

# Making our offices universally accessible: guidelines for physicians

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## Abstract

**Objective:** To develop recommendations for office-based physicians who wish to make their offices accessible to all patients.

**Options:** Include taking steps to make offices more accessible, or not; offices may be accessible to varying degrees.

**Outcomes:** Outcomes of accessibility involve patient-care, economic, ethical and legal issues. Stakeholders in these outcomes include patients, physicians, government and society.

**Evidence:** Data were obtained from a series of searches of MEDLINE, CINAHL and Healthstar (previously Health) databases for articles on disability and family medicine, primary (health) care and family practice, and on access and offices, and health services accessibility, and from a telephone survey of 50 stakeholders.

**Values:** A high value was placed on services to persons with disabilities and on stakeholder input. Universal accessibility was valued as an overall goal; improved accessibility was also highly valued.

**Benefits, harms and costs:** Benefits to patients include improved access to care as guaranteed by the Canada Health Act and in keeping with provincial Human Rights Codes. Benefits to physicians include contact with a broader patient population and freedom from fear of litigation. Costs of improved accessibility vary depending on individual circumstances and on whether an office is being built or renovated; some improvement costs are minimal.

**Recommendations:** All physicians should take measures to improve practice accessibility. Improved access should be considered in each of the following areas: transportation and entrance to the facility, entrance to the office, waiting rooms, rest rooms, examination rooms, general building features and other features.

**Validation:** No similar guidelines exist. To assess the content validity of these guidelines, the authors had a draft document reviewed by 18 stakeholders. All specific recommendations met the minimum criterion of adherence to current legislation, including national and provincial building codes. The specific recommendations are endorsed by the Canadian Paraplegic Association (national and Ontario offices), the DisAbleD Women's Network (Ontario) and the Centre for Independent Living (Toronto).

**Sponsors:** Development of these guidelines was supported in part by the Department of Family and Community Medicine, Toronto Hospital, Toronto, Ont.

## Résumé

**Objectif :** Élaborer des recommandations à l'intention des médecins qui veulent rendre leurs bureaux accessibles pour tous les patients.

**Options :** Notamment, mesures à prendre ou non pour rendre les bureaux plus accessibles; les bureaux peuvent être accessibles à divers degrés.

**Résultats :** Les résultats de l'accessibilité portent sur les soins fournis aux patients, ainsi que sur des questions d'ordre économique, éthique et juridique. Les patients, les médecins, le gouvernement et la société sont au nombre des intervenants intéressés à ces résultats.

**Preuves :** On a réuni des données à la suite d'une série de recherches effectuées dans MEDLINE, CINAHL et Healthstar (auparavant Health) pour y trouver des articles sur l'incapacité, la pratique principale ou familiale, l'accès et les bu-



## Evidence

## Études

Dr. Jones is a Staff Physician at the Department of Family and Community Medicine, Toronto Hospital, a Lecturer in the Department of Family and Community Medicine, University of Toronto, and cochair of a group of physicians and persons with disabilities who are working together to improve primary health care for persons with disabilities. Dr. Tamari is a community-based family physician working in the Toronto area and a member of the same group.

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reaux, et l'accessibilité des services de santé. On a aussi procédé à un sondage téléphonique auprès de 50 intéressés.

**Valeurs :** On a accordé une grande valeur aux services fournis aux personnes handicapées et à la contribution des intéressés. On a accordé de la valeur à l'accessibilité universelle comme but global; on a aussi accordé une grande valeur à une accessibilité améliorée.

**Avantages, préjudices et coûts :** Les avantages pour les patients comprennent un meilleur accès aux soins garantis par la Loi canadienne sur la santé et conformément aux codes provinciaux des droits de la personne. Pour les médecins, les avantages comprennent la possibilité de rejoindre une plus vaste population de patients et de ne plus avoir à craindre les litiges. Les coûts d'une accessibilité améliorée varient selon les circonstances particulières et selon qu'un bureau est en construction ou en rénovation; certaines améliorations ne coûtent presque rien.

**Recommandations :** Tous les médecins devraient prendre des mesures pour améliorer l'accessibilité à leur cabinet. Il faudrait envisager d'améliorer l'accès à l'égard de chacun des aspects suivants : transport et entrée dans l'établissement, entrée au cabinet, salles d'attente, salles de toilettes, salles d'examen, caractéristiques générales de l'édifice et autres caractéristiques.

