

Understanding the demographic characteristics and health of medically uninsured patients

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Abstract

Objective To determine demographic and diagnostic information about the medically uninsured patient population and compare it with that of the medically insured patient population at a primary care centre.

Design Medical chart audit.

Setting Department of Family and Community Medicine at St Michael's Hospital in Toronto, Ont.

Participants Medically uninsured patients who were treated in the Department of Family and Community Medicine at St Michael's Hospital from 2005 to 2009, as well as randomly selected patients who were insured through the Ontario Health Insurance Program.

Main outcome measures The following information was obtained from patients' medical charts: patient's age, sex, and household income; if the patient had a specific diagnosis (ie, hypertension, type 2 diabetes mellitus, HIV, tuberculosis, substance addiction, or mental health disorder); if the patient accessed a specific category of primary care (ie, prenatal care or routine pediatric care); and the reason for the patient's uninsured status.

Results There was no significant difference in the mean age and sex distribution of insured and uninsured patients. The uninsured group had a significantly lower mean household income ($P=.02$). With the exception of HIV, there was no significant difference in the prevalence of the specific diagnoses studied or in the prevalence of accessing specific categories of primary care between insured and uninsured patients ($P>.05$). The prevalence of HIV was significantly greater in the uninsured group (24%) than in the insured group (4%) ($P=.004$). The largest proportion of uninsured patients lacked health insurance owing to the landed immigrant health insurance waiting period (27%), followed by individuals without permanent resident status in Canada (22%). A subgroup analysis of the uninsured, HIV-positive population revealed that the largest proportion of individuals (36%) lacked health insurance because they had no permanent resident status in Canada.

Conclusion Uninsured and insured patients at the primary care centre did not differ significantly with respect to age and sex distribution; prevalence of hypertension, type 2 diabetes mellitus, tuberculosis, substance addiction, or mental health disorder; or the proportion who sought prenatal or routine pediatric care. The landed immigrant 3-month waiting period was the most common reason that uninsured patients lacked health insurance. Uninsured patients in this study lived in lower-income areas than insured patients did. This, combined with the increased prevalence of HIV in the uninsured group, might lead to a large number of uninsured, HIV-positive patients delaying seeking treatment and might have negative implications for public health.

EDITOR'S KEY POINTS

- This study found no significant difference between insured and uninsured groups in the prevalence of specific diagnoses or the prevalence of accessing specific categories of care. There was a significant difference ($P=.004$) in the proportion of HIV-positive patients between the uninsured and insured groups.
- The most common reasons patients were medically uninsured were the landed immigrant 3-month provincial health insurance waiting period, not having permanent resident status in Canada, having a lost or expired health insurance card, or being a foreign visitor.
- Considering the prevalence of HIV among uninsured individuals included in this study and the fact that treatment has been shown to decrease infection transmission, it might be reasonable to offer HIV treatment free of charge to individuals regardless of their insurance status to protect public health. Future studies might include examining the perspectives of HIV-positive, uninsured individuals to determine their perceived barriers to health care, as well as determining the prevalence of uninsured individuals with HIV and other infectious diseases.

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Déterminer les caractéristiques démographiques et l'état de santé des patients sans assurance médicale

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Résumé

Objectif Déterminer les caractéristiques démographiques et les types de diagnostic des patients sans assurance médicale et les comparer à ceux des patients assurés, dans un établissement de soins primaires.

Type d'étude Révision de dossiers médicaux.

Contexte Le département de médecine familiale et communautaire de l'hôpital St-Michael de Toronto, Ontario.

Participants Patients sans assurance médicale qui étaient traités au département de médecine familiale et communautaire de l'hôpital St-Michael entre 2005 et 2009, de même qu'une sélection aléatoire de patients qui étaient couverts par le programme de l'Assurance-santé de l'Ontario.

Principaux paramètres à l'étude Les renseignements suivants ont été tirés des dossiers médicaux des patients: âge, sexe et revenu familial des patients, présence ou non d'un diagnostic spécifique (c.-à-d. hypertension, diabète de type 2, SIDA, tuberculose, toxicomanie ou maladie mentale); le fait pour un patient de recevoir un type spécifique de soins primaires (c.-à-d. suivi prénatal ou suivi pédiatrique de routine); et la raison pour laquelle le patient n'était pas assuré.

