

# Who provides walk-in services?

## *Survey of primary care practices in Ontario*

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### ABSTRACT

**OBJECTIVE** To compare walk-in clinics with other primary care settings on characteristics associated with best practices in primary care.

**DESIGN** A mailed self-administered questionnaire asked about organizational and clinical characteristics of primary care practices located in major urban and suburban areas in Ontario.

**SETTING** Four types of fee-for-service group practices: walk-in and urgent-care clinics (WICs), mixed practices (MPs), after-hours clinics (AHCs), and group family practices (GFPs).

**PARTICIPANTS** A physician or a staff member involved in practice administration.

**MAIN OUTCOME MEASURES** The four practice types were compared on organizational characteristics and measures of access, continuing care, comprehensiveness, coordination, and mechanisms for monitoring quality of care.

**RESULTS** Walk-in clinics, MPs, and AHCs were open more hours during evenings and weekends and were more likely to see patients without appointments; GFPs were more likely to have on-call arrangements. Group family practices saw a larger proportion of patients for whom they provided ongoing care; WICs and MPs reported that more than 60% of their visits were with "regular" patients. Walk-in clinics were less likely to provide preventive services and psychological counseling than were GFPs and MPs. A few WICs, MPs, and GFPs had procedures to support coordination of care or to monitor quality of care.

**CONCLUSION** Although WICs, MPs, and AHCs provided walk-in services to Ontario patients, WICs and MPs also provided a substantial amount of ongoing care and preventive services. Independent AHCs appeared to most closely fit the "walk-in clinic" stereotype.

### RÉSUMÉ

**OBJECTIF** Comparer les cliniques sans rendez-vous avec les autres milieux de soins de première ligne en fonction des caractéristiques des pratiques exemplaires des soins de première ligne.

**CONCEPTION** Un questionnaire à remplir par l'intéressé, envoyé par la poste, posait des questions sur les caractéristiques organisationnelles et cliniques des pratiques de première ligne, situées dans les principales régions urbaines et de banlieue de l'Ontario.

**CONTEXTE** Quatre genres de pratiques en groupe rémunérées à l'acte: des cliniques sans rendez-vous et d'urgence (CSR), des pratiques mixtes (PM), des cliniques après les heures (CAH) et des pratiques familiales collectives (PFC).

**PARTICIPANTS** Un médecin ou un membre du personnel impliqué dans l'administration de la pratique.

**PRINCIPALES MESURES DES RÉSULTATS** Les quatre types de pratique ont été comparés en fonction des caractéristiques organisationnelles et de mesures de l'accès, de la continuité des soins, de la nature complète des soins, de la coordination et des mécanismes de surveillance de la qualité des soins.

**RÉSULTATS** Les cliniques sans rendez-vous, les PM et les CAH étaient ouvertes un plus grand nombre d'heures durant les soirées et les fins de semaine et plus enclines à voir des patients sans rendez-vous; les PFC étaient plus susceptibles d'avoir des arrangements de service sur appel. Les pratiques familiales collectives voyaient une plus grande proportion de patients auxquels ils dispensaient des soins continus. Les CSR et les PM ont signalé que plus de 60% des consultations étaient auprès de patients «réguliers». Les CSR étaient moins enclines à dispenser des soins de prévention et du counseling psychologique que ne l'étaient les PFC et les PM. Quelques CSR, PM et PFC avaient des procédures pour appuyer la coordination ou surveiller la qualité des soins.

**CONCLUSION** Si les CSR, les PM et les CAH offraient tous des services sans rendez-vous aux patients de l'Ontario, les CSR et les PM dispensaient aussi un volume considérable de soins continus et des services de prévention. Les CAH indépendantes semblaient répondre plus fidèlement au stéréotype de «la clinique sans rendez-vous».

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Walk-in clinics (WICs) continue to be a focus of controversy in several countries, including Canada,<sup>1-5</sup> the United States,<sup>6,8</sup> and England.<sup>9,10</sup> Although neither reliable information on WICs in Canada nor consensus on how they should be defined exists, they are perceived to provide suboptimal care while disrupting the continuity of care offered by physicians in family practices.<sup>1,2,7,11</sup>

Walk-in clinics appeared in Canada approximately 20 years ago.<sup>1,3</sup> The defining characteristics of these non-hospital-based clinics are care provided without appointments and office hours extending into evenings and weekends.<sup>2,4,7,8,11</sup> Extended office hours and walk-in services are thought to be particularly attractive to the many families in which the sole parent or both parents are employed during the day.<sup>2</sup> There is concern, however, that greater access is gained at the expense of other aspects of optimal care and is exemplified by single contacts with patients to treat a limited range of acute problems with no responsibility for providing ongoing, coordinated care.