**Validation :** Il n'existe pas de lignes directrices semblables. Pour évaluer la validité du contenu des présentes lignes directrices, les auteurs ont soumis pour étude un document préliminaire à 18 intéressés. Toutes les recommandations particulières satisfaisaient au critère minimal de conformité à la législation en vigueur, y compris aux codes fédéral et provinciaux du bâtiment. Les recommandations précises ont l'aval de l'Association canadienne des paraplégiques (bureau national et bureau de l'Ontario), du Réseau d'action des femmes handicapées (Ontario) et du Centre for Independent Living (Toronto).

**Commanditaires :** L'élaboration de ces lignes directrices a été appuyée en partie par le Département de médecine familiale et communautaire du Toronto Hospital, Toronto (Ont.).

In 1991, according to Statistics Canada, 4.2 million citizens, or 15.5% of the Canadian population, reported some level of functional disability.<sup>1</sup> It has been estimated that more than 500 million people around the world are disabled,<sup>2</sup> and this number is increasing, for a variety of reasons.<sup>1-6</sup>

Persons with disabilities are among the most underserved in the world, both in terms of medical care and other services.<sup>7</sup> However, disability issues are receiving increasing attention worldwide, and various countries are enacting legislation to ensure accessibility (for example, the Americans with Disabilities Act in the United States<sup>8</sup>). In Canada, persons with disabilities are demanding that their rights to access services (including health care) under the provincial Human Rights Codes and the Canada Health Act be upheld; they are successfully resorting to litigation to ensure that they are.<sup>9,10</sup>

General practitioners are thought to have more contact with persons with disabilities than any other profession or agency.<sup>11</sup> Nevertheless, many physicians' offices are inaccessible,<sup>11-13</sup> and there is little information readily available to Canadian physicians who wish to improve the accessibility of their offices. Persons with disabilities who require

medical care are therefore deterred from seeking it by the difficulties they encounter when visiting a physician.

Patients presenting to a physician's office may have a wide range of disabilities. These include mobility problems (caused by arthritis, paraplegia or cardiac or respiratory disease) as well as disabilities due to sensory impairment (affecting hearing or vision) or lack of strength, co-ordination or comprehension. Persons with disabilities come from all ethnic, cultural, religious and socioeconomic backgrounds, and may be heterosexual, homosexual or bisexual. Thus, persons with disabilities are a heterogeneous group in terms of their personal, medical and disability-related characteristics.

The purpose of this project was to develop specific recommendations to help physicians make their offices accessible to all patients and to provide some practical suggestions concerning how to do this. A primary care perspective guided this work; however, it was recognized that the guidelines would also be applicable to physicians in other specialties. Although the target population is the 15.5% of Canadians who are disabled, some commentators suggest that closer to 30% of the population (for example, well elderly people and caregivers with children)



would benefit from the improved accessibility of physicians' offices.<sup>2</sup>

## Basic concepts

In this article, the term "disability" is used in its broadest context and is based on both older and more recent definitions.<sup>14-19</sup> A "person with a disability" has a reduced ability to perform activities of daily living, to move about or to interact with his or her environment.<sup>16,17</sup> The influence of environmental factors, such as accessibility, accommodation, resource availability, social support and equality, may result in a "handicap."<sup>19</sup> "Universal accessibility" is a philosophy that describes full access for all people and is realized through "barrier-free design,"<sup>20-23</sup> a design approach that eliminates barriers to access for all potential users. For a more detailed explanation of these concepts, see Appendix 1.

## Options

"Universal accessibility" means making an area or service accessible to everyone. This concept is most useful when considering moving an office, building a new office or making major renovations. However, for physicians who are considering minor or moderate renovations to improve accessibility but who are unable to achieve universal accessibility, it does not provide any guidance. Accessibility may be improved in a number of ways, including: (1) performing a thorough evaluation of the barriers to access and developing a phased implementation plan, (2) making necessary adaptations or accommodations to suit specific users, either in advance or on demand, or (3) relocating to a fully accessible setting.<sup>20</sup>

We have produced guidelines for specific accessibility features of a medical office. They were written in the spirit of universal accessibility, but we recognize that this is not feasible for many physicians. Therefore, physicians wishing to make changes to their current office or choosing to relocate can use the recommendations to provide greater accessibility. In addition, we have provided practical advice to assist physicians in developing an individualized approach to improved accessibility. Short articles have been written on various aspects of this topic (some examples are cited in the reference list<sup>3,10,11,13,15,24-29</sup>), and general building accessibility recommendations and requirements exist (examples in reference list<sup>12,30-36</sup>). However, to our knowledge, there are no similar broad yet specific guidelines for physicians' offices.

