

HEALTHCARE

POLICY

Politiques de Santé

*Health Services, Management and Policy Research
Services de santé, gestion et recherche de politique*

Volume 10 + Number 1

**Primary Care Reform and Service Use by People with
Serious Mental Illness in Ontario**

LEAH S. STEELE ET AL.

**Optometry Services in Ontario: Supply- and Demand-Side Factors
from 2011 to 2036**

PHILIP S.J. LEONARD, ARTHUR SWEETMAN AND XUE (HELEN) ZHANG

**Inadequate Performance Measures Affecting Practices, Organizations
and Outcomes of Ontario's Family Health Teams**

RACHELLE ASHCROFT

**Media Coverage of Youth Suicides and its Impact on Paediatric
Mental Health Emergency Department Presentations**

STEPHANIE L. LEON ET AL.

*Data Matters + Discussion and Debate + Research Papers
Knowledge Translation, Linkage and Exchange*

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POLICY

Politiques de Santé

Health Services, Management and Policy Research
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Healthcare Policy/Politiques de Santé seeks to bridge the worlds of research and decision-making by presenting research, analysis and information that speak to both audiences. Accordingly, our manuscript review and editorial processes include researchers and decision-makers.

We publish original scholarly and research papers that support health policy development and decision-making in spheres ranging from governance, organization and service delivery to financing, funding and resource allocation. The journal welcomes submissions from researchers across a broad spectrum of disciplines in health sciences, social sciences, management and the humanities and from interdisciplinary research teams. We encourage submissions from decision-makers or researcher–decision-maker collaborations that address knowledge application and exchange.

While *Healthcare Policy/Politiques de Santé* encourages submissions that are theoretically grounded and methodologically innovative, we emphasize applied research rather than theoretical work and methods development. The journal maintains a distinctly Canadian flavour by focusing on Canadian health services and policy issues. We also publish research and analysis involving international comparisons or set in other jurisdictions that are relevant to the Canadian context.

Politiques de Santé/Healthcare Policy cherche à rapprocher le monde de la recherche et celui des décideurs en présentant des travaux de recherche, des analyses et des renseignements qui s'adressent aux deux auditoires. Ainsi donc, nos processus rédactionnel et d'examen des manuscrits font intervenir à la fois des chercheurs et des décideurs.

Nous publions des articles savants et des rapports de recherche qui appuient l'élaboration de politiques et le processus décisionnel dans le domaine de la santé et qui abordent des aspects aussi variés que la gouvernance, l'organisation et la prestation des services, le financement et la répartition des ressources. La revue accueille favorablement les articles rédigés par des chercheurs provenant d'un large éventail de disciplines dans les sciences de la santé, les sciences sociales et la gestion, et par des équipes de recherche interdisciplinaires. Nous invitons également les décideurs ou les membres d'équipes formées de chercheurs et de décideurs à nous envoyer des articles qui traitent de l'échange et de l'application des connaissances.

Bien que *Politiques de Santé/Healthcare Policy* encourage l'envoi d'articles ayant un solide fondement théorique et innovateurs sur le plan méthodologique, nous privilégions la recherche appliquée plutôt que les travaux théoriques et l'élaboration de méthodes. La revue veut maintenir une saveur distinctement canadienne en mettant l'accent sur les questions liées aux services et aux politiques de santé au Canada. Nous publions aussi des travaux de recherche et des analyses présentant des comparaisons internationales qui sont pertinentes pour le contexte canadien.

LETTER TO THE EDITOR

8 RUTH LAVERGNE AND KIMBERLY MCGRAIL

FROM THE EDITOR IN CHIEF

10 Primary Care – First Line of Defence
JENNIFER ZELMER

RESEARCH PAPERS

14  The Untold Story: Examining Ontario’s Community Health Centres’ Initiatives to Address Upstream Determinants of Health
PATRICIA A. COLLINS, SARAH J. RESENDES AND JAMES R. DUNN

31  Primary Care Reform and Service Use by People with Serious Mental Illness in Ontario
LEAH S. STEELE, ANNA DURBIN, ELIZABETH LIN, J. CHARLES VICTOR, JULIE KLEIN-GELTINK, RICHARD H. GLAZIER, BRANDON ZAGORSKI AND ALEXANDER KOPP

46  Gaps in Primary Healthcare Electronic Medical Record Research and Knowledge: Findings of a Pan-Canadian Study
AMANDA L. TERRY, MOIRA STEWART, MARTIN FORTIN, SABRINA T. WONG, MAUREEN KENNEDY, FRED BURGE, RICHARD BIRTWHISTLE, INESE GRAVA-GUBINS, GREG WEBSTER AND AMARDEEP THIND

60  Optometry Services in Ontario: Supply- and Demand-Side Factors from 2011 to 2036
PHILIP S.J. LEONARD, ARTHUR SWEETMAN AND XUE (HELEN) ZHANG

73  Improving Health Equity: The Promising Role of Community Health Workers in Canada
SARA TORRES, RONALD LABONTÉ, DENISE L. SPITZER, CAROLINE ANDREW AND CAROL AMARATUNGA

86  Inadequate Performance Measures Affecting Practices, Organizations and Outcomes of Ontario’s Family Health Teams
RACHELLE ASHCROFT

ONLINE EXCLUSIVES

e97  Media Coverage of Youth Suicides and its Impact on Paediatric Mental Health
Emergency Department Presentations

