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## Unmet health care needs of people with disabilities: population level evidence

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The present study examined population level data on unmet needs for adults with physical, sensory and cognitive disabilities, using the National Population Health Survey. The study revealed that disabled adults (aged 20–64) reported more than three times as many unmet health care needs as their non-disabled counterparts. Even after controlling for the effects of age, gender and poor health, disability had a significant effect on the perception of unmet needs, particularly disabilities associated with pain, hearing impairment and emotional problems. The greatest deterrent to receiving needed services among individuals with disabilities was cost. Despite being publicly funded and thereby presumably equally accessible to all, the health care system in Canada fails to meet the needs of some of its most vulnerable constituents – adults with disabilities.

**Keywords:** health service utilization; disability; population health; unmet needs; access to health service; attitudes to disability

### Introduction

Canadian national survey data (Statistics Canada 2003) show that between 13 and 21% of Canadians have difficulties accessing specialized healthcare (such as specialist services, emergency surgery and diagnostic tests) due to long waiting times and difficulties contacting health professionals. Research has repeatedly shown that where a problem with access exists in the general population it is considerably more severe in subsets of the population that are most disadvantaged (Brownell, Roos, and Roos 2001; Sanmartin et al. 2002). Sanmartin and colleagues (2006) confirmed that the presence of a disability (operationalized as activity limitation) increased the odds of failing to receive necessary routine care by more than 50%. ‘Access’ is a frequently used term among commentators on health issues and policy, but the usual definitions, referring to wait times, human resource shortages or geographical distribution of providers, fall short of the access issues experienced by people with disabilities. For them it also includes:

- the physical configuration of the practice – stairs, doorways, examination tables, etc.;
- the attitudes of providers and staff to disability;

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- expertise about the natural course and typical complications associated with disability;
- systemic factors such as funding models or regulatory programs (McColl and Shortt 2006).

There are four junctures where disabled individuals may experience barriers in attempting to receive healthcare. Along with members of the general population, they may experience difficulties finding a doctor or getting an appointment. Because of their disability, however, they may also experience difficulties entering the premises, using its facilities and receiving a reasonable standard of care. Thus, for people with disabilities access issues not only delay or inconvenience receiving healthcare (Sanmartin, Pierre, and Tremblay, 2006), they can actually prevent it.

The literature suggests that about 3% of the total population experience unmet needs for healthcare (Alonso et al. 2007), but that this number increases to between 30 and 40% when considering special at-risk populations, such as older adults, people with mental illness or children with special needs (Craske et al. 2005; Goldstein et al. 2006; van de Port et al. 2007). Unmet needs are defined as difficulties receiving service in response to a problem that significantly interferes with daily life (Alonso et al. 2007; Mechanic 2003). Van de Port et al. (2007) characterized unmet need as the invisible factors that may significantly affect health and well-being but that go undetected and unattended by the formal healthcare system. It must be kept in mind that unmet need is typically defined by the individual experiencing it and that that individual is often in some degree of distress (Mechanic 2003), however, Carr and Wolfe (1976) supported this as an appropriate way of assessing unmet need, particularly among populations at risk.

A wide variety of reasons has been suggested in the literature for unmet needs for health services. The literature has repeatedly shown that there are systemic factors that increase the likelihood of unmet needs (Sanmartin et al. 2002). For example, lack of public health insurance coverage, restrictions on coverage and the necessity of co-payments have all been linked with unmet needs (Benedict 2006; Craske et al. 2005; Heslin et al. 2006). It should come as no surprise that among disadvantaged populations economic factors are associated with a failure to receive needed services (Chen et al. 2002).

Mitchell and Gaskin (2005) observed that patients of fee for service practices were more likely to report unmet needs than patients of capitated practices. They attributed this difference to two factors. First, the standard consulting fee, payable by the fee schedule, was often inadequate to reimburse clinicians for complex cases, which typically required more time to provide adequate care (McColl et al. 2008). Secondly, fee for service practices are less likely than other models of primary care delivery to offer other non-medical health and social services, such as case management. Several authors have suggested that an efficiency-oriented medical culture may contribute to patients feeling rushed and restricted in terms of raising issues, particularly those of a more psycho-social nature (Drennan et al. 2007).