## Values

Development of these guidelines was guided by a belief

in the importance of this area from patient-care, ethical, societal and legal perspectives, and by input from stakeholder groups.

This article provides guidelines for making physicians' offices accessible for adult patients with a wide variety of (mainly physical) disabilities. We also believe that accessibility issues concerning hospitals, children, other special patient groups, employees in physicians' offices and disabled physicians are important. However, these issues are not specifically addressed in this article. Similarly, physicians' skills, knowledge and attitudes concerning disability ("attitudinal" accessibility) are very important,<sup>13,20,22,37-42</sup> however, the accessibility issues addressed in these guidelines are mainly geographic, physical and structural.

## Methods

### Literature search

We made several searches of the literature. The purpose of the first search was to obtain articles that would provide an overview of disability and primary care or family practice. MEDLINE was searched for articles published from 1976 to 1993, and CINAHL was searched for articles published from 1983 to 1993. The text searches that yielded results involved the text words "disabilit\*" crossed with "family medicine," "family practice" and "primary care"; subject searches that yielded results involved MeSH headings "disabled" crossed with "family practice" and "primary health care."

A focused literature search was then performed to obtain specific articles on accessibility and physicians' offices. MEDLINE searches of articles published from 1984 to 1993 were conducted with the use of various combinations of the text words "access\*" and "disab\*" and "office" along with the MeSH heading "health services accessibility." An additional search of the MEDLINE and Health databases was conducted for articles published from 1976 to 1993 with the use of the terms "architecture" and "access." The MEDLINE searches were updated in December 1996, and the CINAHL and Healthstar (previously known as Health) database searches were updated in January 1997 to include articles published up to those dates.

Article bibliographies were reviewed, and further relevant articles obtained. Additional documents were received from various government organizations and organizations concerned with disability, via word of mouth and through information obtained from the telephone survey. Although approximately 130 articles were examined, not all were relevant to these guidelines. The search methods were deliberately broad because physical and structural office features constituted only one part of a larger project.

## Telephone survey

We also conducted an informal telephone survey of 50 individuals and organizations. Initial contacts were chosen from an organization listing by the Ontario March of Dimes, from organizations known to the authors and from the yellow pages. All contacts were asked about other potential sources of relevant information.

Survey participants were made aware of the purpose of the project and were asked to provide information on existing guidelines or recommendations for making physicians' offices accessible for persons with disabilities.

Calls were limited to Canada, and most were within Ontario. Several medical organizations were contacted (including the College of Family Physicians of Canada, the Royal College of Physicians and Surgeons of Canada, the CMA and the Ontario College of Physicians and Surgeons) as well as various provincial and federal government departments, groups concerned with disability, architects involved in accessibility work, consulting firms that dealt with accessibility, individual physicians and persons with disabilities.

## Synthesis of information

Categories (such as "examination rooms" and "rest rooms") for the guidelines were based on those described in the literature reviewed. The guidelines begin with potential barriers to entering a physician's office and proceed through other stages of a typical office visit.

Specific recommendations were collated from all information sources and were assigned to the appropriate category. The specific details of the information in each category were then reviewed. When there were conflicting recommendations from different sources, the more conservative figures were used (e.g., if there were 2 measurements for minimum hallway width, we would have used the greater one).

The final guidelines therefore reflect a review, synthesis and organization of the work of many different individuals and organizations. In particular, our work benefited from that of several organizations, including Associated Planning Consultants, the Barrier-Free Design Centre, the Eastern Paralyzed Veterans Association and the Canadian Standards Association. Formal recommendations on methods for guidelines were used.<sup>43-46</sup>

## Validation

To ensure that our specific recommendations did not conflict with the current building codes, they were reviewed by experts working on both the national and provincial building codes in the spring and summer of 1996.