STEPHANIE L. LEON, PAULA CLOUTIER, MARC-ANDRÉ BÉLAIR AND MARIO CAPPELLI

e108  Mind the Gap: Governance and Health Workforce Outcomes

STEPHANIE E. HASTINGS, SARA MALLINSON, GAIL D. ARMITAGE, KAREN JACKSON
AND ESTHER SUTER



Peer Reviewed

TRIBUNE LIBRE

8 RUTH LAVERGNE ET KIMBERLY MCGRAIL

DE LA RÉDACTRICE EN CHEF

12 Soins de santé primaires – premier moyen de défense
JENNIFER ZELMER

RAPPORTS DE RECHERCHE

14  L'histoire inconnue : examen des initiatives des centres de santé communautaire en Ontario sur la question des déterminants en amont de la santé
PATRICIA A. COLLINS, SARAH J. RESENDES ET JAMES R. DUNN

31  Réforme des soins primaires et utilisation des services chez les usagers souffrant d'un grave problème de santé mentale en Ontario
LEAH S. STEELE, ANNA DURBIN, ELIZABETH LIN, J. CHARLES VICTOR, JULIE KLEIN-GELTINK, RICHARD H. GLAZIER, BRANDON ZAGORSKI ET ALEXANDER KOPP

46  Lacunes dans la recherche et les connaissances sur les dossiers médicaux électroniques dans les soins de santé primaires : conclusions d'une étude pancanadienne
AMANDA L. TERRY, MOIRA STEWART, MARTIN FORTIN, SABRINA T. WONG, MAUREEN KENNEDY, FRED BURGE, RICHARD BIRTWHISTLE, INESE GRAVA-GUBINS, GREG WEBSTER ET AMARDEEP THIND

60  Services d'optométrie en Ontario : facteurs liés à l'offre et facteurs liés à la demande, de 2011 à 2036
PHILIP S.J. LEONARD, ARTHUR SWEETMAN ET XUE (HELEN) ZHANG

73  Amélioration de l'égalité en matière de santé : le rôle prometteur des travailleurs en santé communautaire au Canada
SARA TORRES, RONALD LABONTÉ, DENISE L. SPITZER, CAROLINE ANDREW ET CAROL AMARATUNGA

86  Mesures inadéquates du rendement qui affectent la pratique, l'organisation et les résultats pour les équipes de santé familiale en Ontario
RACHELLE ASHCROFT

EXCLUSIVITÉS EN LIGNE

e98  Couverture médiatique du suicide chez les jeunes et répercussions sur les visites aux services des urgences en santé mentale pédiatrique

STEPHANIE L. LEON, PAULA CLOUTIER, MARC-ANDRÉ BÉLAIR ET MARIO CAPPELLI

e108  Attention à la marche : mécanismes de gouvernance et résultats de la main-d'œuvre en santé

STEPHANIE E. HASTINGS, SARA MALLINSON, GAIL D. ARMITAGE, KAREN JACKSON ET ESTHER SUTER



Examen par les pairs

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Dear Editor,

In the February issue of *Healthcare Policy*, Allin and Grignon (2014) defend the use of amenable (or avoidable) mortality as an indicator of health system effectiveness, in response to our article questioning its use at the level of Canadian health regions.

We agree that amenable mortality is useful as a macro-level “tin-opener” to identify potential gaps in healthcare delivery – as it was originally intended (and as it was described in the CIHI 2012 Health Indicators Report). We also agree that a good indicator of health system effectiveness should be sensitive to outcomes under the control of the health system. While measuring population health is important for some purposes, we also need to know if people are getting timely access to high-quality care. And so, perhaps most importantly, we agree that finding measures that are more sensitive to health system effectiveness than total mortality is a high priority.

Where we differ is in our confidence that amenable mortality clearly separates mortality into causes of death that are sensitive to health system interventions and those that are not. Allin and Grignon illustrate the superiority of a measure that reflects only the component of mortality sensitive to the health system over all-cause mortality. If amenable mortality did just this, it would truly be invaluable, but labeling causes of death as ‘amenable,’ ‘avoidable,’ or ‘treatable’ does not mean these categories have perfect specificity.

CIHI’s expert panel (like other groups that have developed similar indicators) included deaths occurring before age 75 if “potentially avoidable” through prevention or treatment (CIHI 2012). Allin and Grignon cite the example of pneumonia: in the presence of timely, high-quality healthcare, young people should not die from pneumonia. However, pneumonia and other infectious diseases account for only 6% of deaths classified as treatable. Far greater proportions are cancers (42%) and circulatory diseases (18%), where classification based on the effectiveness of available treatments and the contributions of primary, secondary and tertiary prevention is complex. In all cases the age cut is necessarily arbitrary. Of course, many deaths should be avoidable through treatment before age 75, but surely not all (sometimes strokes kill people instantly). Similarly, some cases after 75 should be avoidable as well (a 76-year-old can be saved with appropriate care following a heart attack).

In truth, some fraction of deaths classified as amenable are not in fact sensitive to the health system and some fraction of those not classified as amenable are. We could not measure these fractions directly, but neither has anyone else. This is why we interpret the high degree of correlation between amenable and premature mortality found in our research as suggesting that amenable mortality can only be offering a small improvement over premature mortality.

This relates to our other concern about using amenable mortality. Because of small numbers in many health regions, several years of data have to be pooled to create a stable measure.

This blunts sensitivity to changes over shorter time periods useful for examining policy changes. There is a trade-off then between the potential improvement in amenable vs. premature mortality and the greater sample size offered by the latter.