It appears from the literature that those with the greatest need are also the least likely to have those needs met by the healthcare system. A number of authors have observed that even among populations with special needs, those with the most severe conditions and those with the highest utilization are also those most likely to report unmet needs (Benedict 2006; Craske et al. 2005). One can only conclude that the system appears to be geared to best serve those who are the easiest to serve.

There also appears to be an issue of expectations associated with reporting of unmet needs. In population-based surveys researchers have repeatedly observed that people with high incomes and a higher level education are more likely to report unmet needs (Benedict 2006). Furthermore, it has been consistently observed that there is a negative gradient between age and the expression of unmet needs – in other words, older respondents were less likely to report unmet needs than their younger counterparts (van de Port et al. 2007). Finally, men and ethnic minorities have been found to report fewer unmet health needs (Goldstein et al. 2006; Heslin et al. 2006).

The purpose of the present study was to examine population level data on unmet needs for adults with physical, sensory and cognitive disabilities. The study sought to:

- quantify the extent of excess unmet need;
- discover the factors associated with unmet need in the Canadian context, where public health insurance is expected to eliminate barriers to access associated with cost.

## Methods

### *Design*

This was a cross-sectional study that examined the relationship between disability and unmet health needs in a Canadian sample, using secondary analysis of a population-based survey.

### *Sample*

The sample was drawn from the National Population Health Survey (NPHS) (Statistics Canada 1998–1999). The NPHS is based on the Canadian Labour Force Survey sampling frame and uses a cluster sampling approach. For the NPHS one member of each household was interviewed about his or her specific health experiences. Information was collected on health status, utilization of health services and determinants of health, as well as demographic and economic information. The response rate was approximately 90%. The NPHS file excludes people living on Indian reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces and residents of remote regions. Details of sampling and data collection have been described previously (Tambay and Catlin 1995).

Members of the total NPHS dataset were included in this study if they were between 20 and 64 years of age ( $n = 10,898$ ). This age restriction was imposed so as to be able to differentiate adult disability from disability acquired with old age. The dataset was partitioned into disabled individuals ( $n_d = 1703$ ) and non-disabled individuals ( $n_{nd} = 9195$ ). The issues associated with dichotomizing disability are discussed elsewhere (McColl et al. 2006; McColl 2006b), but for the present study suffice to say that this designation has been empirically supported and mirrors the policy environment encountered by people with disabilities in Canada. Respondents were classified as disabled if they met both of the following criteria:

- a. they had a chronic condition of at least 6 months duration, diagnosed by a health professional;
- b. they reported at least one restriction in activities of daily living.

Table 1. Sample characteristics of non-disabled and disabled participants in the 1998/1999 NPHS (weighted analysis).

|                              | Disabled (%)       | Non-disabled (%)   |                    |
|------------------------------|--------------------|--------------------|--------------------|
|                              | ( <i>n</i> = 1703) | ( <i>n</i> = 9195) | <i>P</i>           |
| Age                          |                    |                    |                    |
| 20–34                        | 22.0               | 35.2               |                    |
| 35–44                        | 25.8               | 30.6               |                    |
| 45–54                        | 28.8               | 20.8               | ≤0.05 <sup>a</sup> |
| 55–64                        | 23.3               | 13.4               |                    |
| Gender                       |                    |                    |                    |
| Male                         | 46.1               | 50.5               |                    |
| Female                       | 53.9               | 49.5               |                    |
| Marital status               |                    |                    |                    |
| Married/common law partner   | 65.2               | 67.0               |                    |
| Single                       | 15.9               | 23.3               | ≤0.05 <sup>a</sup> |
| Widow/separated/divorced     | 18.9               | 9.7                | ≥0.05 <sup>a</sup> |
| Employment                   |                    |                    |                    |
| Working during past year     | 54.9               | 78.2               | ≤0.05 <sup>a</sup> |
| Not working during past year | 37.1               | 14.9               | ≤0.05 <sup>a</sup> |
| Not working                  | 7.8                | 6.8                |                    |
| Rurality                     |                    |                    |                    |
| Urban                        | 81.5               | 83.6               |                    |
| Rural                        | 18.5               | 16.4               |                    |
| Income adequacy              |                    |                    |                    |
| Lowest income quintile       | 6.9                | 3.9                | ≤0.05 <sup>a</sup> |
| Low–mid income quintile      | 11.2               | 6.8                | ≤0.05 <sup>a</sup> |
| Middle income quintile       | 24.9               | 23.2               |                    |
| Upper–mid income quintile    | 34.8               | 40.2               |                    |
| Highest income quintile      | 22.2               | 25.9               |                    |