Since our intention was to develop guidelines that went beyond the minimum building-code requirements, content validity<sup>47</sup> was also assessed by asking 23 people to review an early draft. The reviewers were chosen because of their membership in the following stakeholder groups: persons with disabilities, physicians, persons working in the area of disability, and architects, consultants or government employees with knowledge in this area. Reviewers were asked to provide feedback by answering a number of questions on a form and by making additional comments in space provided for this purpose.

## Results

### Validation

The response rate was 74% (17 of the 23 people asked to review an early draft returned survey forms; an 18th person provided comments only). The draft was well received: 13 of 15 respondents (87%) (and 5 of 5 physicians) who answered a question concerning the usefulness of the guidelines believed that the document or its recommendations would be useful to physicians wishing to make their offices accessible. One of the respondents who answered negatively believed that the information needed to be "tailored for practical use," and the second believed that the accessibility of physicians' offices should be determined "on a case-by-case basis."

The respondents were asked to rate the recommendations on a scale from 0 (inadequate) to 10 (excellent). The recommendations received a mean rating of 8.5. A question concerning whether the recommendations represented the maximum or minimum accessibility required went largely unanswered. However, of those who responded to the question, more believed that the recommendations represented a maximum (29.6%) than somewhere in between (17.6%) or a minimum (17.6%). Some changes and additions were made to the specific guidelines and to the overall document on the basis of the reviewers' comments.

## Recommendations

Having an overall approach to improving office accessibility is as important as knowing the specific features to implement. We have drawn upon our experience to provide some practical, general suggestions (Table 1).

Sources are provided for each recommendation. For recommendations for which there was no published reference, we have noted that the recommendation is based on expert opinion, that is, comments and suggestions from 1 or more stakeholders and often from a number of sources.



## Getting to and entering a medical facility

- Offices should ideally be located as close as possible to public transportation routes, including subway stops and bus shelters. They should also be close to accessible laboratory facilities, which should include technicians with relevant training and experience in working with persons with disabilities (expert opinion).
- There should be curb cuts in the blocks around the building for ease of use by persons using wheelchairs or scooters.<sup>33,35</sup>
- Adequate exterior passenger loading zones should be provided directly in front of the building entrance. An access aisle not less than 1500 mm wide and 6000 mm long, adjacent and parallel to the vehicle pull-up space, should also be provided.<sup>32,36</sup> Canopies and marquees above the vehicle's path of travel should provide a height clearance of at least 2750 mm.<sup>25,31,32,36</sup>
- Designated parking spaces should be reserved for persons with disabilities;<sup>29</sup> these should be located close to the building entrance and properly marked.<sup>31,48</sup> Spaces should be 3900 mm wide,<sup>31</sup> allowing adequate room for transfer from wheelchair to vehicle. At least 1 such space should be provided for every 20 parking spaces and 1 for any remaining parking spaces less than 20.<sup>35</sup>
- Buildings should be clearly marked, in nonglare, contrasting colours with sufficiently large, legible signage, so that reading the signs does not pose a problem for persons with visual disabilities;<sup>3,28,35</sup> the use of symbols as well as written labels should be considered.<sup>35</sup>

- Signage should be immediately visible upon entering the building and should indicate the locations of elevators, rest rooms, offices and other services.<sup>31</sup>
- Barrier-free facilities (e.g., accessible entrances, rest rooms, elevators and parking spaces) should be identified by a sign with the international symbol of accessibility for persons with disabilities.<sup>32,36</sup>
- Wherever the path of travel involves a change of level to reach a destination inside or outside the building, ramps, elevators or other facilities should be provided to enable a person to reach the other level without having to use stairs or escalators (expert opinion); the grade should be 1:20 (ratio of rise to run)<sup>30,33,35,49,50</sup> and should not exceed 1:12 (for short ramps).<sup>26,30,32-36,49-51</sup> Ramps and stairs should not intersect.
- Bilateral handrails 865 to 965 mm high<sup>26,36,52</sup> should extend at least 300 mm beyond the top and the bottom of a ramp;<sup>36</sup> the ramp width should be sufficient to accommodate all wheelchairs (at least 870 mm between handrails).<sup>36</sup>
- Building entrances should have electric, automatic hinged or sliding doors<sup>35</sup> unless existing wide revolving doors are designed to allow the passage of wheelchairs (expert opinion). Doors should allow easy clearance for wheelchairs (at least 800 mm) when opened 90°. <sup>31,36</sup> Doors should close in no less than 3 seconds.<sup>32,36</sup>