We do not reject amenable or avoidable mortality for all purposes – we simply question whether it is sensitive enough to provide useful information at a health region level, where differences in effectiveness are likely to be subtle. The point in our paper about Vancouver (Lavergne and McGrail 2013), for example, was that higher than expected amenable mortality rates are likely driven by mortality in the Downtown Eastside. Poor health outcomes there may be traced to cycles of poverty, violence and abuse outside the direct control of the health-care system. Interpreting amenable mortality rates as evidence that health system managers should invest more resources per case, as Allin and Grignon suggest, may divert resources from investment outside the healthcare system that more directly targets underlying causes. What's more, the special nature of this area of Vancouver is already well known by decision-makers, and poor health outcomes are already reflected by other measures.

There is no escaping that however carefully it is defined, amenable mortality is still an indirect measure of health system effectiveness. Finding potential gaps in healthcare delivery, as it was intended, is not the same as assessing timely access to high quality care, as Allin and Grignon argue it can be used. Let's not let more widespread use of amenable mortality distract us from collecting the data we really need in order understand quality and access in healthcare, and more directly measure health system effectiveness.

Sincerely,

Ruth Lavergne and Kimberly McGrail

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Primary Care – First Line of Defence

ON AUGUST 8, 2014, THE WORLD HEALTH ORGANIZATION (WHO) DECLARED the Ebola outbreak in West Africa to be a public health emergency of international concern (WHO 2014b). This step helps to raise global awareness and mobilize resources to support outbreak management, reflecting the seriousness of the situation in affected countries and the strong need for an internationally coordinated response. At the time of the declaration, there were 961 deaths and 1,779 confirmed, probable or suspect cases in Guinea, Liberia, Nigeria and Sierra Leone (WHO 2014a).

Without question, the outbreak is very serious and enormously difficult for the individuals, families and communities affected. A proactive and coordinated response is essential.

While much of the media attention has been directed towards the Ebola virus itself, as Dr. Keiji Fukuda, Assistant Director General for Health Security, pointed out in his remarks at the press briefing held by WHO on the declaration: "... this outbreak really underscores the importance of having strong health systems. It is really the poster child for why those things are important, and they are not theoretical" (WHO 2014c). Likewise, the Ebola outbreak has reinforced the importance of broader social determinants of health, as well as raised questions about equity of access to care.

Related challenges also affect health promotion and the management of many other health problems. More familiar, if less currently newsworthy, diseases have an even larger impact on morbidity and mortality, even in the countries most affected by the Ebola outbreak. For instance, the current outbreak began in Guinea in December 2013 (WHO 2014b). WHO reported an estimated 430 confirmed, probable or suspect deaths related to it as of August 26, 2014 (WHO 2014d). By comparison, the organization estimates that more than 10,000 people died of diarrhoeal diseases, 12,000 of perinatal conditions, 16,000 of malaria, 17,000 of respiratory infections and 19,000 of cardiovascular diseases in 2008, the latest year for which cause-of-death estimates are available (WHO 2011).

Primary healthcare, the focus of this issue of the journal, is often the first port of call for both everyday and rare health problems. Authors cover a range of different policy questions, including efforts to address social determinants of health, new models of care and performance measurement.

In this, our first issue of the tenth volume of *Healthcare Policy / Politiques de Santé*, we are delighted to add their findings to the broad range of research and policy debate that we have

published in the journal's pages over the past ten years. We are planning a number of activities over the coming year to celebrate this special anniversary. Suggestions are welcome – please do not hesitate to get in touch through Twitter @jenzelmer!

JENNIFER ZELMER, BSC, MA, PHD

Editor-in-chief

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Soins de santé primaires – premier moyen de défense

LE 8 AOÛT 2014, L'ORGANISATION MONDIALE DE LA SANTÉ (OMS) DÉCLARAIT QUE la flambée du virus Ebola en Afrique de l'Ouest constituait une situation d'urgence en santé publique de portée internationale (OMS 2014b). Cette démarche permet d'accroître la sensibilisation mondiale et de mobiliser les ressources pour la gestion de la flambée, reflétant ainsi le sérieux de la situation dans les pays affectés et le grand besoin d'une réponse internationale coordonnée. Au moment de la déclaration, il y avait eu 961 décès et 1 779 cas confirmés, probables ou suspects en Guinée, au Liberia, au Nigeria et en Sierra Leone (OMS 2014a).

Il ne fait pas l'ombre d'un doute que cette flambée est très sérieuse et extrêmement difficile pour les individus, les familles et les communautés affectées. Une réponse proactive et coordonnée est essentielle.

Alors que l'attention des médias se dirigeait sur le virus Ebola, le docteur Keiji Fukuda, sous-directeur général en charge de la Sécurité sanitaire, indiquait lors du point de presse organisé par l'OMS au sujet de sa déclaration : « ... cette flambée souligne réellement l'importance d'avoir de solides systèmes de santé. Cela démontre vraiment leur importance, et ce n'est pas un concept théorique » (OMS 2014c). Semblablement, la flambée d'Ebola fait ressortir l'importance des grands déterminants sociaux de la santé, tout en soulevant la question de l'égalité d'accès aux soins.