<sup>a</sup> $\chi^2$  test on (*k* – 1) degrees of freedom.

Table 1 summarizes the characteristics of the sample. Comparable with other population-based estimates of disability, 14.5% of the sample was classified as disabled (Statistics Canada 2006). Disability was more common among women than men and the disabled sample was on average older. Disabled individuals were more likely to be divorced, widowed or separated and less likely to have had post-secondary education. People with disabilities had higher unemployment and lower personal incomes.

Table 2 presents the health and disability-related characteristics of the sample, i.e. health, impairment, activity restrictions and chronic conditions. Individuals with disabilities aged 20–64 experienced poorer health than non-disabled individuals. About one-third of the disabled group reported fair or poor health, one-third reported good health and one-third reported very good or excellent health. The disabled sample had significantly more chronic conditions, with an average of three, compared with an average of one for the non-disabled sample. The most common impairments were

Table 2. Disability and health related variables among disabled and non-disabled participants.

|                                      | Disabled (%)<br>( <i>n</i> = 1703) | Non-disabled (%)<br>( <i>n</i> = 9195) | <i>P</i> |
|--------------------------------------|------------------------------------|----------------------------------------|----------|
| Impairment                           |                                    |                                        |          |
| Vision                               | 63.2                               | 47.6                                   | *        |
| Pain                                 | 46.7                               | 3.4                                    | *        |
| Cognition                            | 36.6                               | 15.9                                   | *        |
| Mobility                             | 9.9                                | 0.6                                    | *        |
| Hearing                              | 5.3                                | 1.8                                    | *        |
| Dexterity                            | 3.5                                |                                        |          |
| Emotion                              | 2.7                                | 3.3                                    |          |
| Speech                               | 2.0                                |                                        |          |
| Activity restrictions                |                                    |                                        |          |
| Heavy household chores               | 1.2                                | 44.7                                   | *        |
| Housework                            | 0.3                                | 19.3                                   | *        |
| Shopping for necessities             | 0.4                                | 15.4                                   | *        |
| Preparing meals                      | 0.3                                | 9.4                                    | *        |
| Moving about house                   |                                    | 5.3                                    |          |
| Personal care                        |                                    | 4.5                                    |          |
| Number of chronic conditions         |                                    |                                        |          |
| 0                                    | <sup>b</sup>                       | 49.72                                  |          |
| 1                                    | 26.4                               | 27.4                                   |          |
| 2                                    | 26.5                               | 13.8                                   | *        |
| 3+                                   | 47.2                               | 9.6                                    | *        |
| Average number of chronic conditions | 2.8                                | 0.9                                    | *        |
| Health                               |                                    |                                        |          |
| Excellent                            | 6.6                                | 29.8                                   | *        |
| Very good                            | 23.2                               | 43.4                                   | *        |
| Good                                 | 36.2                               | 23.4                                   | *        |
| Fair                                 | 24.7                               | 3.2                                    | *        |
| Poor                                 | 9.3                                | 0.3                                    |          |

\**p* < = 0.05 Chi-square on 1 d.f.<sup>b</sup>by definition, disabled sample must have at least one chronic condition.

visual impairments, pain and cognitive deficits. Significantly, more of the disabled sample experienced restrictions in each of the six activities of everyday life, compared with the non-disabled group. The most common restrictions related to household responsibilities, rather than personal or mobility restrictions.

