RESEARCH PAPER

Incorporating Group Medical Visits into Primary Healthcare: Are There Benefits?

Intégrer les visites médicales de groupe aux soins de santé primaires : y a-t-il des avantages?

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Abstract

Objective: Group medical visits (GMVs) have been touted as an innovation to effectively and efficiently provide primary healthcare (PHC) services. The purpose of this paper is to report whether GMVs have tangible benefits for providers and patients.

Methods: This descriptive study included in-depth interviews with patients attending and providers facilitating GMVs and direct observation. Five primary care practices in rural towns and four First Nations communities participated. This paper reports on an analysis of interviews and observations.

Results: Thirty-four providers and 29 patients were interviewed. Patient participants were an average of 62 years old, mostly female and married. The three most common chronic conditions reported by patients were diabetes (n = 9), high blood pressure (n = 8) and arthritis (n = 7). Three themes illustrated how GMVs: (1) can foster access to needed health services; (2) expand opportunities for collaboration and team-based care; and (3) improve patient and provider experiences. A fourth theme captured structural challenges in delivering GMVs.

Discussion: There are tangible benefits in delivering GMVs in PHC. While whole patient panels can benefit from the integration of GMVs into practice, those who could gain the most are patients with complex medical and social needs. GMVs provide an opportunity to enhance PHC, strengthening the system particularly for patients with chronic conditions.

Résumé

Objectif : Les visites médicales de groupe (VMG) sont considérées comme des innovations pour la prestation efficace et efficiente de soins de santé primaires (SSP). Le but de cette étude est de voir si effectivement les VMG offrent des avantages pour les prestataires et pour les patients.

Méthodes : Cette étude descriptive comprenait des entrevues en profondeur auprès de patients qui participent à des VMG et auprès des prestataires de soins qui les animent, ainsi que des observations directes. Cinq cliniques de soins primaires dans des petites villes rurales et quatre communautés autochtones y ont participé. L'article fait état d'une analyse des entrevues et des observations.

Résultats : Trente-quatre prestataires de soins et vingt-neuf patients ont été interviewés. L'âge moyen des patients participants était de 62 ans, la plupart étant des femmes mariées. Les trois états chroniques les plus fréquemment rapportés par les patients étaient le diabète (n=9), l'hypertension artérielle (n=8) et l'arthrite (n=7). Trois volets montrent comment les VMG peuvent (1) favoriser l'accès aux services de santé requis, (2) accroître les chances de collaboration et les soins en équipe et (3) améliorer l'expérience des patients et des prestataires. Un quatrième volet a trait aux défis structurels liés aux VMG.

Discussion : Les VMG dans le cadre des SSP présentent de réels avantages. Bien que tous les patients d'un groupe puissent tirer avantage de l'intégration des VMG à la pratique, ceux qui en bénéficient le plus sont les patients qui présentent une complexité de besoins médicaux et sociaux. Les VMG permettent d'accroître les SSP en renforçant le système, particulièrement pour les patients aux prises avec un état chronique.

Introduction

Strengthening of primary healthcare (PHC) remains a priority for Canada since it can lead to a more equitable system of care with better population health outcomes at reduced cost (Starfield 1998; Valaitis et al. 2012; WHO 2008a, 2008b). Canada has seen extensive reforms and investments in PHC totalling over $1 billion (Aggarwal and Hutchison 2012). This has unleashed a myriad of innovations, at a time when a greater proportion of the population needs increasingly complex clinical and psychosocial care to meet their needs and expectations. Yet, many patients, especially those living with chronic conditions, continue to have challenges in accessing a family physician (Ouellet et al. 2011; San Martin et al. 2004) for timely or comprehensive care (Baker and Denis 2011; Nasmith et al. 2010; Schoen and Osborn 2010). Overall, family physicians are accepting fewer patients (Canadian Institute for Health Information 2010; National Physician Survey 2004) and newer generations of family physicians are seeking a better work–life balance (Brcic et al. 2012; Watson et al. 2006). This creates challenges in access, especially in rural and remote communities.

In efforts to improve the access to and quality of PHC, experimentation and implementation of different organizational models has occurred across Canada (Glazier et al. 2012; Hutchison et al. 2011). The focus of these reforms has primarily been on changing providers' behaviours through implementing new types of payments and physician fee enhancements or utilizing interprofessional teams (Health Canada 2004). At the same time, a growing body of research questions whether the conventional use of individual appointments can meet the needs of a practice's panel of patients, particularly for those with chronic conditions (Lavoie et al. 2013; Riley and Marshall 2010; Weinger 2003). There has also been a growing interest in group medical visits (GMVs), which have been touted as an innovation to effectively and efficiently provide PHC services (McLeod 2004; Noffsinger 2009). Yet less is known from provider or patient perspectives about the benefits and challenges that GMVs offer within the context of PHC.