Des défis similaires se posent également pour la promotion de la santé ou pour la gestion de plusieurs autres problèmes de santé. Plus familières, et moins propices à soulever l'attention médiatique, certaines maladies ont un impact plus grand sur la morbidité et la mortalité, et ce, même dans les pays les plus affectés par la flambée d'Ebola. Par exemple, l'épidémie actuelle a commencé en Guinée en décembre 2013 (OMS 2014b). En date du 26 août 2014, l'OMS estimait à 430 le nombre de décès confirmés, probables ou suspects attribuables au virus (OMS 2014d). À titre comparatif, l'organisation estime que plus de 10 000 personnes ont succombé à cause de maladies diarrhéiques, 12 000 pour des raisons d'ordre périnatal, 16 000 en raison du paludisme, 17 000 suite à des infections respiratoires et 10 000 à cause de maladies cardiovasculaires en 2008, dernière année pour laquelle les estimations des causes de mortalités sont disponibles (OMS 2011).

Les soins de santé primaires, point de mire du présent numéro, constituent souvent le premier port d'escale pour les problèmes de santé quotidiens et pour ceux qui sont plus rares. Les auteurs se penchent sur plusieurs questions liées aux politiques, notamment les efforts

The Untold Story: Examining Ontario's Community Health Centres' Initiatives to Address Upstream Determinants of Health

L'histoire inconnue : examen des initiatives des
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question des déterminants en amont de la santé



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Abstract

Background: Unlike traditional primary care centres, part of the Community Health Centre (CHC) mandate is to address upstream health determinants. In Ontario, CHCs refer to these activities as Community Initiatives (CIs); yet, little is known about how CIs operate. The objective of this study was to examine the scope, resource requirements, partnerships, successes and challenges among selected Ontario CIs.

Methods: We conducted qualitative interviews with 10 CHC staff members representing 11 CIs across Ontario. CIs were identified through an online inventory, recruited by e-mail and interviewed between March and June 2011.

The Untold Story: Examining Ontario's Community Health Centres' Initiatives to Address Upstream Determinants of Health

Results: Most CIs aim to increase community participation, while addressing social isolation and poverty. They draw minimal financial resources from their CHC, and employ highly skilled staff to support implementation. Most enlist support from various partners, and use numerous methods for community engagement. Successes include improved community relations, increased opportunities for education and employment and rewarding partnerships, while insufficient funding was a commonly identified challenge.

Conclusions: Despite minimal attention from researchers and funders, our findings suggest that CIs play key capacity-building roles in vulnerable communities across Ontario, and warrant further investigation.

Résumé

Contexte : Contrairement aux centres de soins primaires traditionnels, une des tâches des centres de santé communautaire (CSC) consiste à traiter la question des déterminants en amont de la santé. En Ontario, les CSC désignent ces activités sous le nom d'initiatives communautaires (IC); cependant, on connaît peu leur fonctionnement. L'objectif de cette étude était d'examiner l'étendue, les besoins en ressources, les partenariats, les succès et les défis présents dans un certain nombre d'IC en Ontario.

Méthode : Nous avons mené des entrevues qualitatives auprès de 10 employés de CSC, représentant 11 IC en Ontario. Les IC ont été répertoriées par un inventaire en ligne puis approchées par courriel; les entrevues ont eu lieu entre mars et juin 2011.

Résultats : La plupart des IC visent l'accroissement de la participation communautaire tout en traitant les questions d'isolement social et de pauvreté. Ils tirent un financement minimal des CSC et font appel à du personnel hautement compétent pour appuyer leur mise en œuvre. La plupart comptent sur le soutien de nombreux partenaires et emploient plusieurs méthodes pour favoriser l'engagement communautaire. Les succès comprennent une amélioration des relations communautaires, de meilleures occasions pour la formation et l'emploi ainsi que des partenariats fructueux, alors que l'insuffisance du financement figure parmi les défis les plus évoqués.

Conclusion : Malgré le peu d'attention qui leur est accordée par les chercheurs et les bailleurs de fonds, nos résultats font voir que les IC jouent un rôle important dans le renforcement des capacités auprès de communautés vulnérables en Ontario. Cela mérite de plus amples recherches.

COMMUNITY HEALTH CENTRES (CHCs) HAVE EXISTED IN NORTH AMERICA FOR nearly half a century. Although their structures and functions have changed over time and vary by jurisdiction, a common element has been their recognition of the influence of upstream, non-clinical factors on the health of people they serve. Recently, there has been a substantial increase in the number of CHCs in Ontario, driven in part by a belief in

the importance of CHCs' activities to address these non-clinical determinants (MOHLTC 2005). And yet, these activities, referred to as Community Initiatives (CIs), have not been systematically studied. Given the importance of the social determinants of health (SDOH) (CSDH 2008), and the growing body of literature demonstrating how these SDOH operate at the neighbourhood level (Collins et al. 2009; CPHI 2006; Lemstra et al. 2006; Macintyre et al. 2008; Mair et al. 2008; Pampalon et al. 2007), there is a critical need to understand this aspect of CHCs' work. This study sought to examine the scope, resource requirements, successes and challenges CHCs face in implementing CIs to address local-level health determinants in Ontario. Our findings offer insights into the less visible work of CHCs in Ontario, and deliver a unique contribution to the CHC literature that has been primarily focused on clinical- and behavioural-based components of CHCs' work.

Origins of Community Health Centres in North America

CHCs in North America tend to operate in lower-income neighbourhoods, and/or serve specific marginalized populations (e.g., lesbian-gay-bisexual-transgender [LGBT], street-involved youth, etc.). Initiated in the 1960s, CHCs in the US were very much influenced by the civil rights struggles at the time (Geiger 2005), and from their inception, were committed to addressing the root causes of ill health in the communities they served (Wright 2005). While CHCs in Canada serve similarly marginalized communities, one of the driving forces for their emergence in this country was that of cost containment (Albrecht 1998). The traditional fee-for-service model for physician payment was placing immense pressures on provincial healthcare systems in the country, which led many provinces to start experimenting with alternative primary care models that utilize lower-cost medical professionals (e.g., nurse practitioners) (Suschnigg 2001), and can often achieve greater integration of care. But, while cost containment was a key driver, many CHCs emerged across Canada out of community-driven advocacy for improved access to comprehensive, primary care services where they were lacking (Suschnigg 2001).