### Measurement

Variables for the analysis were abstracted from the NPHS public access dataset. The variable denoting unmet needs asked participants the following question: 'was there a time in the past year when you needed health care but you did not receive it?' A dichotomous (yes/no) response option was permitted. Participants were asked to

specify which of five particular health services they did not receive when needed (services related to a physical problem, mental problem, injury, regular check-up or other health problem). Finally, the participants were asked the reason for their most recent unmet need, with 14 possible reasons being offered for yes/no responses.

### *Analysis*

Analysis of the data was done using SPSS version 11.0 for Windows. The univariate and bivariate analyses were based on weighted data in order to correct for sampling proportions in the survey. Bootstrap procedures were used to obtain variance estimates for logistic regression. The final results reflect the analysis based on bootstrap files provided by Statistics Canada.

## **Results**

### *The extent of unmet need*

Disabled individuals had three times more unmet health care needs than non-disabled individuals (see Table 3). Whereas only 5.2% of the non-disabled sample had had

Table 3. Comparison of unmet needs among non-disabled and disabled participants.

|                                | Disabled (%)       | Non-disabled (%)   |                    |
|--------------------------------|--------------------|--------------------|--------------------|
|                                | ( <i>n</i> = 1703) | ( <i>n</i> = 9195) | <i>P</i>           |
| Unmet health need              | 17.5               | 5.2                | ≤0.05 <sup>a</sup> |
| Type of care not received      |                    |                    |                    |
| Physical health problem        | 72.9               | 68.3               |                    |
| Emotional/mental problem       | 15.1               | 9.5                | ≤0.05 <sup>a</sup> |
| Injury                         | 10.6               | 10.6               |                    |
| Other                          | 5.2                | 5.7                |                    |
| Regular check-up               | 3.8                | 9.3                | ≤0.05 <sup>a</sup> |
| Reasons for unmet need         |                    |                    |                    |
| Wait too long                  | 22.9               | 23.0               |                    |
| Felt/be inadequate             | 16.3               | 13.0               |                    |
| Not available when required    | 15.2               | 12.4               |                    |
| Cost                           | 15.1               | 9.2                | ≤0.05 <sup>a</sup> |
| Didn't get around to it        | 10.3               | 14.8               | ≤0.05 <sup>a</sup> |
| Too busy                       | 8.8                | 18.5               | ≤0.05 <sup>a</sup> |
| Not available in area          | 8.1                | 6.4                |                    |
| Other reason                   | 8.0                | 5.3                |                    |
| Didn't know where              | 4.3                | 3.9                |                    |
| Decided not to seek            | 4.4                | 5.9                |                    |
| Transportation problems        | 1.8                | 1.0                |                    |
| Language problem               | 0.0                | 0.1                |                    |
| Dislikes or afraid of doctor   | 3.0                | 1.1                |                    |
| Personal/family responsibility | 2.0                | 0.1                |                    |

<sup>a</sup>χ<sup>2</sup> test on 1 degree of freedom.

unmet health needs in the past year, 17.5% of the disabled sample had had unmet needs. Looking more specifically at the types of unmet health needs experienced, Table 3 shows that of those who experienced an unmet need the highest proportion experienced an unmet physical health need (73% of disabled and 68% of non-disabled). Significant differences between disabled and non-disabled samples were seen for two types of problems. People with disabilities were significantly more likely than non-disabled to say that they had experienced an unmet mental health need in the past year and significantly less likely to say that they had not been able to obtain a regular check-up.

### *Reasons for unmet need*

Table 3 also compares reasons for experiencing unmet healthcare needs for disabled and non-disabled groups. Waiting time was the most frequently reported reason for both groups. The cost of care appeared to be much more of a deterrent for disabled people receiving care than it was for non-disabled people. Almost twice as many disabled as non-disabled people reported cost as a barrier to receipt of appropriate care. On the other hand, time constraints appeared to represent more of a barrier for non-disabled people than they did for disabled. Disabled respondents were significantly less likely than non-disabled to say that they were too busy or that they didn't get around to it.