Résultats Il n'y avait pas de différence significative entre les patients assurés et non assurés pour ce qui est de l'âge et du sexe. Le groupe non assuré avait un revenu familial significativement plus bas ($P = .02$). Sauf pour le SIDA, il n'y avait pas de différence significative entre assurés et non assurés pour ce qui est de la prévalence des diagnostics spécifiques à l'étude ni pour le fait de recevoir un type spécifique de soins primaires ($P > .05$). Les non-assurés avaient une prévalence significativement plus grande de SIDA (24%) par rapport aux assurés (4%) ($P = .004$). La plupart des patients non assurés étaient des nouveaux immigrants qui n'avaient pas encore droit à l'assurance santé en raison de la période d'attente (27%), suivis des personnes qui n'avaient pas le statut de résidents permanents au Canada (22%). Une analyse du sous-groupe des sidatiques non assurés a révélé que la plupart d'entre eux n'avaient pas d'assurance santé parce qu'ils n'avaient pas le statut de résident permanent au Canada.

Conclusion Parmi les patients du centre de soins primaires, il n'y avait pas de différence significative entre assurés et non-assurés pour ce qui est de l'âge et du sexe, de la prévalence d'hypertension, de diabète de type 2, de tuberculose, de toxicomanie ou de maladie mentale, ni pour ce qui est du pourcentage de ceux qui consultaient pour un suivi prénatal ou un suivi pédiatrique de routine. La principale raison pour laquelle les patients n'avaient pas d'assurance santé était la période d'attente de 3 mois imposée aux nouveaux immigrants. Dans cette étude, les patients sans assurance vivaient dans des milieux moins favorisés que les assurés. Cela, combiné à la prévalence plus élevée du SIDA dans le groupe non assuré, pourrait faire en sorte qu'un grand nombre de sidatiques non assurés tardent à consulter, avec des conséquences désastreuses pour la santé publique.

POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude n'a trouvé aucune différence significative entre assurés et non-assurés pour ce qui est de la prévalence de diagnostics spécifiques ou des consultations dans des domaines spécifiques de soins. Par contre, il y avait une différence significative entre assurés et non-assurés ($P = .004$) pour ce qui est de la proportion de sidatiques séropositifs.
- Les raisons les plus fréquentes pour lesquelles les patients n'avaient pas d'assurance médicale étaient les 3 mois d'attente imposés aux nouveaux immigrants avant d'être couverts par l'assurance santé provinciale, et le fait de ne pas avoir le statut de résident permanent au Canada, d'avoir une carte santé expirée ou égarée, ou d'être un étranger en visite.
- Compte tenu de la prévalence du SIDA chez les personnes non assurées de notre étude et du fait que le traitement est reconnu pour réduire la transmission de l'infection, il semblerait raisonnable d'offrir gratuitement le traitement tant aux non-assurés qu'aux assurés afin de protéger la santé publique. Dans des études futures, on pourrait consulter des sidatiques séropositifs sans assurance pour savoir ce qu'ils pensent des obstacles aux soins de santé, de même que pour déterminer la prévalence des non-assurés atteints de SIDA ou d'une autre maladie infectieuse.

Cet article a fait l'objet d'une révision par des pairs.
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Canada's national health insurance program is designed to ensure that all residents have reasonable access to medically necessary hospital and physician services. Despite this, Canada has a substantial medically uninsured population,^{1,2} which is assumed to be largely composed of the homeless and underhoused, landed immigrants who are caught in mandatory waiting periods for provincial health insurance eligibility, those who have lost provincial health insurance cards, temporary foreign visitors, and individuals with no legal immigration status in Canada.¹⁻⁴ Data on the total prevalence of medically uninsured individuals in Canada are not available.^{1,2} However, it is estimated that 100 000 to 300 000 individuals without legal immigration status reside in Canada.⁵

Information on the demographic characteristics and health status of medically uninsured patients in Canada is scant.^{1,2} Health care professionals who treat medically uninsured patients believe that high levels of morbidity are associated with the difficulty of health care access for these patients.^{1,2} The Caulford and Vali study on the Volunteer Clinic for Medically Uninsured Immigrants and Refugees in Scarborough, Ont, from 2000 to 2005 found that 60% of the pregnant women lacked sufficient provider contact, pelvic examinations, diabetes screening, or counseling about the use of folic acid before their presentations at the clinic.¹ In addition, the mean gestational age at presentation was 23 weeks.¹

American studies have illustrated that uninsured adults receive less preventive health care^{6,7} and are more likely to present with later-stage diagnoses of cancer than insured adults are.^{8,9} In addition, uninsured patients often delay seeking care for potentially serious symptoms and are more likely than insured patients to present with a ruptured appendix.¹⁰ Not surprisingly, uninsured patients are more likely than insured patients to report unmet health needs¹¹ and declining health.¹²

The Department of Family and Community Medicine (DFCM) at St Michael's Hospital in Toronto, Ont, provides primary health care to an inner-city population in downtown Toronto. The St Michael's Hospital DFCM has established the Compassionate Care Program, which waives hospital registration fees (approximately \$200 per visit) and physician professional fees (approximately \$40 per visit) for medically uninsured patients who cannot afford out-of-pocket payments. This program allows medically uninsured patients to receive primary care free of charge at any of the 5 St Michael's Hospital DFCM clinics.

