion of immigrants (Question 2) and immigrant-related variables (Question 3) were added to create the third model. In

the fourth model, CMA variables and interactions between CMA and immigrant status were included (Question 4), along with language ability. With the addition of cultural origin, the full model was created (Question 5). Odds ratios and associated 95% confidence intervals were estimated.

RESULTS

The sample for analysis represented 3,474,352 females aged 18 to 69 residing in the Montreal, Toronto and Vancouver CMAs. While the majority of the women were born in Canada, 38.6% were immigrants. As in the case of the native-born and long-term immigrants, descriptive

Appendix

Description of selected variables used as covariates in the analyses of lifetime Pap test uptake

Variable	Description	Coding
Age	Age in Years	(Mean centred)
Marital Status	Married, Common-law Separated, Divorced, Widowed Single	Reference category Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no)
Educational Attainment	Less than High School High School Graduate Post Secondary Graduate	Dummy indicator (1 = yes, 0 = no) Reference category Dummy indicator (1 = yes, 0 = no)
Household Income Adequacy	Low Middle (Lower Middle, Upper Middle) High	Dummy indicator (1 = yes, 0 = no) Reference category Dummy indicator (1 = yes, 0 = no)
Neighbourhood Disadvantage Index Score (Mean)	Proportion of the total neighbourhood income coming from government transfer payments Proportion of the neighbourhood 15 years and older without a secondary school diploma Mean household income, reverse coded Proportion of families in the neighbourhood with household incomes below the poverty line Proportion of individuals in the neighbourhood 15 years and older who were unemployed	Using a principal component analysis, one factor emerged that accounted for 68% of the total explained variance.
Self-reported General Health	Negative (Fair, Poor) Positive (Excellent, Very Good, Good)	Reference category Dummy indicator (1 = yes, 0 = no)
Has a Regular Doctor	No Yes	Reference category Dummy indicator (1 = yes, 0 = no)
Census Metropolitan Area (CMA)	Toronto Montreal Vancouver	Reference category Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no)
Neighbourhood Proportion of Immigrants		(See description in text)
Immigrant Status	Native-born (non-immigrant) Recent Immigrant (resident for ≤15 years) Long-term Immigrant (resident >15 years)	Reference category Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no)
Can Converse in English and/or French	Yes No	Reference category Dummy Indicator (1 = yes, 0 = no)
Cultural Origin	White Black Chinese South Asian (East Indian, Pakistani, Sri Lankan) Other Asian (Filipino, Japanese, Korean, Laotian Cambodian, Indonesian, Vietnamese) All Others (Arab, Afghan, Iranian, multiple races, native, self-reported other)	Reference category Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no) Dummy indicator (1 = yes, 0 = no)

results in Table I indicate that recent immigrants tend to be highly educated, report good health and have access to a regular family doctor. Unlike long-term immigrants and native-born Canadians, recent immigrants earn relatively less and a greater percentage cannot converse in English or French. Overall, 89% of native-born, 65% of recent immigrant, and 88% of long-term immigrant women reported having had a Pap test.

Tables II and III display multilevel results. Table III highlights evidence of between-neighbourhood variations in the lifetime uptake of Pap testing. According to the null model, the amount of variation attributable to neighbourhoods was approximately 7.3%. Controlling for demograph-

ic, socio-economic, health-related factors and CMA residency, Model 2 explains only a small proportion of between-neighbourhood variability. Model 3 reveals that the concentration of immigrants at the neighbourhood level and immigrant status exhibit strong associations with the uptake and account for approximately half of the between-neighbourhood differences. As shown in Table II, the odds of ever having had a Pap test decrease by 0.35 with every 10% increase in the concentration of immigrants. Also, the odds of ever having a Pap test are 0.19 and 0.56 for recent and long-term immigrant women, respectively, relative to Canadian-born women.

To examine the extent to which CMA moderates the association between immi-

grant status and uptake, four cross-level interactions are added in Model 4. Relative to non-immigrants residing in Toronto, the results indicate that recent immigrants in Montreal are more likely while recent and long-term immigrants in Vancouver are less likely to have ever had a Pap test. However, these effects become non-significant once cultural origin is taken into consideration in the full model (Model 5). In relation to the white reference group, being Chinese, South Asian or of other Asian origins decreases the likelihood of Pap testing. Cultural origin also appears to explain in part the effect of neighbourhood concentration of immigrants, wherein the size of this effect was reduced from 0.34 to 0.68.

DISCUSSION

This study has focused on individual- and neighbourhood-level influences on the uptake of cervical cancer screening (Pap testing) among women in the Montreal, Toronto and Vancouver CMAs. Findings suggest that dissimilarities in uptake exist between the native-born and the foreign-born populations, after controlling for age, marital status, socio-economic status and health-related characteristics. Building upon earlier studies,^{12,25} this study found that recent and long-term immigrant status is strongly and inversely associated with Pap testing. Possible explanations include lack of knowledge, lack of time, language barriers and cultural factors.^{13,15,26,27} Additional individual-level characteristics associated with uptake were found to be consistent with previous research.

Although modest, there was significant between-neighbourhood variation, which suggests that policies could focus on both people and places. There appear to be significant differences between neighbourhoods and CMAs in the uptake of cervical cancer screening among recent immigrant arrivals. While results indicate that the association between CMA and cervical cancer screening differs by immigrant status, these interactions lose their statistical significance after controlling for cultural origin. This is likely due to differences in the cultural background of immigrants living in these urban centres. This may also be true at the neighbourhood (census tract) level where controlling for cultural origin reduces the effect attributable to the neighbourhood concentration of immigrants to non-significance.