### *Factors affecting unmet need*

In an effort to understand the factors related to unmet health needs, the next step was multivariate logistic regression. Table 4 gives detailed results of this analysis. The strongest predictor of unmet health needs was poor or fair health. Individuals with poor health had seven times the odds of reporting unmet health needs (compared with individuals that reported having excellent health) and those with fair health had three times the odds of reporting unmet health needs. A steady gradient of increased risk of unmet need accompanied each successive level of decreasing health.

The next most significant predictor of unmet healthcare needs was disability. Disabled people had twice the odds of reporting unmet health needs compared with non-disabled individuals. Specific impairments which predicted unmet needs were pain, hearing problems and emotional problems. Limitations in these three areas increased the odds of reporting unmet healthcare needs by 50–80%.

Several demographic variables were also associated with unmet needs. Being widowed, separated or divorced (as against being married) resulted in a two-fold increase in the odds. Being employed also represented an increased risk of about 40% over being unemployed. Contrary to expectations, once health and disability were controlled for age appeared to have a protective effect against the reporting of unmet needs. Men were only 80% as likely as women to report unmet needs.

In order to better understand the impact of disability on unmet needs we looked more closely at the disabled sub-sample within the study ( $n = 1703$ ) and at the differences between those with met and unmet needs (Table 5). In terms of demographic characteristics, the disabled participants with unmet needs were significantly younger than those who reported no unmet health needs. They were also more likely to be female, separated/widowed/divorced and poor. These are the same factors that predicted unmet needs in the general population (regression analysis, Table 4), with two exceptions. Among the general population employment was positively related to

Table 4. Multiple logistic regression of factors affecting unmet needs.

|                            | Likelihood ratio | 95% confidence interval <sup>a</sup> | Significance |
|----------------------------|------------------|--------------------------------------|--------------|
| General health             |                  |                                      |              |
| Very good                  | 1.67             | 1.18–2.36                            | 0.00         |
| Good                       | 1.98             | 1.39–2.81                            | 0.00         |
| Fair                       | 3.24             | 2.05–5.14                            | 0.00         |
| Poor                       | 7.36             | 3.96–13.68                           | 0.00         |
| Disability                 | 2.16             | 1.62–2.87                            | 0.00         |
| Limitations                |                  |                                      |              |
| Pain                       | 1.84             | 1.34–2.52                            | 0.00         |
| Hearing                    | 1.70             | 1.03–2.80                            | 0.04         |
| Emotion                    | 1.52             | 1.04–2.21                            | 0.03         |
| Marital status             |                  |                                      |              |
| Seperated/divorced/widowed | 1.98             | 1.41–2.77                            | 0.00         |
| Sex                        |                  |                                      |              |
| Male                       | 0.80             | 0.65–0.98                            | 0.03         |
| Age                        |                  |                                      |              |
| 35–44                      | 0.60             | 0.47–0.76                            | 0.00         |
| 45–54                      | 0.52             | 0.37–0.71                            | 0.00         |
| 55–64                      | 0.35             | 0.23–0.52                            | 0.00         |
| Employment                 |                  |                                      |              |
| Employed                   | 1.39             | 1.03–1.88                            | 0.03         |

<sup>a</sup>Bootstrap analysis.

unmet needs, while in the disabled population poverty was significantly related to unmet needs.

Table 6 shows that the disabled respondents with unmet needs had significantly more problems with pain, cognitive function, emotional issues and hearing. They tended to be limited not in their ability to get around or do personal care, but to do housework, chores and errands. As expected, they were also significantly more likely to report poor health.

Finally, in terms of service utilization, disabled people with unmet needs were significantly more likely to have seen a range of health professionals in the past year, including family doctors, medical specialists, nurses, chiropractors, psychologists and social workers (Table 7). Thus, the perception of unmet needs appears not to be a function of lack of access to the system, but rather with some perceived inadequacy in the system. Interestingly, disabled respondents with unmet needs were no more likely to have seen rehabilitation professionals, specifically occupational, speech and physical therapists. They were, however, significantly more likely to have resorted to alternative and self-help approaches to care in order to attempt to meet their health needs.