This study examined demographic and diagnostic information of the medically uninsured patient population who used the Compassionate Care Program and compared it with that of the insured patient population at the St Michael's Hospital DFCM.

METHODS

The St Michael's Hospital DFCM billing records were used to identify the patients whose primary care was billed under the Compassionate Care Program from 2005 to 2009. This amounted to a total of 52 patients. The following information was obtained from patients' medical charts: age, sex, and postal code; if the patient had a specific diagnosis (ie, hypertension, type 2 diabetes mellitus [DM], HIV, tuberculosis [TB], substance addiction, or mental health disorder [as per the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition, criteria]); if the patient accessed a specific category of primary care (ie, prenatal or routine pediatric care); and, if available, the reason for the patient's uninsured status. Statistics Canada 2006 census data were used to determine the median income per household for each patient postal code.¹³ Routine pediatric care was classified as any immunization, well-baby checkup, or yearly physical for patients younger than 18 years of age. Reason for uninsured status was obtained when available from each medical chart.

A group of 52 insured patients from the St Michael's Hospital DFCM was randomly selected to serve as a control group. Owing to resource constraints, the control group was limited to 52 insured patients.

Age and median income per household were compared between the medically uninsured and insured groups using 2-sample *t* tests. Insured and uninsured frequencies for the variables of patient sex, specific diagnosis, and category of primary care accessed were calculated and compared using Pearson χ^2 tests, and Fisher exact tests were used when applicable. Microsoft Excel and SPSS, version 19, were used for data analysis.

The Research Ethics Board at St Michael's Hospital granted ethics approval for this study.

RESULTS

In total, 52 patients used the Compassionate Care Program at the St Michael's Hospital DFCM from 2005 to 2009. Fifty-two medically insured patients were randomly selected as a control group. Patients whose charts could not be located were excluded (2 insured and 7 uninsured patients). The 2 insured patients whose charts could not be located were both female patients and their mean age was 29 years. The group of 7 uninsured patients whose charts could not be located comprised 5 female and 2 male patients with a mean age of 43 years. There was no significant difference found with respect to mean age of the insured patients (40.3 years of age) versus the uninsured patients (38.9 years of age) included in the study ($P=.73$) (Table 1).¹³

Table 1. Demographic characteristics of medically insured and uninsured patients

CHARACTERISTICS	INSURED	UNINSURED	P VALUE
Mean (SD) age,* y	40.3 (21.0)	38.9 (18.2)	.73
Male-to-female ratio (%)*	22:28 (44:56)	18:27 (40:60)	.69
Mean (SD) income per household, [†] \$	57 707 (28 267)	43 681 (25 697)	.02

*For the variables of age and sex distribution, 50 insured and 45 uninsured patients were included in the comparison.

[†]Statistics Canada 2006 census data¹³ and patient postal code were used to determine the median income per household for each patient. A total of 43 insured and 37 uninsured patients were included in the comparison.

In addition, there was no significant difference in the sex distribution in the insured group (44% men, 56% women) and the uninsured group (40% men, 60% women) ($P = .69$) (Table 1).¹³

Patients whose charts did not include a forwarding address were excluded from the comparison of household income (which was determined by the patient's postal code using Statistics Canada 2006 census data for median income per household). One insured patient and 7 uninsured patients were excluded. In addition, the median income per household was not available from Statistics Canada for certain postal codes (1 uninsured patient and 6 insured patients). In total, 43 insured and 37 uninsured patients were included in this portion of the study. A significant difference in mean income per household ($P = .02$) was found between the insured (\$57 707) and the uninsured (\$43 681) groups (Table 1).¹³

There was no significant difference between insured and uninsured groups in the prevalence of hypertension, type 2 DM, TB, substance addiction, or mental health disorder ($P > .05$) (Table 2). Similarly, there was no significant difference between the groups in the proportion of patients seeking prenatal or routine pediatric care. A significant difference ($P = .004$) was found in the proportion of HIV-positive patients between the uninsured and insured groups (Table 2).