GMVs have emerged as a model of care that strengthens PHC by addressing some of the challenges related to the changing nature of patients' health and healthcare needs and the needs of family physicians for increased work–life balance. GMVs are visits with one's regular provider that take place in a group of 10–15 patients. There are two main types of GMVs (McLeod 2004; Noffsinger 2009). The first type of GMVs are "drop-in group medical appointments" (DIGMAs), which are meant to increase timely access to primary care (Noffsinger 2009). The second type of GMVs are "homogenous visits," which are meant to increase the quality and comprehensiveness of services delivered to patients who share common healthcare needs and facilitate increased self-management of an individual's health. Other healthcare providers and, sometimes, community organizations (e.g., local recreation centre) are also present.

GMVs in PHC, though relatively recent in Canada (McLaren 2008; Noffsinger 2009), were introduced in the US in the 1990s to optimize clinicians' time and increase the quality of care to growing numbers of patients with chronic conditions (Noffsinger and Scott 2000;

Riley and Marshall 2010; Yehle et al. 2009), including those with hypertension, stroke, heart failure (Griffin et al. 2009; Yehle et al. 2009) and chronic obstructive pulmonary disease (De Vries et al. 2008). GMVs have also been used to deliver prenatal care (Rice and Slater 1997). The content of GMVs includes medical services related to a common chronic condition, such as a routine physical examination (Riley and Marshall 2010; Walker 2000), and an education or health promotion component.

GMVs can provide self-management support encompassing strategies such as individualized assessment, collaborative goal-setting, skills enhancement and access to resources (Schillinger et al. 2009). Compared with individual visits, randomized trials have shown that, overall, group interventions are associated with clinically significant improvement in a variety of medical, psychological and behavioural outcomes (Beck et al. 1997; Clancy et al. 2003a; Eisenstat et al. 2013; Kulzer et al. 2007; Sadur et al. 2002; Trento et al. 2004; Wagner et al. 2001). Past work has shown GMVs to improve patients' access to medical care (Bronson and Maxwell 2004), decrease emergency department and outpatient utilization, increase quality of life, improve self-efficacy, increase satisfaction with care (Bray et al. 2005; Clancy et al. 2003b; Coleman et al. 2001; De Vries et al. 2008; Howard 2002; Jaber et al. 2006; Kirsh et al. 2007, 2008; Scott et al. 2004; Trento et al. 2005) and increase providers' ability to monitor those with complex chronic care needs (Beck et al. 1997; Scott et al. 2004). Most of this work has taken place in the US and in mainly urban settings. The purpose of qualitative work is to examine the benefits and challenges of delivering of GMVs for patients living in rural settings in British Columbia (BC), Canada.

Methods

This descriptive study included in-depth interviews with patients attending and providers facilitating GMVs and direct observation. It took place in Northern Health (NH) Authority in BC, where there is a partnership between the health authority and family physicians to deliver PHC services across northern BC. GMVs are delivered in a primary care practice, in a space provided by NH or in community clinics, many of which are located on a First Nation reserve (lands reserved for First Nations[1] peoples).

Participants

Primary care practices and First Nation reserve communities who had offered GMVs for two years or more were identified by NH. Five primary care practices in different towns participated. Practices were funded through fee-for-service (n = 2) or contract arrangements through BC's Alternative Payment Plan (n = 3). Four First Nation reserve communities also participated. Providers delivering GMVs in First Nation reserve communities were either salaried or paid through fee-for-services. These communities ranged in population size from 200 to 76,000; some communities were up to 1,000 km away from Prince George, BC's northern regional city (Consumer-Purchaser Disclosure Project 2011).

Inclusion criteria for patient participants included: (1) adults ≥19 years; (2) living in NH; (3) having no significant cognitive impairment; and (4) had participated in a GMV in the past year. Inclusion criteria for providers were that they had been involved in facilitating or providing care in at least two GMVs in the past year and identified the participating practice as the place where they regularly provided care.

Recruitment

Participants were recruited from the practices and communities working in partnership through PHC coordinators, medical office assistants or Community Health Representatives (CHRs) who worked and resided in First Nation reserve communities. PHC coordinators are NH employees who facilitate access and service delivery in specified communities across the health authority. CHRs play a key role in health promotion, protection and injury prevention (Health Canada 2004). Care was taken to adhere to ethical principles outlined in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2010 (Government of Canada 2010). All procedures were approved by the University of BC, University of Northern BC, NH ethics boards and by the PHC practices and First Nation reserve communities. Memoranda of understanding to participate in this research were signed with each First Nation community.

Data collection

Interviews were conducted in-person or over the telephone if the time the researchers were in the community was not convenient for participants. Sampling and analysis occurred iteratively. Purposive sampling (Corbin and Strauss 2008) was used to explore a range of patients' and providers' experiences (e.g., patients' ages, different types of providers' experiences) in attending or facilitating a GMV. After obtaining informed consent (verbal or written), interviews with providers and patients and one interview with two patients were conducted. Open-ended questions explored: participant's experiences; barriers to delivering or receiving PHC in a group format; and recommendations for improving GMVs. Interviews were audio-recorded. Field notes were written following interviews or direct observation. All participants were given $15 in appreciation of their time.