## Discussion

This study revealed that disabled adults (aged 20–64) reported more than three times as many unmet healthcare needs as their non-disabled counterparts. Even after

Table 5. Demographic characteristics of disabled participants with met and unmet needs.

|                            | Unmet needs (%)   | No unmet needs (%) | <i>P</i>           |
|----------------------------|-------------------|--------------------|--------------------|
|                            | ( <i>n</i> = 297) | ( <i>n</i> = 1404) |                    |
| Age                        |                   |                    |                    |
| 20–34                      | 25.9              | 22.4               | ≤0.05 <sup>a</sup> |
| 35–44                      | 29.3              | 26.1               |                    |
| 45–54                      | 32.0              | 27.2               |                    |
| 55–64                      | 12.8              | 24.3               |                    |
| Gender                     |                   |                    |                    |
| Male                       | 34.9              | 48.4               | ≤0.05 <sup>a</sup> |
| Female                     | 65.1              | 51.6               |                    |
| Marital status             |                   |                    |                    |
| Married/common law partner | 51.1              | 68.1               |                    |
| Single                     | 15.6              | 16.0               |                    |
| Widow/separated/divorced   | 33.3              | 15.9               |                    |
| Ethnicity                  |                   |                    |                    |
| White                      | 93.9              | 92.8               |                    |
| Non-white                  | 6.1               | 7.2                |                    |
| Rurality                   |                   |                    |                    |
| Urban                      | 82.4              | 81.1               |                    |
| Rural                      | 17.6              | 17.9               |                    |
| Income                     |                   |                    |                    |
| Lowest income quintile     | 12.0              | 5.8                | ≤0.05 <sup>a</sup> |
| Low-mid income quintile    | 13.1              | 10.8               |                    |
| Middle income quintile     | 21.3              | 25.7               |                    |
| Upper-mid income quintile  | 31.1              | 35.5               |                    |
| Highest income quintile    | 22.5              | 22.1               |                    |

<sup>a</sup> $\chi^2$  test on (*k* – 1) degrees of freedom.

controlling for the effects of age, gender and poor health, disability still had a significant effect on the perception of unmet needs, particularly disabilities associated with pain, hearing impairment and emotional problems. Veltman et al. (2001) found that one-third of people with disabilities reported experiencing barriers to receiving adequate healthcare and about one-fifth felt they did not receive the healthcare they required. In our sample 17.5% of disabled respondents reported unmet needs, compared with 5% of non-disabled and with 30–40% of other special needs populations cited in the literature, such as older adults, people with mental illness or children with disabilities (Craske et al. 2005; Goldstein et al. 2006; van de Port et al. 2007).

A second important finding was that the greatest deterrent to receiving needed services among individuals with disabilities was cost. Unlike their non-disabled contemporaries, disabled respondents identified economic issues, not time constraints, as the main factor limiting their access to needed care. Disabled respondents were clearly economically disadvantaged and less likely to be employed, as shown in Table 1. Wait times and geographical issues impeded access equally for both groups.

Table 6. Disability and health related variables among disabled with met and unmet needs.

|                          | Unmet needs (%) | No unmet needs (%) | P             |
|--------------------------|-----------------|--------------------|---------------|
|                          | (n = 297)       | (n = 1404)         |               |
| Impairment               |                 |                    |               |
| Pain                     | 63.9            | 48.1               | $\leq 0.05^a$ |
| Cognition                | 41.5            | 35.4               | $\leq 0.05^a$ |
| Emotion                  | 19.3            | 6.2                | $\leq 0.05^a$ |
| Mobility                 | 10.9            | 9.8                |               |
| Hearing                  | 8.4             | 4.6                | $\leq 0.05^a$ |
| Vision                   | 5.1             | 3.7                |               |
| Dexterity                | 4.4             | 3.3                |               |
| Speech                   | 1.1             | 2.2                |               |
| Activity restrictions    |                 |                    |               |
| Heavy household chores   | 59.1            | 41.7               | $\leq 0.05^a$ |
| Housework                | 26.2            | 17.9               | $\leq 0.05^a$ |
| Shopping for necessities | 23.2            | 13.8               | $\leq 0.05^a$ |
| Preparing meals          | 10.5            | 9.2                |               |
| Moving about house       | 4.7             | 5.5                |               |
| Personal care            | 4.0             | 4.6                |               |
| Health                   |                 |                    |               |
| Excellent                | 4.7             | 8.6                |               |
| Very good                | 19.3            | 24.4               |               |
| Good                     | 29.7            | 37.6               |               |
| Fair                     | 28.4            | 22.6               |               |
| Poor                     | 17.9            | 6.8                | $\leq 0.05^a$ |

<sup>a</sup> $\chi^2$  test on (k - 1) degrees of freedom.