These perceptions are based on limited information about these clinics and how they compare with other sources of primary care. A commentary<sup>12</sup> on a literature review of WICs in Canada<sup>13</sup> noted that, of the nine studies that included primary data collection, six were surveys of patients, one reviewed clinical records in a single after-hours clinic, one surveyed staff in WICs, and one compared treatment costs in WICs, general practices, and emergency departments.

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Our study is unique in that it compares four types of fee-for-service group practices: walk-in or urgent-care clinics (WICs), mixed practices (MPs) that combine walk-in services with family practice, after-hours clinics (AHCs), and group family practices (GFPs). The four practice types are first described and then compared using measures for each of the five components of best practice described below.

Measures of access to care reflect the general consensus on the need for 24-hour-a-day, 7-day-a-week response to urgent problems as well as reasonable access for nonurgent problems.<sup>14-17</sup> Because this was an organizational study, continuing care was measured as the estimated proportion of visits made by patients for whom the practice provided ongoing care with the understanding that using a single site is preferable to using multiple sites, especially if patient records are shared.<sup>18-20</sup>

Starfield<sup>18</sup> suggests that preventive services provide a good example of comprehensiveness of care. Services selected to measure comprehensiveness are considered to be valuable components of primary care.<sup>17,18,21-24</sup>

Coordination of care depends on the availability, transfer, and use of information on a patient's health problems and health care to determine current service needs. Within a practice, this includes physicians' ability to assume care for one another's patients supported by a single, up-to-date patient record.<sup>17,18</sup> As well, patient reminder systems have been reported to improve coordination and delivery of services, such as immunizations<sup>25</sup> and cervical cancer screening.<sup>26,27</sup>

Borgiel and associates<sup>28</sup> found that quality of care scores were significantly higher for certificated members of the College of Family Physicians of Canada (who had had residency training in family medicine) compared with non-members. Finally, practice guidelines and chart audit are examples of mechanisms used to monitor quality and support quality improvement.<sup>15,17,18</sup>

The organizational survey described in this paper is one component of The Ontario Walk-in Clinic Study, a 3-year comprehensive research project funded by The Physicians' Services Incorporated Foundation to investigate the role of WICs in Ontario and their effect on the health care system. The project included researchers from the University of Toronto, McMaster University, and the University of Western Ontario.

Background information was obtained from a literature review and unstructured interviews with key informants. Nine focus groups were conducted with physicians from WICs, family practices, and emergency departments. Information obtained from these sources

was used to develop questionnaires for a primary care physician survey, a population-based consumer survey, and the primary care organization survey described in this paper. Case studies of WICs, family practices, and emergency departments used chart audits and patient surveys to obtain comparative information on patient satisfaction, quality of care, use, and estimated costs.

## METHOD

The organizational survey focused on major urban and suburban areas in Ontario where WICs were known to exist: the greater Toronto area, Hamilton-Wentworth, London, Ottawa, Kingston, and Kitchener-Waterloo. The sampling frame was constructed from:

- a search of telephone directories, which identified 313 primary care medical clinics (including those advertising walk-in services);
- lists of 38 community health centres and 61 health service organizations obtained from the Ontario Ministry of Health; and
- a random sample of 391 primary care physicians (family physicians, general practitioners, pediatricians) obtained from the Canadian Medical Directory database.

The final sample of 803 primary care practices was reviewed to ensure that each practice site was listed only once. Each practice was telephoned to confirm that it was an active primary care practice and to identify the person who could most appropriately complete the questionnaire. In most cases, this person was a physician or member of the administrative staff. Questionnaire instructions stressed that, if the practice was part of a multisite organization, all responses should pertain to the particular practice site that received the questionnaire. Results reported in this paper are based on responses from WICs, MPs, AHCs, and GFPs. To be included in the analysis, practices had to be community-based, fee-for-service practices with two or more physician partners.

No comprehensive databases in Ontario identify practices as WICs, MPs, AHCS, or GFPs. Therefore it was impossible to calculate directly the sample size required to get an adequate representation of the different types of clinics providing walk-in services. To maximize the number of these clinics in our sample, we used telephone directories as a source of clinics providing walk-in services and included all such clinics as part of our sample.