Data analysis

Transcribed, anonymized interview transcripts were compared with the audio recordings for technical accuracy. An interpretive thematic analysis was conducted according to procedures for qualitatively derived data (Thorne et al. 2004). Coding of data was conducted by two of the research team members, where agreement was reached on the coding by consensus. Coded data were then analyzed. We checked our analysis with discussion in the team (which included NH) as well as with a sample of participants. Atlas.ti, software for analyzing qualitative data, was used to organize and code the data. Trustworthiness (Thorne 2008) of the analysis was evaluated through discussions with PHC experts and feedback from a selection of participants.

Results

Providers (n = 34) reported delivering all types of GMVs, with the CHCC model being the most frequently used (Table 1). Examples of the types of services delivered through GMVs ranged from prescription refills, health education and links to other resources, ordering laboratory tests, to having a physical examination (in a separate room but then joining the group for discussion) and coordinating services with public health and specialist care. GMVs were offered weekly to quarterly, lasting between 60 and 90 minutes with between 9 and 15 patients. The primary care provider was not present for the entire time for GMVs that took over 60 minutes.

TABLE 1. Demographic characteristics of provider

Providers (n = 34)	
Type of provider attending GMV (n)	
Family physician	10
Nurse	7
Nurse practitioner	2
Primary healthcare coordinator	4
Other (includes medical office assistant, community health representative, outreach coordinator, etc.)	11
GMVs delivered by provider in one month	
Mean (SD)	1.4 (1.85)
Range	1–6
Type of GMVs delivered (%)+	
Homogenous (e.g., disease-specific teaching, reviewing lab values – haemoglobin A1c, prenatal, physical exams)	88.57
Drop-in group medical appointments (e.g., prescription renewals, sick day notes, acute episodic events such as a cough)	34.29

Note: +providers were asked to list all types of GMVs delivered

Patient participants (n = 29) were an average of 62 years old, mostly female and married (Table 2). Patients had attended an average of four GMVs in the past year, with most attending a homogenous GMV. Most patients had three or more chronic conditions.

TABLE 2. Characteristics of patients attending GMVs

Patients (n = 29)	
Age (yrs)	
Mean (SD)	62 (16)
Gender (% female)	65.52
Self-reported health (1-5)+	
Mean (SD)	2.76 (1.12)
Ethnicity (%)	
European (Caucasian)	55.17
Aboriginal**	
First Nation	41.38
Métis	3.45

TABLE 2. Characteristics of patients attending GMVs (continued)

Patients (n = 29)	
Marital status (%)	
Married	79.31
Income (%)	
<$20,000	37.93
$20,000–$29,999	20.69
$30,000–$39,999	20.69
$40,000–$49,999	3.45
$50,000–$59,999	6.90
$60,000–$69,999	3.45
≥$70,000	0
Missing	6.90
Number of chronic conditions (%)	
Range	0–7
0	10.34
1	6.90
2	27.59
3 or more	55.18
Chronic conditions (%)++	
Diabetes	58.62
Arthritis	48.28
High blood pressure	51.72
Depression	34.48
Heart disease	20.69
Other: Kidney disease	10.34
Other: Cholesterol	6.90
Other	27.59
GMVs attended in the last year (n = 12)*	
Range	1–15
Mean (SD)	4 (2.95)
Type of GMV attended (%)	
Homogenous	82.76
Drop-in group medical appointments	17.24
Satisfied with care from family physician (%)	
Always/Usually	79.31
Sometimes/Rarely/Never	20.69

Note: +higher score=more of the concept; ++patients were asked to report all chronic diseases they had been diagnosed with; *there were 17 people who did not answer this question. **In Canada, 'Aboriginal people' is the term used to refer to Indigenous people, including First Nations, Métis and Inuit populations.

Four themes, consistent across homogenous and DIGMA GMVs, emerged. Three themes illustrated how GMVs fostered access to needed health services, expanded opportunities for collaboration and team-based care, and improved patient and provider experiences.

The fourth theme captured providers' challenges in delivering GMVs. The format, processes and proximal outcomes of the GMVs are reported elsewhere (Lavoie et al. 2013).

Fostering access to needed health services

If offered on a regular basis, our data show that GMVs can provide a mechanism for increasing access to PHC for all practice patients. This is a tangible benefit for both providers and patients. Once GMVs had been implemented on a regular basis, providers saw wait-time for appointments decrease because patients were able to obtain some services more quickly (e.g., prescription renewal, follow-up appointments for episodic care).

> " … it's freed up other appointments for patients to see their family doctor, I think its allowed more access for patients to see their doctor for the same type of care so they're not coming in on a Wednesday morning to see the doctor about I don't know a cough, and they realize they haven't had blood work done in six months … so at least they're maintaining their health by having access … getting things done on a more routine basis than worrying about it or forgetting about it." (Provider #5)

As this quote reveals, GMVs increased individual patients' access to needed health services related to their care as well as had the unintentional benefit of increasing access for those who wanted the more traditional one-to-one patient–provider visits. Some providers were able to accept new patients, as the GMVs increased the overall capacity of the practice. Our direct observation of GMVs suggested that these types of visits had to be offered on a routine basis (e.g., every 1–2 months) to influence the overall capacity of the practice to decrease their waiting time to see patients or accept new patients.