Finally, the explanation for lack of medical insurance coverage was investigated in the uninsured group (Table 3). The largest proportion of medically uninsured patients was uninsured owing to the landed immigrant 3-month provincial health insurance waiting period (27%), followed by individuals without permanent resident status in Canada (22%), individuals who had lost or expired health insurance cards (16%), and foreign visitors (11%). Eleven medical charts (24%) did not include reasons for lacking insurance. The category of "individuals without permanent resident status" refers to individuals who reside in Canada illegally, as well

Table 2. Number and percentage of insured (N = 50) and uninsured (N = 45) patients with the studied diagnoses or who sought care in the assessed categories of primary care

DIAGNOSIS OR CATEGORY OF PRIMARY CARE	INSURED, N (%)	UNINSURED, N (%)	P VALUE
Diagnosis			
• Hypertension	7 (14)	7 (16)	.831
• Type 2 diabetes mellitus	3 (6)	5 (11)	.470
• HIV	2 (4)	11 (24)	.004
• Tuberculosis	3 (6)	6 (13)	.300
• Substance addiction	3 (6)	2 (4)	> .99
• Mental health disorder	7 (14)	7 (16)	.831
Category of primary care			
• Prenatal care	3 (6)	7 (16)	.184
• Routine pediatric care	9 (18)	5 (11)	.344

Table 3. Uninsured patients' reasons for their medically uninsured status: N = 45.

REASON FOR UNINSURED STATUS	N (%)
Landed immigrant 3-month waiting period	12 (27)
No permanent resident status in Canada (includes individuals in the process of applying for residency in Canada)	10 (22)
Lost or expired health card	7 (16)
Foreign visitor	5 (11)
No reason provided	11 (24)

as individuals who are in the process of applying for permanent resident status in Canada.

A subgroup analysis of the HIV-positive, uninsured population (11 patients) revealed that the largest proportion (36%) of individuals lacked health insurance because they had no permanent resident status in Canada, followed by landed immigrants caught in the mandatory health insurance 3-month waiting period (18%), foreign visitors to Canada (18%), and individuals who had lost or expired health insurance cards (9%) (Table 4). Two medical charts (18%) did not include reasons for the lack of insurance.

DISCUSSION

There was no significant difference found between insured and uninsured patients with respect to mean patient age and proportion of male and female patients (Table 1).¹³ Sixty percent of the uninsured patients were female; Caulford and Vali reported similar findings (66% of patients in their study were female).¹

The medically uninsured patients lived in lower-income areas than their insured counterparts did

Table 4. Uninsured, HIV-positive patients' reasons for their medically uninsured status: N = 11.

REASON FOR UNINSURED STATUS	N (%)
Landed immigrant 3-month waiting period	2 (18)
No permanent resident status in Canada (includes individuals in the process of applying for residency in Canada)	4 (36)
Lost or expired health card	1 (9)
Foreign visitor	2 (18)
No reason provided	2 (18)

(Table 1),¹³ and thus they likely also had lower incomes. In the event of illness, if free primary health care could not be obtained, having to pay out of pocket for care would be a serious financial burden for these patients. Uninsured patients often delay seeking care in the event of illness.^{1,10,14}

For the diagnoses studied, there was no significant difference in the prevalence of hypertension, type 2 DM, TB, substance addiction, or mental health disorder between insured and uninsured patients (Table 2). Similarly, there was no significant difference found in the proportion of patients seeking prenatal or routine pediatric care between the insured and uninsured groups (Table 2). Similar to Caulford and Vali's¹ results, 16% of the uninsured patients who presented required prenatal care.

A novel finding is the significant difference in the proportion of HIV-positive patients between the 2 groups (24% of uninsured patients compared with 4% of insured patients; $P = .004$) (Table 2). Twenty-two percent of all uninsured patients and 36% of HIV-positive, uninsured patients were individuals with no permanent resident status in Canada (Tables 3 and 4). Human immunodeficiency virus is an infectious disease and can be transmitted to humans regardless of their access to health care.¹⁵⁻¹⁷ For individuals infected with HIV-1, early initiation of antiretroviral therapy when CD4 cell counts are between 350 and 500 cells/mm³ has been associated with relative reduction of 96% in partner transmission, as compared with delaying treatment until CD4 cell counts fall below 250 cells/mm³.¹⁷ Barriers to health care for HIV-positive, uninsured individuals must be addressed to allow for testing, counseling on transmission prevention, and receiving treatment, as well as to not only improve the health of the affected individual, but also to decrease the spread of the infection to the public.