## Entering offices and waiting rooms

- Flooring should be smooth and slip-resistant,<sup>33,35,36</sup>

**Table 1: Practical suggestions for improving office accessibility\***

Suggestion	Comments
Plan ahead	Consider accessibility when setting up a practice, renovating or moving to a new office
Know about and contact local organizations concerned with disability	These organizations may provide useful information for patients or caregivers and may help build your patient population. National organizations with provincial chapters include the Canadian Paraplegic Association, the Canadian National Institute for the Blind and Easter Seals/March of Dimes National Council. Also, consider contacting your local Centre for Independent Living
Know your patient population	For example, if your office is located near a centre of the Canadian National Institute for the Blind, accessibility for persons with visual disabilities may be a priority
Consult an accountant or medical management consultant or both	Know how much money is available to implement the features you want
Contact a knowledgeable architect or consultant in barrier-free design or both	These professionals will ensure that you are informed of relevant current and pending legislation, help implement barrier-free design features, aid in designing structural changes to the building and direct you to other resources
Make use of specific accessibility guidelines	See the guidelines provided in this article

\*Suggestions are based on expert opinion and on feedback on the recommendations contained in this article.

consisting of tile or carpet with a pile less than 13 mm high.<sup>33</sup>

- Corridors should be well lit, unobstructed,<sup>32</sup> and at least 1500 mm wide.<sup>26,36</sup>
- Elevators should be equipped with both audible and visible hallway signals for available cars.<sup>33-35</sup> Labels inside and outside cars should be raised, indented or in Braille.<sup>33,35</sup> Control buttons should be operable with 1 hand, located less than 1220 mm above the floor<sup>35,49</sup> and arranged horizontally. Elevator cars should be wide enough to accommodate scooters and all wheelchairs, including electric wheelchairs (which are usually wider). Mirrored back walls may assist persons using wheelchairs to back out of elevators (expert opinion).
- Waiting rooms should accommodate a variety of seating arrangements and individual variations in size, shape and height to accommodate the various needs of persons wearing braces or having back problems; some chairs should be equipped with armrests.<sup>53</sup> Furthermore, at least 2 spaces should be designated for persons using wheelchairs.<sup>31,32,36</sup>
- If waiting-room space allows, a small, high table (the level of a reception counter, as described later) with knee clearance, accessible to persons using wheelchairs, may provide a surface for reading, placing cups, etc. (expert opinion).
- Reception counters should accommodate persons using wheelchairs and thus be no more than 860 mm high<sup>35</sup> and no less than 765 mm wide,<sup>35</sup> with suitable knee space below (685 mm high and 485 mm deep).<sup>36</sup> If reception areas are separate from waiting rooms, chairs should be provided for waiting patients in the reception area (expert opinion).
- There should be a visual (e.g., hand-held chalkboard) as well as audible method for calling patients in for consultation (expert opinion); secretarial staff should be aware of patients' needs.<sup>54</sup>
- Staff awareness of individual patients' needs for accommodation may be facilitated by appropriate chart-coding techniques (expert opinion).
- Horizontal grab bars should be placed on the side wall of the stall closest to the toilet.<sup>36</sup> In the absence of a tank, an additional grab bar should be placed on the wall behind the toilet.<sup>36</sup> There should be space (wider than 1050 mm) between the side of the toilet and the far wall to allow side transfers (to a wheelchair or scooter). Grab bars should be 840 to 920 mm above the floor and 30 to 40 mm in diameter;<sup>33</sup> they should have a clearance of 35 to 45 mm from the wall.<sup>36</sup>
- Grab bars on both sides of the toilet are useful for ambulatory persons with disabilities but may impede transfer for persons using wheelchairs;<sup>55</sup> it should be possible to swing such grab bars in and out of place easily so that they can be used only when required.<sup>55</sup>
- Toilet seats should be 400 to 460 mm above the floor.<sup>36</sup>
- There should be a coat hook within the stall, which should be no more than 1400 mm above the floor, so that it can be reached by persons using wheelchairs.<sup>31,32,36</sup>
- At least 1 sink should be accessible to persons using wheelchairs. It should allow sufficient clearance (at least 735 mm) beneath the counter<sup>26,31,36</sup> and have faucets and a basin at an accessible height. The sink should be no more than 865 mm high<sup>31,36</sup> and should be equipped with blade or lever handles.<sup>31-33,35,36</sup> Pipes to and from the sink should run to the back of the sink and be insulated so that they do not come into contact with the legs of persons using wheelchairs.<sup>26,31-33</sup>
- Soap or towel dispensers should be no more than 1200 mm above the floor in order to be accessible to persons using wheelchairs.<sup>32,36</sup>
- A mirror should be provided; its bottom edge should be no more than 965 mm above the floor.<sup>33</sup>
- An emergency call bell should be available (expert opinion) and should be connected to the nurse's or physician's office. The bell should be mounted no more than 1375 mm above the floor.<sup>30</sup>