Issues that closely reflect the ethnic or cultural makeup of the immigrant population – including diverse issues such as gender roles, trust of western medicine, attitudes and beliefs about reproductive health practices – may create differentials in the use of preventive health care, and ultimately health. Additional research is required to better understand the impact of uptake and health-seeking behaviours associated with immigrant status versus ethnic and cultural background.

Given the limitation of this study's cross-sectional design, longitudinal information could provide insight into the temporal directions of the associations. This

study also relied upon self-reported information about Pap testing, which may be subject to recall bias. However, the CCHS was particularly valuable given the focus on immigrants; interviews were conducted in over 22 different languages. Furthermore, the multilevel techniques employed have been useful and demonstrate the potential for future applications into preventive health care utilization and other health-seeking behaviours by immigrant status. Research at higher levels serves to identify types of geographical areas where public health interventions, aimed at individual risk reduction, may best be targeted.²⁸ Finally, the study not only highlighted the contextual difference in Pap testing among recent immigrant women but also pointed to the role of cultural background of these women in showing this variation. As discussed in the results, recent immigrant women to Canada and women of Chinese, South Asian and other Asian backgrounds exhibited low uptake of Pap testing. This indicates the need to promote greater information and awareness of public health services for cervical cancer screening, especially among recent immigrant women with such backgrounds.

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RÉSUMÉ

Contexte : Des facteurs contextuels pourraient influencer l'utilisation individuelle des services de santé préventifs, surtout dans les sous-populations potentiellement vulnérables. Notre analyse, réalisée à partir du cas exemplaire du dépistage du cancer du col utérin, porte sur les facteurs multiniveaux associés à l'utilisation du test de Papanicolaou par les Canadiennes de naissance et les immigrantes.

Méthode : Au moyen de modèles de régression logistique transversaux et multiniveaux, nous avons repéré les caractéristiques individuelles et par quartier pouvant expliquer les écarts dans l'utilisation, au cours de la vie, du test de Papanicolaou par les Canadiennes de naissance et les immigrantes de 18 à 69 ans vivant dans les régions métropolitaines de recensement (RMR) de Montréal, Toronto et Vancouver. Les données individuelles provenaient de l'Enquête sur la santé dans les collectivités canadiennes (cycle 2.1, 2003); nous les avons liées aux données descriptives générales par secteur de recensement publiées dans le Recensement du Canada (2001).

Résultats : Nous avons observé des écarts significatifs dans l'utilisation du test de Papanicolaou selon le quartier. Compte tenu de l'âge, de l'état matrimonial, de l'accès à un médecin de famille et du statut socioéconomique, le statut d'immigrante et l'origine culturelle semblent présenter une corrélation significative avec le fait d'avoir subi au moins un test de Papanicolaou. L'utilisation du test est moins courante chez les immigrantes récentes et chez les femmes originaires de la Chine, de l'Asie du Sud et d'autres parties de l'Asie.

Interprétation : Il semble exister des écarts significatifs d'un quartier et d'une RMR à l'autre dans l'utilisation du test de Papanicolaou. La plupart s'expliquent par l'origine culturelle. Il faudrait sans doute promouvoir une information et une sensibilisation plus complètes des services de dépistage du cancer du col utérin, surtout auprès des immigrantes récentes d'origine asiatique.

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PRÉVENTION, PRÉPARATION ET PROTECTION FACE À LA PROCHAINE PANDÉMIE DE GRIPPE

L'Association canadienne de santé publique (ACSP) et le Réseau d'alerte pandémique (RAP) informent les Canadiens sur les précautions que nous pouvons tous prendre pour empêcher la propagation de la maladie, réagir à un état d'urgence et protéger notre santé durant la pandémie.

Partout dans le monde, les gouvernements se mobilisent en vue de la prochaine pandémie de grippe. Les sites Web, fiches d'information et listes de vérification se multiplient. Mais il arrive souvent que le langage soit compliqué et que les renseignements fournis soient de nature technique. C'est la raison pour laquelle l'ACSP et le RAP ont mis au point une trousse d'informations pratiques, fondées sur des faits et rédigées en langage simple.

Cette trousse simple et pratique donnera aux Canadiens l'information dont ils ont besoin pour se protéger durant une pandémie de grippe. Il s'agit de simples précautions que tout le monde peut prendre dans la vie de tous les jours.

Ces mesures de santé publique se résument en trois mots :

- 1. PRÉVENTION** – bonnes habitudes d'hygiène qui réduisent le risque d'attraper et de transmettre la maladie, par exemple bien se laver les mains;
- 2. PRÉPARATION** – instructions faciles à suivre pour se préparer à la pandémie de grippe ou à toute autre situation d'urgence;
- 3. PROTECTION** – renseignements essentiels pour se soigner et se protéger durant la pandémie.

Avec cette trousse, l'ACSP veut inciter les Canadiens à mieux se renseigner et à mettre en pratique les conseils qui leur sont donnés sous forme de simples précautions, afin de limiter les dégâts que la prochaine pandémie pourrait causer. On espère que ces mesures renforceront la résilience et que toute la population sera mieux préparée à faire face à une pandémie de grippe ou à toute autre situation d'urgence en matière de santé publique.

La trousse est disponible en français et en anglais, en ligne. Consultez le site www.pandemie.cpha.ca.