GMVs provided increased opportunities for patients to access health promotion activities. Providers often referred to GMVs as a "max-packed" visit where patients obtained care based on their reason for visiting but also benefitted by receiving preventive care (e.g., flu vaccine, B12 injection) and screening. This quote provides an example of how GMVs could increase opportunities for cancer screening:

> " … we were doing diabetic visits, we were also picking up all the other things that you need so, if you happen to need a tetanus shot … a mammogram … go for colon cancer screening, all of that stuff has been picked up so the visit is what we call max-packed, getting the maximum benefit." (Provider #9)

Patients also reported experiencing more comprehensive services, as illustrated in this next quote from a patient attending a GMV focused on smoking cessation:

> "The pharmacist, public health … it was amazing, the information that was given out, which you do not have in a regular doctor's appointment. They [patients] wanted

> to talk to the doctor about quitting smoking … I'm just trying to think of anything negative. I just thought they [GMVs] were wonderful." (Patient #109)

In most cases, GMVs were an efficient use of both patients' and providers' time. Synchronous communication between patients' regular provider, other providers and staff with patients created immediate opportunities for adjustments in treatment plans or follow-up individual visits, and educational opportunities. Providers and staff gained time because they did not travel between rooms, answer the telephone or attend to queries from people in the waiting room. There were a few patients who thought if the GMV had too many people that patients' time was not used appropriately because they needed to listen to too many patients' health concerns.

Expand opportunities for collaboration and team-based care

The provision of GMVs increased collaboration between primary care and public health. For example, prenatal GMVs provided a place where public health, prenatal registry nurses as well as women's regular primary care providers could work together in coordinating care and exchanging information and meet health system requirements such as registration of newborns. GMVs were also a space where the healthcare professionals could identify and work with patients who may have more vulnerabilities such as being low-income, having multiple morbidities or identified as a potentially high-risk pregnancy.

Primary care providers offering GMVs enabled more team-based care with healthcare providers (e.g., public health nurses), the Health Authority and communities (CHR, First Nation reserve nurse):

> "It's [GMVs] kind of a win all around because when you increase your productivity you increase access for patients, your waiting times go down, patients like it, doctors like it, staff likes it and we're better able to meet evidence-based guidelines because there's a team taking care of patients rather than a single provider … it's just worked out really, really well." (Provider #1)

This quote illustrates that delivering some primary care in a group setting can help providers achieve higher quality of care through the use of teamwork, without having to increase the practice's costs by having to hire more staff. Direct observation revealed that team members and patients were working together to find potential solutions for individuals' medically and socially complex care needs.

The GMVs brought healthcare providers together with those working in First Nation communities. CHRs played an important role in identifying patients needing further testing for confirming a diagnosis of diabetes:

> "So what happens is that we have these GMVs that were supposed to be homogenous and now there's just everybody coming and the Community Health

> Representatives decided, oh well, we were doing these blood sugars on people with diabetes and we might as well do them for everyone … we started to find people with diabetes because as they came to the DIGMAs they were diagnosed … " (Provider #29)

This quote also shows that a GMV that was originally designed as a homogenous group turned into a DIGMA-style GMV where patients with any health concern started attending. An unintended benefit of this DIGMA was that providers and patients not previously aware of any diabetic symptoms were able to work with an earlier diagnosis of diabetes. Across all GMVs, patients became actively involved in a team-based care approach. Patients reported learning from other health professionals such as dieticians and their peers. The GMV environment provided opportunities for patients to share their day-to-day management skills and how they prevented illness exacerbations with other attendees.

Improving patient and provider healthcare experiences

Patients attending GMVs reported increased confidence and skills in managing their health within their personal and social context. One patient stated:

> " … you come out of the group feeling much more self-confident … you've got your batteries recharged and you can really go till the next group … it's [GMV] more motivating … you want to do more yourself and rely less on others … but then you always realize there's others out there to help you if needed." (Patient #16)

Patients were motivated by knowing they were "not alone." The GMV structure also helped to neutralize the inherent power imbalance between patient and provider. GMVs were more interactive, allowing patients to gain information from their providers but also to listen and share their day-to-day management strategies with each other. As this patient with diabetes describes, he was upset about going to his first GMV but was surprised at how supportive the physician and other patients were:

> " … I had been diagnosed about a year ago … and not following up with my blood work, on my tests. I just kept trying to wish it away. I was so humiliated when the doctor started talking to everyone around the table, asking what questions we had. I thought, he's [going to] mention that I didn't go for blood work and all this stuff that I wasn't doing, and I was so pissed off. But what happened was it really made me face the problem I was dealing with and so I actually started to smarten up … I saw people who went to the DIGMA very supportive of me, what I was struggling with … I didn't like the idea at first but I'm okay with it now … I got to meet people who were dealing with diabetes, complications that they're having, what they were doing about it." (Patient #112)