CHCs in Ontario

The Province of Ontario started experimenting with 10 pilot CHCs in the early 1970s, and by 2004, there were 54 communities being served through primary or satellite CHC locations (AOHC 2008). The greatest expansion, however, has taken place in the past decade; following considerable investment from the Provincial Liberal Government (MOHLTC 2005), there are now 101 CHCs across the province, 55 of which are primary locations (MOHLTC 2013). Every CHC in Ontario is funded by their region's Local Health Integration Network (LHIN), and governed by community-elected boards of directors (MOHLTC 2013). As CHCs work to eliminate barriers to primary healthcare for vulnerable populations, they are typically established in neighbourhoods across the province where priority populations are heavily concentrated (AOHC 2008).

Ontario's CHCs commonly strive to deliver services that are comprehensive, accessible, client- and community-centred, interdisciplinary, integrated, community-governed, inclusive of the SDOH and grounded in a community development approach (AOHC 2008). Ontario's CHCs also operate under the CHC Model of Care, which outlines five service areas (AOHC n.d.): primary care, illness prevention, health promotion, community capacity-building and service integration. To date, most research on CHCs has focused on the primary care (Adashi et al. 2010; Dahrouge et al. 2010; Gusmano et al. 2002; Muldoon et al. 2010; Tu et al. 2009), and health promotion and disease prevention (Hills and Mullett 2005; Hogg et al. 2009; Kisely and Chisholm 2009; Pelletier et al. 1997; Richard et al. 2005; Watson-Jarvis et al. 2011) elements of their work.

In contrast to the clinical- and behaviour-based approaches, the community capacity-building component of CHCs' work is delivered through CIs, defined as "a set of activities intended to strengthen the community's capacity to address factors affecting its collective health" (AOHC 2009: 9). For example, the Regent Park CHC's Pathways to Education aims to lower high-school drop-out rates through targeted supports for "academically at-risk" youth and their parents, while the Centretown CHC's Laundry Co-op provides opportunities for employment for low-income families (AOHC 2008). To facilitate their CI-based work, CHCs employ health professionals whose work focuses on upstream health determinants, including health promoters, community health workers and community developers. It is through the work of these individuals that CHCs engage in community capacity-building, and address social justice issues in their communities (Pérez and Martinez 2008).

Study Objectives

The objective of this descriptive study was to document the scope, resource requirements, successes and challenges of implementing CIs in Ontario. This knowledge gap is problematic, given that community capacity-building has greater potential than clinical- or behaviour-based services to generate long-term, sustainable improvements to health for communities as a whole (Hawe 2009). This paper aims to reduce this knowledge gap, by building awareness of the community capacity-building work of Ontario CHCs, and by laying the foundation for evaluative research on the population health impacts of these initiatives.

Methods

Methodology and ethics approval

This study involved semi-structured interviews with CHC employees responsible for the administration and/or delivery of a CI, thereby offering an in-depth understanding of how CIs operate within the CHCs' catchment areas. Ethics approval was granted by the McMaster University Research Ethics Board in December 2010. From June 2010 to March 2011, the research team consulted with the Association of Ontario Health Centres (AOHC), a

not-for-profit group that represents and advocates on behalf of CHCs in Ontario (AOHC 2005), for several purposes: to learn more about how CHCs operate in Ontario, to raise awareness and stimulate interest in the study among staff at Ontario's CHCs and to have access to an online inventory of CIs taking place across Ontario (described below). While feedback was solicited from AOHC staff in the study's early stages to ensure the findings would have relevance to CHCs, all final decisions regarding study design, implementation, analysis and interpretation were made by the research team.

CI sampling frame

Due to financial and human resource constraints, many of Ontario's CHCs are unable to offer comprehensive information about their CIs on their websites, posing a significant barrier to identifying and recruiting relevant CIs for this study. Serendipitously, in December 2010, the AOHC launched a web-based CI inventory tool, to which CHC staff voluntarily inputted data about CIs taking place at their CHC. An evaluative tool that had been developed by the AOHC formed the basis of the data fields in the inventory (Underhill and Jackson 2009), and gathered information about numerous variables ranging from initiative objectives, target populations and health determinants and partnerships. As of March 1, 2011, information for 59 CIs spanning 27 CHCs across Ontario had been inputted into the inventory. Each of the 59 CIs entered in the AOHC inventory by March 1st was considered for in-depth interviews. We chose to review only CIs inputted into this inventory for two key reasons. First, the inventory allowed us to review and compare CIs in a comprehensive and standardized way, which enabled us to overcome the challenge of inconsistency about CIs on CHC websites. And second, the inventory granted us access to contact information for CHC staff who are empowered and motivated to share information about their CIs (and thus more likely to be willing to participate in this study).