There appeared to have been two sets of factors that affected the propensity to report an unmet need: factors associated with need and factors associated with expectations. In terms of need, those reporting unmet needs were more likely to be in poor health, to have a disability, to use other health services and to live without a partner. This finding is entirely consistent with the literature on other disabled populations (Benedict 2006; Craske et al. 2005). Disabled people have been shown in our earlier research to be high users of health care. The odds of seeing one's family doctor at least once a year increased 2.7 times for someone with a physical disability over someone with no reported disability (McColl and Shortt 2006; McColl 2006a). The relationship of need to perceived unmet need is particularly disappointing and warrants detailed consideration. If it is true that those in the greatest need are also those with the most unmet needs and if a society is judged by how it serves its most needy, then a fuller examination of unmet needs could be very revealing. One expression of unmet need among high users may be the coincident utilization of alternative and self-help approaches to complement or supplement the shortcomings of mainstream healthcare (Donnelly et al. 2007; Nieuwenhuijsen et al. 2008).

There are a number of factors that may explain the increased perception of unmet needs among disabled respondents, despite the fact that they are typically already high users (Statistics Canada 2003; Batavia and De Jong 2001; Bockenek 1997;

Table 7. Utilization of health services among disabled participants with met and unmet health needs.

|                               | Unmet needs (%) | No unmet needs (%) | P             |
|-------------------------------|-----------------|--------------------|---------------|
|                               | (n = 297)       | (n = 1404)         |               |
| Health professionals          |                 |                    |               |
| Family doctor                 | 93.8            | 90.3               | $\leq 0.05^a$ |
| Medical specialist            | 68.4            | 45.7               | $\leq 0.05^a$ |
| Nurse                         | 28.4            | 12.6               | $\leq 0.05^a$ |
| Chiropractor                  | 22.2            | 17.1               | $\leq 0.05^a$ |
| Social worker                 | 20.3            | 8.1                | $\leq 0.05^a$ |
| Physiotherapist               | 20.0            | 18.6               |               |
| Psychologist                  | 11.6            | 4.5                | $\leq 0.05^a$ |
| Occupational/speech therapist | 5.1             | 3.5                |               |
| Other health services         |                 |                    |               |
| Home care – non-professional  | 81.8            | 59.6               | $\leq 0.05^a$ |
| Home care – professional      | 45.5            | 50.9               |               |
| Alternative health care       | 25.8            | 13.8               | $\leq 0.05^a$ |
| Hospital stay                 | 17.0            | 14.2               |               |
| Self-help                     | 15.2            | 5.4                | $\leq 0.05^a$ |

<sup>a</sup> $\chi^2$  test on  $(k - 1)$  degrees of freedom.

Meyers et al. 1989). The reasons for accessing health services among people with disabilities typically fell into three categories:

- the same health-related issues that were experienced by the general population;
- specific issues associated with the disability, including secondary complications;
- administrative issues relating to disability pensions, benefits and services.

There is no reason to expect that people with disabilities would be immune to the regular health complaints associated with their age, with infectious exposures, with seasonal changes or with preventive healthcare. On top of those, however, disabled patients had two further layers of issues that brought them into touch with the health-care system: health issues related to the disability and its sequelae and administrative issues related to the disability.

In order to obtain many of the necessary benefits and services to which disabled adults are entitled (such as disability pensions, tax credits, parking permits, etc.) forms must be completed and signed by a physician. Most practices charged an administrative fee for such services, usually in the range \$25–30. This would not represent an undue hardship for most patients, but for disabled patients, who are typically on lower or fixed incomes and who may require a number of these authorizations every year, the burden could be prohibitive.