### Rest rooms

- Rest room doors should be automatic (expert opinion).
- If the rest room has stalls, at least 1 should be wheelchair accessible;<sup>32</sup> single-person rest rooms should be accessible.
- Accessible stalls should have wide doors (at least 800 mm wide when open 90°) that open outward;<sup>32,33</sup> doors should be equipped with graspable latch locking mechanisms.<sup>31,36</sup> A turning space of 1500 mm in diameter should be provided inside the stall.<sup>31-34,36</sup>

### Examination rooms

- Walls, door jambs, doors and baseboards should be distinctly different colours or shades to facilitate visual orientation and balance.<sup>3,22,28,35,48,53</sup>
- There should be adequate turning room (1500 mm in diameter).<sup>31-34,36</sup>
- Examination tables should be wide and adjustable in height, obviating the need to climb on and off the table and allowing ease of transfer and examination.<sup>42,56</sup>
- A horizontal grab bar appropriately placed on the wall above the examination table would assist patients to change position and transfer to a wheelchair, scooter or other assistive device (expert opinion).
- The transfer of a person with a disability to the examination table varies with each person; the patient



should be asked how he or she is accustomed to accomplishing such transfers. The physician should never assume that similar disabilities translate into similar transfer techniques.<sup>3,42,49,54,56</sup>

- Portable examination equipment (such as ophthalmoscopes, otoscopes and sphygmomanometers) are a useful addition (expert opinion).

### **Miscellaneous building features**

- All doors should be equipped with lever handles or be designed in a way that does not necessitate tight grasping and twisting of the wrist to open them.<sup>36</sup>
- Drinking fountains should be a maximum of 915 mm high;<sup>36</sup> they should protrude from the wall with sufficient knee space underneath for persons using wheelchairs.<sup>35</sup>
- Lighting levels should be at least 50 lx (5 foot candles).<sup>35</sup>
- A stripe at eye level throughout the office, and especially in small rooms, would be helpful for ambulatory persons with visual disabilities (expert opinion).
- Counters provided for public telephones should be easily accessible (see recommendations for reception counters), and at least 1 wall-mounted telephone should have a number pad, receiver and coin slot no more than 1375 mm above the floor<sup>31</sup> and a telephone cord more than 735 mm long;<sup>33</sup> at least 1 telephone should have a volume control.<sup>35</sup> An accessible telephone should be placed near the building entrance and exit for use by people awaiting transportation (expert opinion).
- Escape routes for emergency departures should have both visible and tactile wall markings; alarms should be visible as well as audible.<sup>35</sup>
- Placement of handrails along hallways should be considered (expert opinion); chairs should be strategically placed en route (expert opinion), ensuring that there is adequate room for someone in a wheelchair to pass by unobstructed.