CI sampling strategy

Drawing from the World Health Organization's conceptual framework for the SDOH (CSDH 2008: 43), as well as Hawe and Potvin's (2009) definition of a population health intervention (Hawe and Potvin 2009), CIs were deemed eligible for inclusion ($N = 31$) if they: (a) addressed some aspect of social position (i.e., income, occupation, education, gender or ethnicity/race); (b) reduced risk in successive cohorts by adopting upstream approaches and targeting the wider community (e.g., addressing hunger through action on increasing affordable food options); and (c) had potential to be sustainable over the long-term (e.g., building community capacity, fostering professional and leadership skills). Correspondingly, CIs were excluded a priori ($N = 28$) if they did not address social position, if they adopted more clinical or downstream approaches to health promotion and if they were likely to have only a short-term impact in their communities. Thus, excluded CIs were those that focussed on issues such as physical activity, air quality, food banks and meal programs. Additional CIs were excluded post priori ($N = 14$) to minimize burden for participants who had already agreed to discuss another CI at their CHC, as well as to limit redundancy by CI type.

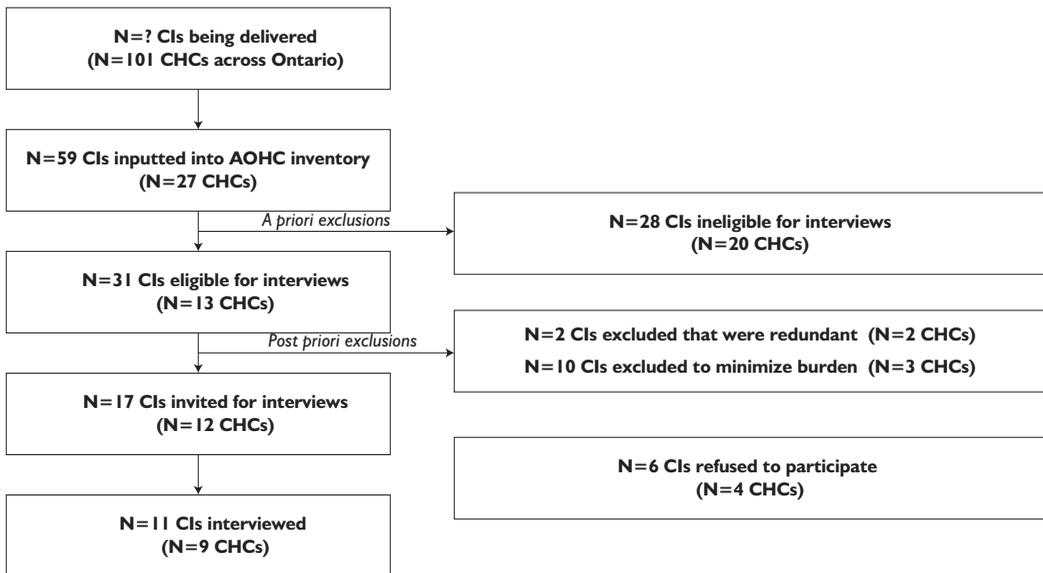
The Untold Story: Examining Ontario's Community Health Centres' Initiatives to Address Upstream Determinants of Health

Based on this strategy (Figure 1), we invited staff members for N = 17 CIs to participate in in-depth interviews. Drawing from staff contact information provided for the CI inventory, each CI staff person was contacted by e-mail and requested to participate in an interview at their convenience. In the recruitment e-mail, each interviewee received a letter of information and consent form, which was signed and returned prior to the interview. We conducted interviews with 10 CI staff representing N = 11 CIs (one staff member was interviewed for two CIs, and we received refusals for N = 6 CIs). Three interviewees chose to keep their identity confidential. Of the remaining eight CIs, five were from the Champlain LHIN, and the remaining three came from other regions across the province (Table 1).

TABLE 1. Descriptive summary of CIs interviewed for study

CHC	CI name (abbreviated name)	Interviewee's position	Short-term objectives	Long-term objectives
South-East Ottawa Community Services	Community-In-Action (CIA)	Community developer	Building social networks; training for civic participation	Creating female leaders for the community
Western Ottawa CRC	Country kitchen (CK)	Community developer	Building capacity and social networks; creating a program at low cost	That the program becomes self-sustaining
Centretown CHC	Enhancing LGBT Cultural Competence in Seniors Sector (ELGBT)	Health promoter	Increase awareness of LGBT issues in seniors sector	Support healthy ageing of older LGBT population
South-East Ottawa Community Services	No Community Left Behind (NCLB)	Community developer	Prevent crime	Address SDOH through an integrated approach
Centretown CHC	Ontario Seniors Action Network (OSAN)	Community developer	Advocate on key issues affecting seniors in the City, fight social isolation	Influence municipal decisions that affect well-being of seniors
Stonegate CHC	Stonegate Food Programme (SFP)	Community health worker	Meet immediate hunger needs, build social networks around food	Build community capacity for local food production
The Youth Centre	Take the Lead (TTL)	Community developer	Increase youth engagement	Improve career potential for at-risk youth
Grand River CHC	Community Garden Project (CGP)	Health promoter	Increase number of community gardens and access to food	Increase food security, environmental sustainability
Suppressed	Anonymous CI 1 (Anon1)	Community development worker	Variable, depends on the issue	Alleviate poverty
Suppressed	Anonymous CI 2 (Anon2)	Health promoter	Increase food access and social cohesion, calm traffic, improve access to informational resources	Improve neighbourhood capacity for change, increase collaboration
Suppressed	Anonymous CI 3 (Anon3)	Community outreach worker	Increase experience with recruitment and training processes	Increase prospects for employment, self-esteem, confidence