This quote also illustrates what providers saw as the clinical impact of GMVs on patients. Providers reported that attending GMVs could lead to improved clinical indicators, such as better HbA1c levels and cholesterol levels. Providers were also satisfied with their practice, as GMVs were an environment to easily deliver comprehensive care for those with complex care needs:

> "I think there's no question about the overall goodness of what we're doing … when you take in patient satisfaction, your satisfaction, and meeting objectives for chronic disease management … this is a far superior way to go." (Provider #2)

Rather than repeating health education messages (e.g., reasons for a high HbA1c) across several individual visits, providers taught to the whole group at once, witnessed reinforcement of key messages by patients sharing their own experience and, in addition, reported more opportunities for in-depth patient–provider interactions. GMVs enabled providers to quickly address the common and predictable parts of a visit (e.g., blood pressure, weight) and focus on the complexity of living with different and often multiple chronic conditions, while benefitting from peer patients providing their personal experience and emotional support.

Structural challenges in delivering GMVs.

Introducing and maintaining GMVs were challenging. A structural challenge for fee-for-service physicians was the financial risk of seeing fewer patients. This challenge was overcome by trying to ensure that between 10 and 15 patients were seen during a group visit. One provider stated:

> "I think even [in] fee-for-service [practices] they come out ahead as well … they can still bill for every person that is in the group. So really if they can get through fifteen people in an hour I don't think they could do that if they were seeing one at a time." (Provider #4)

One common challenge patients experienced, however, with the larger groups was that they felt there was not a lot of time spent on their particular issues.

Additional support was needed to transform everyday practice from a series of individual appointments to delivering care to a group of patients that might include multiple providers. PHC coordinators and the medical office assistants invested time "starting-up" GMVs to identify and coordinate patients who might be inclined to try a GMV. Most providers reported that identification of these patients was time-consuming, particularly for those not using an electronic medical record. Providers also identified patients whom they felt were less suited to participating in GMVs, including those who were hard of hearing, had limited English-speaking skills or cognitive deficits or were uncomfortable in groups. Some patients also identified themselves as not wanting to attend more GMVs because they did not want to talk about their issues, nor hear other patients' issues in a group.

Other key factors for GMVs to be successful were the facilitation skills of the provider leading the group and simply having a large enough space to conduct a group visit. Whether the facilitator was a provider or other staff, he/she was important in creating a safe environment where patients could comfortably share their experience, managing group dynamics, keeping the group relatively focused and ensuring delivery of specific medical services (e.g., review blood test results). Delivering GMVs without an appropriately large room was challenging and for some providers, impossible. In some cases, NH worked in partnership with practices to provide adequate space, for example, in a community centre. Sometimes the alternate location worked better for patients, but coordination was needed to ensure that equipment and patient charts were available.

Discussion

Managed care systems and others have experimented with GMVs for the past two decades but this study is the first of its kind in Canada. The themes we report were consistent across patients and providers and across both homogenous and DIGMA GMVs. Similar to past findings, our analysis showed that GMVs can address physical and psychosocial outcomes (Beck et al. 1997; Clancy et al. 2003a; Kulzer et al. 2007; Sadur et al. 2002; Trento et al. 2004; Wagner et al. 2001) through communication between patients and providers and among patients, increase access to medical care (Bronson and Maxwell 2004) as well as improve patients' ability to manage their health (Clancy et al. 2003b; Coleman et al. 2001).

GMVs provide a window into how PHC can continue to be transformed to be an efficient use of multiple providers' and patients' time as well as an effective mechanism to deliver care. In smaller communities, GMVs can strengthen collaboration between primary care and public health (Valaitis et al. 2012) to address wider social determinants of health. This work sheds light on the process of delivering GMVs with the greatest advantage provided to attendees being in an environment conducive to obtaining resources, skills and confidence in managing their health on a day-to-day basis. While whole patient panels can benefit from the integration of GMVs into practice, those who gain the most have complex medical and social needs. GMVs allow for more in-depth communication (Masley et al. 2000; Noffsinger and Atkins 2001) and a wholistic approach to care (Lavoie et al. 2013; Noffsinger et al. 2003). Research continues to show that GMVs can have clinically and significantly positive effects on patient outcomes, such as decreased blood pressure and HbA1c and increased quality of life (Housden et al. 2013).

The results should be interpreted with caution, since only GMV participants were interviewed, and GMVs may not be suitable for all patients. Data were collected in one health authority. Future work should be informed by practices delivering GMVs in urban areas. More work is needed to understand whether the benefits and challenges are similar by modality of GMV (e.g., homogenous vs. DIGMA) and to examine what the ideal mix of GMVs and individual visits for practices is.