In Quebec, landed immigrants who are diagnosed with an infectious disease during their 3-month waiting period for provincial health insurance are eligible to receive treatment covered by provincial health insurance.¹⁸ While this only applies to landed

immigrants, the largest proportion of uninsured patients in this study (27%) and the second-largest proportion of HIV-positive, uninsured patients (18%) were uninsured for this reason (Tables 3 and 4). Enacting similar legislation in other provinces that have health insurance waiting periods might be a protective measure to public health. In addition, HIV testing is part of Citizenship and Immigration Canada's medical examination,¹⁹ which gives provinces an opportunity to identify HIV-positive individuals and initiate treatment.

Abolishing health insurance waiting periods altogether might in fact be a better option. The Ontario Medical Association found that delaying health care coverage for landed immigrants not only negatively affected the health of the individual, but also the general public in the case the individual contracted an infectious disease.¹⁴ In this study, 18% of HIV-positive, uninsured patients (Table 4) lacked health insurance owing to the 3-month health insurance waiting period. This supports the Ontario Medical Association's assertion that the 3-month health insurance waiting period might be detrimental to public health.¹⁴


It might be beneficial to public health for the health care system to provide medical care to all HIV-positive patients regardless of their permanent resident status in Canada, which is not without precedent. In 2006, New Zealand adopted the Special Zimbabwe Residence Policy for Zimbabweans who had fled their native country.²⁰ The prevalence of HIV in Zimbabwe was 20.1% in 2005.²¹ To protect public health, the Special Zimbabwe Residence Policy stipulated that undocumented Zimbabweans be offered residency in New Zealand regardless of their health status to allow HIV-positive Zimbabweans to come forward for treatment with protection from deportation.²⁰ Considering the prevalence of HIV among uninsured individuals included in this study and the fact that treatment has been shown to decrease infection transmission,¹⁷ it might be reasonable to offer HIV treatment free of charge to individuals regardless of their insurance status to protect public health.

Limitations

This study was limited by the size of the uninsured group, as only 52 patients used the Compassionate Care Program from 2005 to 2009. In addition, a large portion of the St Michael's Hospital DFCM patient population comprises vulnerable, inner-city patients, not typical of most primary care centres. These factors might limit the external validity of this study. Furthermore, members of the uninsured group were uninsured for a number of different reasons, and as a result the uninsured group might be considerably heterogeneous. Further study into the demographic characteristics and health of the various uninsured subgroups would be useful

when considering the applicability of these results to informing public policy. The internal validity of this study was limited by the fact that medical charts of 7 uninsured patients and 2 insured patients could not be located. The mean age of the 7 uninsured patients whose charts could not be located was 43 years (mean age of the uninsured group was 38.9 years [Table 1]¹³) and 5 of the 7 uninsured were female patients (71%) (proportion of female patients in the uninsured group was 60%). The consistency of these demographic characteristics implies that the effect of these missing charts on the internal validity of this study might be minimal. Also, it is unknown whether all the patients included in the study were screened for the diagnoses investigated. Future studies might include examining the perspectives of HIV-positive, uninsured individuals to determine their perceived barriers to health care, as well as determining the prevalence of uninsured individuals with HIV and other infectious diseases in Toronto and throughout Canada.

Conclusion

Insured and uninsured patients do not differ significantly with respect to age and sex distribution; prevalence of hypertension, type 2 DM, TB, substance addiction, or mental health disorder; or the proportion of patients who access prenatal or routine pediatric care. In addition, uninsured individuals lack insurance for a number of reasons, the most common being the landed immigrant 3-month waiting period. The largest proportion of HIV-positive, uninsured patients lacked health insurance because they did not have permanent resident status in Canada. Compared with insured individuals, uninsured individuals were found to reside in lower-income areas. This, combined with the increased prevalence of HIV in the uninsured group, might cause a large number of HIV-positive patients to delay seeking treatment. Based on the results of this study, it is reasonable to consider offering medical care to all individuals regardless of their insurance status as a measure to protect public health. 

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Contributors

Ms Bunn conducted the chart-audit portion of the study and analysis. **Mr Fleming** provided consultation and logistical assistance. **Mr Rzeznikewicz** performed the statistical analysis. **Dr Leung** supervised all aspects of the study.

Competing interests

None declared

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