FIGURE 1. Sampling Strategy for Interviews with CHC CI Staff



Semi-structured interviews

The semi-structured, in-depth interviews were conducted by telephone from May to June 2011. For each interview, two team members were present; one to conduct the interview, and the other to take notes. The interview guide (see Appendix A at www.longwoods.com/content/23977 for details) was subject to external peer-review, as well as review by the research committee of the AOHC. The length of the interviews varied between 23 and 73 minutes, and covered the following topics: objectives, origins and time frames; human, financial and organizational resource requirements; partnerships and community engagement; and successes and challenges. All interviews were audio-recorded, transcribed verbatim and managed using NVivo® qualitative analysis software. Interview transcripts were analyzed in a two-step process. First, transcripts were coded based on the interview topics described above. Then, convergent and divergent themes within each topic across CIs were identified and captured through exemplary quotes. While additional interviews could have been pursued with the N = 14 CIs that were excluded post priori, the researchers determined that data saturation had been achieved when no new ideas or themes had emerged for any of the interview topics by the end of the 11 interviews.

Results

CI characteristics

A range of CI types were interviewed for this study (Table 1). Three CIs dealt with issues relating to food security; another three trained marginalized groups (i.e., youth, people living in poverty) for civic participation and leadership; two worked towards empowering marginalized groups (i.e., LGBT, seniors) for self-advocacy; one offered job training for hard-to-employ groups; and two adopted a community development framework to stimulate neighbourhood-level capacity for change.

Objectives, origins, time frame and sustainability

There was considerable overlap between CIs in their short-term objectives, which generally focused on increasing engagement in the initiative, developing social networks and building community capacity and combating social isolation within the community (Table 1). The long-term objectives were more variable and unique, and tended to reflect the overarching goals of the initiatives. In terms of origins, roughly half of the CIs were newly developed initiatives, while the other half evolved from an existing initiative or from the broader community.

... it began in early 2008 with just a conversation between the Community Developer ... and then the rural health nurse, ... and we brought that idea into the community and said, hey how about this, and it just turned into a real kind of organic “this is what would make sense to the community” and people would be interested in doing this. (CK)

We also asked interviewees about the time frame and sustainability of the CIs. In terms of time frame, all interviewees had indicated that the CIs would ideally continue on indefinitely, although a few indicated that funding constraints threaten the long-term viability of the initiative. When asked about whether the CI could be self-sustaining without the CHCs' involvement, the responses were mixed. Two CIs were already self-sustaining with minimal CHC involvement, and for another, a self-sustaining initiative seemed a viable prospect:

I'd like to build greater community capacity so that our role can continually just maybe slow down and the community will have the capacity with the leadership and understanding the processes to continue without us. (CGP)

For others, however, the prospect of self-sustainability seemed unlikely for various reasons, including the centrality of the role played by the CHC in ensuring the initiative is operational and sustainable; that CHCs are often heavily invested in their CIs because they are demonstrative of the breadth of CHCs' work and the CHC Model of Care; and because of the immense challenges communities face in developing partnerships, maintaining momentum and accessing resources that are essential to the life of these initiatives.

... the centre can play a very helpful role ... in terms of being an organization that funds can be filtered through ... I think just because of the pressures on everyone's time that ... if there isn't someone really kind of standing behind it and keeping things moving forward, ... the momentum really slows down. (ELGBT)

To be honest, in a world where poverty exists, and where people's capacities are reduced because of systemic barriers to access to jobs, food security, access to education, as long as those types of barriers exist, it's going to pose challenges for the

neighbourhood to completely fly with it on its own, over a long period of time
That's a goal, but there are systemic barriers to that happening. (Anon2)

Organizational and staff requirements

Six of the CIs were staffed by one person, who tended to be a community developer, community outreach worker or health promoter. The remaining five initiatives were staffed by two to three people (e.g., one coordinating the CI, and another overseeing its management, promotions and budget), and these CIs often had external funding. Interviewees identified a range of knowledge and skills necessary to complete their work, including willingness to connect with the community and build partnerships; community needs/assets assessment; project management; budget management and allocation; volunteer management; facilitation, training and mentorship; communications, marketing and event planning and management; community engagement and conflict resolution; research and proposal writing; knowledge and understanding of the SDOH; familiarity of the political landscape of the city and/or province; and awareness of the strengths and needs of the target group (e.g., LGBT seniors, low-income rural dwellers, female immigrants).

Interviewees felt their CHC facilitated development of knowledge and skills necessary for their work through, for instance, budgetary commitments for CI staff to attend conferences and workshops, and to participate in professional development training programs. One participant mentioned her involvement in a local network of community developers, while another stressed the importance of CHCs allowing CI staff to sit on local committees to build partnerships with outside agencies. Mentorship from within the CHC and from the AOHC was also identified as a key source of professional development.

Eight CIs had external sources of funding to support their initiative (previously, current or ongoing). The local municipal government was a common source for external grant support, while the United Way and corporate funders were also identified as key sources. Aside from salary support, CHCs' financial commitments to CIs were limited to in-kind contributions (e.g., printing and mail-outs, food for events) support and involvement from senior management to ensure CHC commitment was viewed as critical to the CI's sustainability.