Delivery of GMVs remains complex; resources and support are needed to overcome structural challenges (e.g., appropriate space, coordination of patients, schedules and charts). New skills such as facilitation and attention to group dynamics, working in collaboration with others and patients and the ability to potentially provide a variety of healthcare services to multiple people within a short period are also required. Financial incentives may be required as one approach to off-setting the potential perceived barriers. Practices will need other supports such as strong collaborations with jurisdictions responsible for geographic delivery of health services to obtain tools for more efficient coordination of care. Offering GMVs in primary care could be an opportunity to enhance PHC, strengthening the system particularly for patients with chronic conditions.

Acknowledgements

Special thanks to the providers and patients who took the time to participate in this study. Many thanks to the primary care practices and Northern Health Authority employees and communities, for their help in data collection, and to research assistants, Lily Farris, Benjamin Barer, Brooke Boswell, Anthony Gagne, John Atkinson and Leena Chau.

This study was funded by the Canadian Institutes for Health Research and Northern Health Authority of British Columbia.

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Note

1. In Canada, 'Aboriginal people' is the term used to refer to Indigenous people including First Nations, Métis and Inuit populations.

References

Aggarwal, M. and B. Hutchison. 2012. *Toward a Primary Care Strategy for Canada.* Ottawa, ON: Canadian Working Group for Primary Healthcare Improvement. Retrived October 10, 2015. <http://www.cfhi-fcass.ca/SearchResultsNews/12-12-11/e73966b0-766d-4f62-98c6-39efa71578dd.aspx>.

Baker, G.R. and J.-L. Denis. 2011. *A Comparative Study of Three Transformative Healthcare Systems: Lessons for Canada.* Ottawa, ON: Canadian Health Services Research Foundation.

Beck, A., J. Scott, P. Williams, B. Robertson, D. Jackson, G. Gade and P. Cowan. 1997. "A Randomized Trial of Group Outpatient Visits for Chronically Ill Older HMO Members: The Cooperative Health Care Clinic." *Journal of the American Geriatrics Society* 45(5): 543–49. <http://www.ncbi.nlm.nih.gov/pubmed/9158573>.

Bray, P., D. Thompson, J.D. Wynn, D.M. Cummings and L. Whetstone. 2005. "Confronting Disparities in Diabetes Care: The Clinical Effectiveness of Redesigning Care Management for Minority Patients in Rural Primary Care Practices." *The Journal of Rural Health* 21(4): 317–21.

Brcic, V, M.J. McGregor, J. Kaczorowski, S. Dharamsi and S. Verma. 2012. "Practice and Payment Preferences of Newly Practising Family Physicians in British Columbia." *Canadian Family Physician* 58 (5): e275–e281.

Bronson, D.L. and R.A. Maxwell. 2004. "Shared Medical Appointments: Increasing Patient Access Without Increasing Physician Hours." *Cleveland Clinic Journal of Medicine* 71(5).

Canadian Institute for Health Information (CIHI). 2010. "What Do We Know about Family Physicians Who Accept New Patients?" Ottawa, ON: Canadian Institute for Health Information.

Clancy, D.E., D.W. Cope, K.M. Magruder, P. Huang, K.H. Salter and A.W. Fields. 2003a. "Evaluating Group Visits in an Uninsured or Inadequately Insured Patient Population with Uncontrolled Type 2 Diabetes." *The Diabetes Educator* 29(2): 292–302. <www.ncbi.nlm.nih.gov/pubmed/12728756>.

Clancy, D.E, D.W. Cope, K.M. Magruder, P. Huang and T.E. Wolfman. 2003b. "Evaluating Concordance to American Diabetes Association Standards of Care for Type 2 Diabetes through Group Visits in an Uninsured or Inadequately Insured Patient Population." *Diabetes Care* 26(7): 2032– 06.

Coleman, E., T. Eilersten, A. Kramer, D. Magid, A. Beck and D. Conner. 2001. "Reducing Emergency Visits in Older Adults with Chronic Illness: A Randomized, Controlled Trial of Group Visits." *Effective Clinical Practice* 4(2): 49–57.

Consumer-Purchaser Disclosure Project. 2011. "Ten Criteria for Meaningful and Usable Measures of Performance." San Francisco, CA: Consumer-Purchaser Disclosure Project. Retrieved October 10, 2015. <www.healthcaredisclosure.org/docs/files/CPDP_10_Measure_Criteria.pdf>.

Corbin, J. and A.L. Strauss. 2008. *Basics of Qualitative Research.* Thousand Oaks, CA: Sage.

De Vries, B., C. Darling-Fisher, A.C. Thomas and E.B. Belanger-Shugart. 2008. "Implementation and Outcomes of Group Medical Appointments in an Outpatient Specialty Care Clinic." *Journal of the American Academy of Nurse Practitioners* 20(3): 163–69. doi:10.1111/j.1745-7599.2007.00300.x.

Eisenstat, S.A., K. Ulman, A.L. Siegel and K. Carlson. 2013. "Diabetes Group Visits: Integrated Medical Care and Behavioral Support to Improve Diabetes Care and Outcomes from a Primary Care Perspective." *Current Diabetes Reports* 13 (2): 177–87. doi:10.1007/s11892-012-0349-5.