### **Other miscellaneous issues**

- Attendant services should be made available (expert opinion). Office staff with knowledge of various aspects of care of persons with disabilities (such as transfers, dressing and undressing) should be available when needed. Local organizations concerned with disability can be contacted to educate staff or provide recommendations.
- Information specifically relevant to persons with disabilities<sup>57-60</sup> as well as general patient information should be made available in a variety of formats (e.g.,

audiotape, Braille and large print) and be written in plain language.<sup>30,49</sup>

- Alternative methods of communication with persons who are deaf, hearing impaired or nonverbal should be considered; these include the use of sign-language interpreters, computer terminals and Teletype (TTY) technology for patient bookings and inquiries.<sup>61</sup>
- Accommodation should be made in scheduling persons with disabilities to take into account extra time needed (because of variable arrival times of public transportation for persons with disabilities or transfers and clothing changes, for example).<sup>61</sup> Appointments must be started and finished on time, because people travelling by public transportation (for persons with disabilities) **must** leave the office on time. These services are often the only means of transportation for persons with disabilities, and the drivers will not wait.<sup>30</sup>
- Service dogs (including guide dogs) must be permitted on the premises.<sup>48</sup>

## **Discussion**

### ***Benefits, harms and costs of improved accessibility***

We recommend that all physicians take steps to improve the accessibility of their offices and adopt achievement of a universally accessible office as an overall goal. This recommendation is based on an examination of the benefits, harms and costs of improved accessibility for persons with disabilities, society in general and physicians. A full discussion of this topic is not possible here, but a brief review follows.

With respect to persons with disabilities, we found no studies that examined the relation between accessibility and health outcomes. It is not clear that improved accessibility improves health outcomes; however, it was evident from the telephone survey and the feedback on the guidelines that accessibility is a concern of persons with disabilities and that improved accessibility would improve patient satisfaction. It would also fulfil patients' rights under the provincial Human Rights Codes and the Canada Health Act, which states that every person in Canada has a right to access health care. All persons with disabilities whom we contacted believed that the benefits of improved accessibility would far outweigh the financial costs associated with physician visits, such as transportation costs.

To our knowledge, no economic analysis of the potential economic costs to society has been conducted. If more people used the health care system as a result of increased accessibility, this might result in an increased economic burden. By contrast, if improved accessibility resulted in

decreased morbidity or mortality or improved quality of life for persons with disabilities, this cost might be offset.

The costs to individual physicians of providing or not providing an accessible office are important to consider. In the event of litigation, physicians who do not own their offices may not be liable for the building's construction, but they may be liable for other areas within the office, such as waiting rooms, reception areas and examining rooms, as well as for layout, furniture and equipment. The costs of improving office accessibility vary depending on individual circumstances and location, and on whether the physician is relocating, renovating or building. Relocation to an accessible office may be more expensive than remaining in an inaccessible office in an older building. Renovation costs can vary from modest to significant, and are specific to site and location. Some features are clearly more costly to implement than others; however, many features of improved accessibility cost nothing but foresight and planning and can easily be incorporated into renovation designs (e.g., use of contrasting colours when the office is repainted). Some have argued that making new buildings accessible involves no extra cost but requires only that the architect design the building from a barrier-free perspective.<sup>20</sup> Some US data indicate that the initial costs for barrier-free design are no more than 0.5% above normal capital budgets (Pamela Cluff, FRAIC, FRIBA, OAA, Toronto: personal communication, 1993).

## Limitations

### Relative importance of specific recommendations

This article is a first attempt at providing broad accessibility guidelines for physicians' offices. There may be other recommendations that would enhance the list provided, and the application of these recommendations may be simplified by ranking them in terms of importance. One reason that ranking of accessibility features may not have been addressed in the literature is that barrier-free design is meant to result in universal — not partial — accessibility. Thus, all features are important and necessary. In addition, the nature and variability of disabilities means that an important feature for one person is unimportant for another. If budgetary constraints necessitate choosing between widening an entrance and renovating a rest room, the former would allow more persons using electric wheelchairs to gain access to the office, but, for some of these persons, this access would be unacceptable without rest room access. By contrast, some persons with arthritis may benefit from rest room renovations but do not need a wider entrance. The relative importance of features varies according to the structural details of the office in question and the patient population it serves. Therefore, using

some of the practical suggestions may be the best way to deal with this challenging issue.

## Costs

Another limitation of these guidelines is the lack of specific information on the costs of renovations. This is an area worthy of pursuit in future research. Considering accessibility issues when building or relocating may be the most economical approach. As noted, although some renovations are expensive, others (e.g., lever door handles) clearly are not.