The questionnaire's content validity was based on physician focus groups, key informant interviews, and the literature review. Using the expert panel method<sup>29,30</sup> and principles of questionnaire design,<sup>31-33</sup> we generated and reviewed a pool of questions using the criteria of focus, clarity, brevity, vocabulary, readability, completeness, and adequacy of responses. Questionnaire items addressed practice organization, office hours, clinic practice, patients, physician characteristics, and administrative arrangements. The draft questionnaire was pretested on 15 physicians in community-based practices, revised based on their comments, and mailed in October 1997 to our sample of primary care organizations. In addition to the initial mailing, the survey included two reminder postcards and a second questionnaire mailing to nonrespondents that was followed by a phone call if there was still no response.

Practice type was determined by the primary care organization's response to the question, "Which of the following best characterizes your organization?" Organizations could select from several responses: WIC, AHC, urgent-care clinic, family practice—solo, family practice—shared or group, family practice—community health centre, family practice—health service organization, and other (please specify). The most frequent use of the "other" category was by mixed practices that combined WICs with family practices. We decided to have organizations define their practice types themselves for two reasons. First, we wanted to compare practice types on the very characteristics normally used to define WICs (eg, patients seen without appointment, extended hours). Second, we thought that having the organizations define their own practice types would more accurately reflect their organizational self-image and practice philosophy.

Data were analyzed by the  $\chi^2$  method, the two-tailed Fisher exact test, and analysis of variance, as required. The probability of a type I error was set at  $P .05$  (two-tailed). Means and 95% confidence intervals (CIs) are reported for the analyses of variance, and frequencies and percentages are reported for the  $\chi^2$  analyses. Comparisons of the four practice types are shown in **Tables 1 to 3**. Paired samples were compared, and significant differences between pairs of practice types are reported in the text.

The study was approved by ethics review committees at the University of Toronto, McMaster University, and the University of Western Ontario.

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## RESULTS

Sixty-four of the 803 practices included in the sample were deemed ineligible (eg, providing specialized services only) resulting in a final survey sample of 739. The final survey response rate was 57% (N = 421/739). The subgroups that are the focus of this paper include 214 practices distributed across the four practice types: 13.6% WICs (n = 29, including 24 walk-in clinics and five urgent care clinics); 12.6% MPs (n=27); 5.6% AHCs (n=12); 68.2% GFPs (n=146). After-hours clinics are independent entities, not extensions of family practices established to provide after-hours care for their own patients. As noted above, since no comprehensive databases identify practices as WICs, MPs, AHCs, or GFPs, it was impossible to calculate individual response rates for the four practice types.

### Practice types

On average, GFPs had been established for twice as long as the other three practice types (Table 1). After-hours clinics and GFPs were significantly more likely to be owned by physicians. While the largest proportion of patients seen in WICs, MPs, and GFPs were between 16 and 64 years, the largest proportion of patients seen in AHCs were 15 years of age or younger. Group family practices were significantly more likely to see patients 65 years or older than were WICs or AHCs. There were no differences in the proportion of women and men seen in the four practice types.

### Access to care

Although GFPs, WICs, and MPs had similar normal weekday office hours (between 8:00 AM and 6:00 PM),

WICs and MPs had significantly more extended office hours (ie, between 6:00 PM and 8:00 AM weekdays and anytime on weekends). After-hours clinics were open almost exclusively during extended hours (Table 2).

The defining characteristic of WICs is access to services without an appointment. The four practice types were significantly different from each other on this variable, presenting a continuum from GFPs, where 19% of patients were seen without appointments, to AHCs, where 100% of patients were seen without appointments. Access to care also can be assessed by the existence of on-call coverage for patient care when the office is closed. Group family practices were significantly more likely than the other three practice types to have on-call arrangements, but 41% did not have on-call arrangements and, instead, referred patients to other sources of care, most often emergency departments. A small proportion of WICs and MPs had on-call arrangements when their offices were closed.

### Continuing care

Compared with the other three practice types, a significantly larger proportion of visits to GFPs were made by "regular" patients, defined as patients for whom the practices provided ongoing primary care (Table 2). Both WICs and MPs indicated, however, that just over 60% of their visits were made by regular patients. One measure used to determine physician availability to provide continuing care was the proportion of physicians working full time (defined as 30 hours or more at a single practice site). Group family practices had a significantly greater proportion of full-time physicians compared with the other three practice types.