Glazier, R.H., B.M. Zagorski and J. Rayner. 2012. "Comparison of Primary Care Models in Ontario by Demographics, Case Mix, and Emergency Department Use, 2008/09 to 2009/10." Toronto, ON: Institute for Clinical Evaluative Sciences. Retrieved October 10, 2015. <www.ices.on.ca/file/ICES_Primary Care Models English.pdf>.

Government of Canada. 2010. "Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans". Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, December 2010." Ottawa, ON: Government of Canada. Retrieved October 10, 2015. <www.pre.ethics.gc.ca/eng/resources-ressources/news-nouvelles/nr-cp/2010-12-07/>.

Griffin, B., J. Burkiewicz, L.R. Peppers and T.L. Warholak. 2009. "International Normalized Ration Values in Group versus Individual Appointments in a Pharmacist-Managed Anticoagulation Clinic." *American Journal of Health Systems Pharmacy* 66(13): 1218–23.

Health Canada. 2004. "Community Health Representative On-Line." Health Canada. Retrieved October 10, 2015. <www.hc-sc.gc.ca/hcs-sss/pubs/hisp-psis/community-health-representatives/index-eng.php>.

Housden, L., S.T. Wong and M. Dawes. 2013. "Are Group Medical Visits for Diabetes Effective? A Systematic and Meta-Analytic Review of the Literature." *Canadian Medical Association Journal* Aug (e-pub). doi:10.1503/cmaj.130053.

Howard, B. 2002. "Group Appointments–Just What the Doctor Ordered." *Minnesota Medicine* 85(6): 59.

Hutchison, B., J.F. Levesque, E. Strumpf and N. Coyle. 2011. "Primary Health Care in Canada: Systems in Motion." *Milbank Quarterly* 89(2): 256–88.

Jaber, R., A. Braksmajer and J.S. Trilling. 2006. "Group Visits: A Qualitative Review of Current Research." J*ournal of the American Board of Family Medicine* 19(3): 276–90.

Kirsh, S.R., R.H. Lawrence and D.C. Aron. 2008. "Tailoring an Intervention to the Context and System Redesign Related to the Intervention: A Case Study of Implementing Shared Medical Appointments for Diabetes." *Implementation Science* 3: 34. doi:10.1186/1748-5908-3-34.

Kirsh, S.R., S. Watts, K. Pascuzzi, M.E. O'Day, D. Davidson, G. Strauss et al. 2007. "Shared Medical Appointments Based on the Chronic Care Model: A Quality Improvement Project to Address the Challenges of Patients with Diabetes with High Cardiovascular Risk." *Quality & Safety in Health Care* 16 (5): 349–53. doi:10.1136/qshc.2006.019158.

Kulzer, B., N. Hermanns, H. Reinecker and T. Haak. 2007. "Effects of Self-Management Training in Type 2 Diabetes: A Randomized, Prospective Trial." *Diabetic Medicine: A Journal of the British Diabetic Association* 24 (4): 415–23. doi:10.1111/j.1464-5491.2007.02089.x.

Lavoie, J.G., S.T. Wong, M. Chongo, A.J. Browne, M.L.P. MacLeod and C. Ulrich. 2013. "Group Medical Visits Can Deliver on Patient-Centred Care Objectives: Results from a Qualitative Study." *BMC Health Services Research* 13(1): 155. doi:10.1186/1472-6963-13-155.

Masley, S., J. Sokoloff and C. Hawes. 2000. "Planning Group Visits for High-Risk Patients." *Family Practice Management* 7(6): 33–37.

McLaren, C. 2008. "British Columbia Experiments with Checkups by the Dozen." *Canadian Medical Association Journal* 179(11): 1111–12.

McLeod, L. 2004. "Multitask in the Exam Room: Three Shared Appointment Models Help Physicians See More Patients." *Private Practice Success* 6(8): 2.

Nasmith, L., P. Ballem, R. Baxter, H. Bergman, D. Colin-Thomé, C. Herbert et al. 2010. "Transforming Care for Canadians with Chronic Health Conditions: Put People First, Expect the Best, Manage for Results." Ottawa: The Canadian Academy of Health Sciences. Retrieved October 10, 2015. <http://www.cahs-acss.ca/wp-content/uploads/2011/09/cdm-final-English.pdf>.

National Physician Survey. 2004. "2004 National Physician Survey." Mississauga, ON: National Physician Survey. <http://nationalphysiciansurvey.ca/surveys/2004-survey/>.

Noffsinger, E.B. 2009. "The Drop-In Group Medical Appointment Model: A Revolutionary Access Solution for Follow-Up Visits." In *Running Group Visits in Your Practice.* Dordrecht, New York, NY: Springer.

Noffsinger, E.B. and T.N. Atkins. 2001. "Assessing a Group Medical Appointment Program: A Case Study at Sutter Medical Foundation." *Group Practice Journal* 48(4): 42–49.

Noffsinger, E.B., D.R. Sawyer and J.C. Scott. 2003. "Group Medical Visits: A Glimpse into the Future?" *Patient Care* 37(3): 18–27.