## Validation process

We could not validate the specific details of each of the recommendations or critically appraise data such as those provided in the building codes. Although some recommendations are based only on expert opinion, many are based on research methods involving kinetic and ergonomic data from test subjects with disabilities and are subject to critical appraisal within their own fields (some examples are given in the reference list<sup>25,62-64</sup>). The National Building Code, the provincial building codes and the Canadian Standards Association have advisory committees that include disabled consumers. These members have significant input, making their recommendations based on both research and expert stakeholder input. We have attempted to do the same by synthesizing information from a wide variety of sources. Future work on the accessibility of physicians' offices should involve evaluation of the recommendations in a physician-office setting.

Another limitation involves the assessment of content validity by the reviewers, who were a convenience sample of stakeholders and were all working or living in Ontario (and mainly in the Toronto area). This choice of reviewers may limit the generalizability of the results of the review; however, this is unlikely, since disability is not geographically defined.

## Limitations of time and geography

These recommendations adhere to, and in some cases go beyond, current minimal Canadian standards. However, building regulations are the responsibility of provincial and territorial governments. Although most jurisdictions adopt regulations based on national model codes (such as the National Building Code), they often make changes to these. Therefore, some recommendations may exceed the requirements of the building code in some provinces but not in others. Furthermore, regulations change at different times in different regions. It is therefore imperative that anyone using these recommendations





ensure their compliance with local standards at the time they are making changes.

## Conclusions

This is the first set of guidelines available for use by physicians who wish to make their office-based practices more accessible. These guidelines should be tested and refined in their intended setting, and some of the related issues not specifically addressed in this paper, such as issues pertaining to various specialty practices and to attitudinal barriers, should be addressed.

We believe that there are strong ethical and legal reasons to make our offices more accessible. Although economic barriers may prohibit physicians from making radical, immediate changes, and some changes may be very expensive, others cost little or nothing. There is evidence that future legislation may mandate full office accessibility; hence, starting to implement features of accessibility today may decrease the economic burden in the future and may also broaden the scope of our practices.

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#### Appendix 1: Concepts and definitions

##### Impairment and disability

In anticipation of the International Year of the Disabled in 1981 and the start of the Decade of the Disabled in 1982,<sup>14,15</sup> the World Health Organization (WHO) commissioned a study to define and classify "disability." This study led to the International Classification of Impairment, Disability and Handicap. Within this model, diseases may result in "impairment," the outward expression of deficits in the function of organs and organ systems.<sup>16,17</sup> Impairment may lead to "disability," which is defined as a reduced ability to perform activities of daily living, to move about or to interact with one's environment.<sup>16,17</sup>

##### Handicap

According to the original WHO definitions, a disability may lead to a "handicap," which is a limitation of a person's social role in regard to family, society or economic independence.<sup>16,17</sup>

In recent years, various groups have tried to refine these definitions.<sup>18</sup> In particular, many groups representing persons with disabilities have argued against the notion that disability leads to handicap. The Canadian Society for the International Classification of Impairment, Disease, and Handicap recently proposed a change to the classification of handicap. It argued that handicap is a situational result of the interaction between the characteristics of a person's impairments or disabilities and those of his or her environment; it is the interaction that results in social or environmental obstacles in a given situation. Thus, it is acknowledged that persons with disabilities may be influenced not only by medical and functional factors but also by environmental factors affecting accessibility, accommodation, resource availability, social support and equality; these may result in a handicap.<sup>19</sup>

##### Accessibility

There have been no formal attempts to define the term "accessible" as there have been to define "disability." The Oxford dictionary defines "accessible" as "capable of being used, entered or reached" and as "open to the influence of." Some have interpreted this definition in a broad sense to imply not only to "enter and use facilities, but also to be dealt with in an equitable, reasonable, and accommodating manner."<sup>20</sup> In this definition, accessibility refers not only to structural access but also to "attitudinal access."<sup>20</sup>

The diverse challenges involved in accommodation, the increasing strength of the disability movement and the research showing that persons without disabilities can make use of many accessible-design features have led to a new philosophy termed "universal accessibility." This philosophy represents a departure from traditional approaches to accommodation. Instead of special aids, facilities or structural elements being added or implemented specifically for persons with disabilities, the design eliminates obstacles and provides an environment that is barrier-free to all.<sup>21</sup> Barrier-free design takes into account the wide range of potential users of a building, including persons with permanent or temporary disabilities, elderly people, children and other persons without disabilities engaging in a variety of activities.<sup>22</sup>

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