**Table 1. Structural characteristics by primary care practice type**

PRACTICE CHARACTERISTICS	WALK-IN CLINICS (N = 29)	MIXED PRACTICES (N = 27)	AFTER-HOURS CLINICS (N = 12)	GROUP FAMILY PRACTICES (N = 146)	P VALUE
Mean years since practice established (95% confidence interval [CI])	9.8 (6.0-13.6)	8.6 (7.2-10.0)	8.3 (7.2-9.3)	19.2 (16.9-21.5)	.001
Physician-owned practices (%)	16 (55.2)	15 (55.6)	11 (91.7)	111 (76.0)	.01
Mean percentage of patients 15 years or younger (95% CI)	28.3 (22.5-34.2)	30.8 (26.0-35.5)	48.9 (39.2-58.6)	26.0 (23.7-28.2)	.01
Mean percentage of patients 16 to 64 years (95% CI)	53.1 (46.8-59.4)	47.5 (40.9-54.1)	32.5 (26.9-38.2)	44.8 (42.5-47.3)	.01
Mean percentage of patients 65 years or more (95% CI)	18.6 (14.7-22.4)	21.9 (17.3-26.6)	16.9 (9.6-24.2)	28.8 (26.5-31.1)	.05
Mean percentage of female patients (95% CI)	57.2 (54.4-60.1)	58.0 (55.0-60.9)	55.0 (51.6-58.4)	59.8 (58.3-61.3)	Not significant

**Table 2. Access to care and continuing care by primary care practice type: *P* value was .001.**

PRACTICE CHARACTERISTICS	WALK-IN CLINICS (N = 29)	MIXED PRACTICES (N = 27)	AFTER-HOURS CLINICS (N = 12)	GROUP FAMILY PRACTICES (N = 143)
<b>ACCESS TO CARE</b>				
Mean number of regular hours weekly (95% confidence interval [CI])	40.1 (35.3-44.9)	44.5 (43.2-45.7)	2.1 (0.4-4.5)	43.0 (42.2-43.7)
Mean number of extended hours weekly (95% CI)	25.2 (19.7-30.7)	24.8 (22.6-27.0)	31.9 (7.5-36.2)	9.4 (7.9-10.9)
Mean percentage of patients seen without appointment (95% CI)	81.0 (74.1-87.9)	53.8 (43.3-64.3)	100.0 (100.0-100.0)	19.2 (15.4-22.9)
Number of practices with on-call arrangements after office closed (%)	2 (6.9)	4 (14.8)	2 (16.7)	84 (58.7)
<b>CONTINUING CARE</b>				
Mean percentage of visits made by patients for whom the practices provide ongoing primary care (95% CI)	61.3 (50.6-72.0)	64.5 (54.7-74.3)	4.2 (0.0-11.6)	92.0 (90.1-93.8)
Mean percentage of physicians who are full time (ie, 30 hours or more per week) (95% CI)	29.3 (17.3-41.3)	39.3 (28.2-50.4)	0.0 (0.0-0.0)	67.2 (61.5-72.9)

### Comprehensiveness of care

Respondents were asked whether preventive services and management of psychological problems were routinely available in their practices (Table 3). After-hours clinics were the least likely to provide any of these services. Even when they are removed from the analysis, however, significant differences are found among the remaining three practice types in provision of prenatal care ( $P = .001$ ), Pap smears ( $P = .001$ ), immunizations ( $P = .01$ ), and psychological care ( $P = .05$ ). While WICs were less likely to provide any of these services, 65% or more of WICs reported that each of these services was routinely available in their clinics.

### Coordination of care

One indication that a practice coordinates care for its patients is an information system that facilitates patient follow up and information sharing among providers (Table 3). After-hours clinics would not be expected to have patient reminder systems or shared care of office patients, as they do not provide ongoing care. There were no significant differences among the other three practice types in use of reminder systems for Pap smears or immunizations; less than half have such systems. More than 80% of WICs, MPs, and GFPs reported shared care of office patients. A large majority of each of the four practice types used a single shared patient record (ranging from 70% in AHCs to 96% in WICs).