Noffsinger, E.B. and J.C. Scott. 2000. "Understanding Today's Group Visit Models." *The Permanente Journal* 4(4): 99–112.

Ouellet, R., A. Doig, B. Fritz, D. Pugsley, J. Tracey, B Turchen et al. 2011. "Health Care Transformation in Canada: Change That Works, Care That Lasts." Ottawa: Canadian Medical Association (CMA).

Rice, R.L. and C.J. Slater. 1997. "An Analysis of Group versus Individual Child Health Supervision." *Clinical Pediatrics* 36(12): 685.

Riley, S.B. and E.S. Marshall. 2010. "Group Visits in Diabetes Care: A Systematic Review." *The Diabetes Educator* 36(6): 936–44.

Sadur, C.N., N. Moline, M. Costa, D. Michalk, D. Menlowitz, S. Roller et al. 2002. "Diabetes Management in a Health Maintenance Organization: Efficacy of Care Management Using Cluster Visits." *Diabetes Care* 22(12): 2011–17.

San Martin, C., F. Gendron, J.-M. Berthelot and K. Murphy. 2004. *Access to Health Care Services in Canada.* Ottawa: Statistics Canada.

Schillinger, D., M. Handley, F. Wang and H. Hammer. 2009. "Effects of Self-Management Support on Structure, Process, and Outcomes among Vulnerable Patients with Diabetes: A Three-Arm Practical Clinical Trial." *Diabetes Care* 32(4): 559–66.

Schoen, C. and R. Osborn. 2010. "The Commonwealth Fund International Health Policy Survey in Eleven Countries." New York, NY: Commonwealth Fund.

Scott, J.C., D.A. Conner, I. Venhor, G. Gade, M. McKenzie, A.M. Kramer et al. 2004. "Effectiveness of a Group Outpatient Visit Model for Chronically Ill Older Health Maintenance Organization Members: A 2-Year Randomized Trial of the Cooperative Health Care Clinic." *Journal of American Geriatric Society* 52(9): 1463–70.

Starfield, B. 1998. *Primary Care: Balancing Health Needs, Services, and Technology*. New York, NY: Oxford University Press.

Thorne, S. 2008. *Interpretive Description*. Walnut Creek, CA: Left Coast Press.

Thorne, S., S.R. Kirkham and K. O'Flynn-Magee. 2004. "The Analytic Challenge in Interpretive Description." *International Journal of Qualitative Methods* 3(1).

Trento, M., P. Passera, E. Borgo, M. Tomalino, M. Bajardi, A. Brescianini et al. 2005. "A 3-Year Prospective Randomized Controlled Clinical Trial of Group Care in Type 1 Diabetes." *Nutrition, Metabolism, and Cardiovascular Diseases: NMCD* 15(4): 293–301. doi:10.1016/j.numecd.2004.12.005.

Trento, M., P. Passera, E. Borgo, M. Tomalino, M. Bajardi, F. Cavallo et al. 2004. "A 5-Year Randomized Controlled Study of Learning, Problem Solving Ability, and Quality of Life Modifications in People with Type 2 Diabetes Managed by Group Care." *Diabetes Care* 27(3): 670–05.

Valaitis, R., R. Martin-Misener, S.T. Wong, M. MacDonald, D. Meagher-Stewart, P. Austin et al. 2012. "Methods, Strategies and Technologies Used to Conduct a Scoping Literature Review of Collaboration between Primary Care and Public Health." *Primary Health Care Research & Development* 13(3): 219–36. doi:10.1017/S1463423611000594.

Wagner, E.H., L.C. Grothaus, N. Sandhu, M.S. Galvin, M. McGregor, K. Artz et al. 2001. "Chronic Care Clinics for Diabetes in Primary Care: A System-Wide Randomized Trial." *Diabetes Care* 24(4): 695–700.

Walker, T. 2000. "Medical Visits Get Group Mentality Approach: Group Appointments Can Increase Efficiency and Patient and Physician Satisfaction." *Managed Healthcare* 10(10): 10.

Watson, D.E., S. Slade, L. Buske and J. Tepper. 2006. "Intergenerational Differences in Workloads among Primary Care Physicians: A Ten-Year, Population-Based Study." *Health Affairs* (Millwood) 25(6): 1620–28.

Weinger, K. 2003. "Group Medical Appointments in Diabetes Care: Is There a Future?" *Diabetes Spectrum* 16(2): 104–07.

World Health Organization (WHO). 2008a. "Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health." Geneva: World Health Organization. <www.searo.who.int/LinkFiles/SDH_SDH_FinalReport.pdf>.

World Health Organization (WHO). 2008b. "The World Health Report 2008 – Primary Health Care (Now More Than Ever)." Geneva: World Health Organization. <www.who.int/whr/2008/en/>.

Yehle, K.S., L. Sands, P.A. Rhynders and G.D. Newton. 2009. "The Effect of Shared Medical Visits on Knowledge and Self-Care in Patients with Heart Failure: A Pilot Study." *Heart & Lung* 38(1): 25–33.