In Canada federal legislation (Government of Canada 1984) has ensured that the publicly funded health care system is:

- universal – covers the whole population;
- comprehensive – covers all medically necessary services;

- accessible – does not have cost as a barrier to needed care;
- portable – available across jurisdictions within the country;
- not for profit – paid through provincial/territorial health insurance plans administered by government.

These legislated conditions set a standard for the healthcare system in Canada and are meant to ensure that economic issues do not impede access to needed services for anyone, regardless of their condition or the risk they represent. However, there are clearly hidden costs, such as administrative costs, opportunity costs and logistical costs, that act as deterrents to care and result in the experience of unmet needs, especially among those with multiple and complex conditions. As Craske et al. (2005) underlined, in many cases it is not the health or professional issues that impede access, rather it is the logistical issues, like transportation, the need for an attendant or assistant or supplementary treatment costs.

In particular, this study has suggested that people with certain kinds of disabilities are most prone to unmet needs, specifically people with hearing problems, pain and emotional problems. Each of these is readily explainable in terms of its relationship to unmet needs. Pain and emotional problems take a considerable amount of time to properly assess and effectively manage. Our own work has shown that family physicians recognize that disabled patients are more complex than their non-disabled contemporaries and thus require more time. Further, our physician interviewees noted a number of communication issues that were challenging for a smooth and efficient process of care (McColl et al. 2008).

Several other authors have found that disabled patients reported feeling rushed and dismissed, resulting in a lack of confidence in the process of care (Iezzoni et al. 2003). In a Canadian study 27% felt rushed, 17% felt their doctor didn't listen, 10% felt devalued by service providers and 19% felt the service they received was inadequate. Interestingly, those with deteriorating conditions were most likely to be dissatisfied (Veltman et al. 2001).

On the other side of the issue, however, we must consider structural issues in the delivery system for primary care that contribute to some of these issues. Using a qualitative approach, we found that physicians who were reimbursed by salary were the most satisfied with the care they were able to provide to their most complex and demanding patients (McColl et al. 2008). Furthermore, the quality of care for selected conditions was significantly better when provided by salaried physicians than by fee for service or capitation practices (McColl et al. 2007). Pimlott (2008) recently commented on the time pressures experienced by Canadian family physicians and noted that, depending on case mix, 11–18 hours a day were required simply to meet current standards for preventive and chronic disease care for the average 2500 person case load. In such an environment it is hardly surprising that the most needy patients felt rushed and overlooked. Depending on the configuration of the practice, some of the physicians in our qualitative research admitted that this results in an inferior standard of care (McColl et al. 2008).

Another key theme in the findings of the present study was that expectations appear to drive the perception of unmet needs. In this study more unmet needs were reported by those who were employed and younger. Like a number of other authors, we found that younger patients were actually more likely to report unmet needs. Chen and Hou (2002), for example, found that each additional decade of life between 20 and 65 decreased the chance of reporting unmet needs. Employment was another variable that

was associated with unmet needs, with employed persons 40% more likely to report unmet needs. This might reflect time constraints on keeping medical appointments, but it might also reflect expectations associated with paying health insurance premiums through taxation or employment benefits. Although not significant in the multivariate equation, people with a college or university education were 39% more likely to report unmet needs, further contributing to the hypothesis on expectations and entitlement.

## Conclusion

In conclusion, the study has shown that the healthcare system in Canada, despite being publicly funded and thereby presumably equally accessible to all, fails to meet the needs of some of its most vulnerable constituents – those with disabilities, who are incidentally already high users of the system. Reasons for unmet needs may be attributable to system-wide funding issues or to individual patient or provider factors, such as needs, expectations or communication (Sanmartin et al. 2006). While further exploration of the causes is certainly warranted, several obvious remedies should be considered immediately. Interdisciplinary teams and chronic disease management in primary healthcare have been repeatedly discussed as a solution to scarce medical human resources and yet such solutions are slow to be implemented (Pimlott 2008). Case finding and active exploration of unmet needs is recommended as a first step in addressing this issue (Craske et al. 2005).

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