### Supporting and monitoring quality of care

Although the data from our organizational survey do not allow us to comment on appropriateness or effectiveness of care, we are able to describe organizational structures and processes that generally are associated with good patient care (Table 3). These include physician certification, use of practice guidelines, and monitoring clinical practice through chart audits or regular meetings. There were no significant differences in physician certification across the practice types.

Between 60% and 80% of physicians in the four practice types were certificated by the College of Family Physicians of Canada. About half of GFPs and a smaller proportion of the other practice types used practice guidelines or met to review clinical problems. Few practices performed chart audits. There were no significant differences among the four practice types on use of the quality improvement mechanisms we measured.

## DISCUSSION

Walk-in services are not provided by a single type of practice. The three main providers of walk-in services, WICs, MPs, and AHCs, share some characteristics (eg, length of time in operation, extended hours, absence of on-call arrangements); however, there are also significant differences (proportion of patients seen by appointment and provision of preventive services). Thus, a continuum of practice types appears to exist with AHCs representing the more stereotypic view of

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**Table 3. Comprehensiveness, coordination, and mechanisms for supporting and monitoring quality of care by primary care practice type**

PRACTICE CHARACTERISTICS	WALK-IN CLINICS (N = 29)	MIXED PRACTICES (N = 27)	AFTER-HOURS CLINICS (N = 12)	GROUP FAMILY PRACTICES (N = 146)	P VALUE
<b>COMPREHENSIVENESS (SERVICES ROUTINELY AVAILABLE)</b>					
Number providing prenatal care (%)	19 (65.5)	21 (77.8)	1 (8.3)	133 (91.1)	.001
Number doing Pap smears (%)	24 (82.8)	27 (100.0)	2 (16.7)	143 (97.9)	.001
Number providing immunizations (%)	26 (89.7)	27 (100.0)	4 (33.3)	144 (98.6)	.001
Number managing psychological problems (%)	21 (72.4)	22 (81.5)	4 (33.3)	130 (89.0)	.001
<b>COORDINATION OF CARE</b>					
Number of practices with reminder systems for Pap smears (%)	13 (44.8)	9 (33.3)	NA	61 (41.8)	NS
Number of practices with reminder systems for routine immunizations (%)	9 (31.0)	5 (18.5)	NA	34 (23.3)	NS
Number of practices that share care of office patients (%)	24 (82.8)	24 (88.9)	NA	130 (89.0)	NS
Number of practices with a single shared record for each patient (%)	25 (86.2)	25 (92.6)	7 (70.0)*	126 (89.4)†	NS
<b>MECHANISMS FOR SUPPORTING AND MONITORING QUALITY OF CARE</b>					
Mean percentage of physicians who are certificants of the College of Family Physicians of Canada (95% CI)	60.0 (45.3-74.7)	72.8 (59.3-86.2)	80.0 (61.0-99.0)	70.6 (64.7-76.5)	NS
Number of practices using practice guidelines (%)	10 (34.5)	9 (33.3)	3 (25.0)	74 (50.7)	NS
Number of practices performing chart audits (%)	7 (24.1)	6 (22.2)	3 (25.0)	17 (11.6)	NS
Number of practices that meet to review clinical problems (%)	11 (37.9)	11 (40.7)	4 (33.3)	77 (52.7)	NS

NA—not applicable, NS—not significant.

\*Two cases were missing (N = 10).

†Five cases were missing (N = 141).

walk-in services at one end of the continuum (characterized by 100% of patients seen without an appointment, no regular patients, and no preventive services) and GFPs at the other end (characterized by regular patients seen by appointment and provision of preventive services). There appear to be very few pure WICs among our respondents. Walk-in clinics shared many of the characteristics of MPs and were more like GFPs than we expected; more than half of their visits were made by regular patients, and a substantial proportion of WICs provided preventive services.

Several studies and reports have identified after-hours access to health care as a serious problem and have recommended 24-hour-a-day, 7-day-a-week coverage as a key component of primary care reform, including both extended hours and some form of on-call arrangement after office hours.<sup>12-16,19</sup> This type of primary care coverage is not widely available in Ontario. Group family practices are seldom open

evenings or weekends. While most reported some form of on-call arrangement when the office is closed, more than 40% do not have such arrangements. Walk-in clinics and MPs have extended office hours, but are less likely than GFPs to have coverage for their regular patients when the office is closed.

Among primary care providers, there is general agreement on the need to develop and implement clinical information systems, practice guidelines, and accountability and performance measures.<sup>15,17</sup> Information systems are required both to facilitate clinical practice (eg, patient and physician reminder systems) and to provide a basis for performance evaluation.<sup>34</sup> A large proportion of all four practice types did not have organizational or clinical processes to promote coordination and quality of care. Most WICs, MPs, and GFPs do not have reminder systems in place for routine immunization and Pap smears, nor do they use practice guidelines. Just over half of

GFPs conduct chart audits or meet to monitor patient care; the proportion is lower, but not significantly so, for the other three practice types.

This study has several limitations. Because respondents identified their practice type themselves, there could be some overlap between categories. This might be a particular issue for combined family practices and WICs, some of which might identify themselves as WICs, some as GFPs, and some as MPs. Although WICs and MPs reported that most of their visits were made by regular patients, we do not know whether these patients were the regular patients of individual physicians within the practice. Studies suggest that it is preferable for patients to receive care from a single practice rather than many practices and that ongoing care from the same physician provides additional benefit.<sup>18</sup> We were unable to determine whether the “irregular” patients receiving care in WICs, MPs, and AHCs had family physicians elsewhere whom they see regularly.

The response rate of 57% is comparable to other physician surveys.<sup>35,36</sup> A study of response rates to mailed surveys published in US medical journals found that physician surveys had a mean response rate of 54% while nonphysician surveys had a mean response rate of 68%.<sup>37</sup> Because no consistent information is available on practice type, we could not directly determine how representative our respondents were of the population of primary care practices from which our sample was selected. However, the GFPs in our sample were similar to those in a 1989 survey of group practices in terms of percentage with shared patient records, on-call arrangements, reminders for Pap smears and immunizations, and use of peer review.<sup>38</sup> Walk-in clinics in our study were similar to a 1988 Ontario survey of 34 WICs in terms of percentage of physician ownership and number of extended hours.<sup>3</sup>

Finally, because the data are based on self-reports, a potential for bias most likely would appear in the form of overly positive representations of organizational structures and care processes, but this bias would not be expected to vary among practice types.

## CONCLUSION

This study provides new information on the types of primary care practices providing walk-in services in Ontario and how they compare with more traditional GFPs. Three types of practices, WICs, MPs, and AHCs, provided walk-in services to Ontario patients. While the independent AHCs appeared to fit the WIC

### Editor's key points

- Walk-in services are provided by three types of primary care practice models: walk-in or urgent-care clinics, after-hours clinics, and mixed practices.
- Compared with group family practices, these clinics provided longer hours of service, but group family practices had more on-call arrangements.
- Walk-in clinics and after-hours clinics were less likely to provide preventive services and psychological counseling than group family practices and mixed practices.
- In contrast to the stereotype, walk-in clinics and mixed practices reported that more than 60% of their visits were with “regular” patients.

### Points de repère du rédacteur

- Des services sans rendez-vous sont dispensés par trois types de modèles de pratique de première ligne: les cliniques sans rendez-vous ou de soins urgents, les cliniques après les heures et les pratiques mixtes.
- En comparaison des pratiques familiales de groupe, ces cliniques offrent de plus longues heures de service, mais les pratiques familiales de groupe avaient plus d'arrangements de service sur appel.
- Les cliniques sans rendez-vous et celles après les heures étaient moins enclines à dispenser des soins de prévention et du counseling psychologique que les pratiques familiales de groupe et les pratiques mixtes.
- Contrairement au stéréotype qu'on en fait, les cliniques sans rendez-vous et les pratiques mixtes signalaient que 60% de leurs consultations se faisaient auprès de patients «réguliers».

stereotype, this is not as apparent for WICs and MPs. Contrary to popular belief, WICs and MPs provide a substantial amount of ongoing care and preventive services. ❖

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#### Contributors

**Dr Barnsley** led conception, design, and data collection, analysis, and interpretation; prepared the initial draft of the article; revised the draft based on the co-authors' critical reviews; and provided final approval of the version to be published. **Dr Williams, Dr Kaczorowski, Dr Vayda, and Ms Atkin** contributed to conception, design, and data collection, analysis, and interpretation; reviewed drafts and provided critique and revisions; and provided final approval of the version to be published. **Dr Vingilis and Dr Campbell** contributed to conception, design, and analysis and interpretation of data; reviewed drafts and provided critique and revisions; and provided final approval of the version to be published.

#### Competing interests

None declared

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