Partnerships and community engagement

With the exception of one, all CIs engaged multiple partners (Table 2). Partners ranged from other CHCs, municipal government staff and councillors, police services, public health units, universities, churches and schools, youth organizations, advocacy groups, community associations and local media outlets. As one interviewee explained, developing a partnership with an existing mobilized group helped to cement the CHC's role in the community as something more than a primary care centre:

They actually came to the Community Health Centre and sought us as an ally ... before we really had an identity within the community at the time ... And because of

my training and education in health promotion I saw this as a very key project to take on within our community and to establish our CHC as really looking at community health And so I was looking at that very strategically, saying ... we could really be attaching ourselves to a project ... and creating lasting partnerships through this garden initiative that will benefit the community and also us in establishing ourselves as more than just primary healthcare. (CGP)

In terms of raising awareness and engaging community members, most used a variety of written materials, including flyers, newsletters, sign-up sheets, brochures, posters and display boards (Table 2). Traditional media sources, such as local newspapers and radio stations, were also heavily used to promote the CI, as were strategies like e-mail distribution lists, websites, Facebook pages and photovoice. Finally, face-to-face approaches including conferences and workshops, community events, outreach at schools and informal gatherings were all mentioned as fundamental components of raising awareness and engaging the community.

Successes and challenges

When asked about CI successes in general (Table 2), interviewees' responses focused on how the CI has facilitated establishment of social networks and relationships in the community, as well as uptake of the CI within the community (e.g., increased LGBT visibility, meeting immediate hunger needs, volunteers becoming employed). In terms of CIs' successes in addressing social position, responses ranged from improvements to household budgets, increased opportunities for post-secondary education and/or employment and increased awareness among service providers and politicians of challenges facing marginalized groups.

... we've made a conscious choice to work with active baby-boomers ... who have more resources and are highly skilled with a longer term goal of gaining benefits and opening doors for people who have less resources and who are more marginalized ... (ELGBT)

So they are owning something in which a lot of times we strip them of dignity and ownership of anything when we relegate them to social housing and [social assistance] and so I think in that regard, it's the things that are hard to measure and the things that are not tangible that are actually going to increase their socioeconomic environment ... (CGP)

Interviewees generally viewed all partnerships to be successful. For three CIs, partnerships with the local municipality were considered most beneficial in terms of offering access to City staff and resources, as well as lending legitimacy to the CI within the wider community.

TABLE 2. Partnerships, community engagement strategies, success and challenges for CIs

CI	Partnerships	Community engagement	Success	Challenges
CIA	Other CHCs, community resource centres, local initiative	Flyers to community housing coordinators, publicize at tenant association meetings	One participant started attending university	Inadequate funding
CK	Public health unit, family health team, community resource centre, city council, municipal committees, local churches, food producers, seniors groups	Existing connections, local media, newsletters, flyers, website, promotional materials to city council, informational video clip	Raised awareness and skills around budget-conscious food shopping and meal preparation	Reaching low-income households, lack of anonymity in rural setting
ELGBT	Municipal government staff, LGBT coalitions and networks, support groups, LGBT service providers	Existing connections, workshops, events at people's homes, local LGBT newspaper, poster, e-mail lists, Facebook page, website	Engaging LGBT baby-boomers because of their experience in advocating for rights that benefit all	Inadequate funding, competing priorities between partners, high staff turnover, community member burnout
NCLB	Law enforcement, youth organizations, community housing, recreation groups, mental health association	Community dinner, flyers	Bursary program for youth to attend post-secondary	Inadequate funding
OSAN	No partners	Booth in shopping malls, photovoice, website	Advocate for social housing for low-income seniors	Member recruitment and retention
SFP	Local food advocacy group, food bank, local church, public library, local restaurants, local schools	Local media, workshops, schools, sign-up sheets at farmers' market, newsletter, e-mails	Learning how to shop and cook food on a budget	Farmer retention, lack of partner cooperation
TTL	Local churches, community development council of Durham, John Howard Society, municipal government, local YMCA	Flyer, mentor packages to participating agencies, website, information sessions, talent show, local newspaper	Targeting under-served and at-risk youth to develop leadership skills and employment prospects	Relationship-building, competing priorities between partners
CGP	Aboriginal housing group, other CHC, mental health agency, children's services, municipal government staff, local university	Displays at community events, brochures, Facebook page, press releases, workshops, ads in local media	Marginalized individuals develop leadership skills that could help to secure employment	Unsustainable ownership model of initiative
Anon1	Local church, local social planning council	Existing connections, people with an interest just step up	Raising awareness of poverty in city among politicians and public	Competing priorities between partners
Anon2	Police services, landlords, schools, community associations, city councillor, boys and girls club, local mall, public health unit	Newsletter, community dinner, outreach with landlord and local schools, community foundation report profile	Increasing food security, employment opportunities	Neighbourhood diversity, inadequate resources
Anon3	Local newspaper, non-profit volunteer agency, education program at local university	Website, local newspaper, volunteer agency, flyers, recruit within CHC	Volunteering exposes them to all programs and services at the CHC	Volunteer recruitment

Common challenges to implementing CIs were identified, including inadequate funding, recruitment and retention of CI participants and competing priorities and levels of investment between partners (Table 2). While most interviewees had no challenging partnerships, a few cited conflicts with their partners, such as a lack of credibility within the community, personality conflicts, competing priorities between agencies and discrimination from partner agency members. Community opposition to the CI was not generally encountered, although two interviewees had cited a lack of understanding about the CI among the public as the root of some opposition. While most interviewees indicated that the funding was insufficient, one interviewee indicated that only a modest boost would be necessary, and a couple indicated that current levels were sufficient:

... it's not so much money as it is finding a way to work together in a sustainable way.
(OSAN)

More funding would probably help in terms of being able to offer more workshops in the community ... but we definitely manage with the funding we have ... (Anon1)

Discussion

The CIs described in this paper addressed multiple SDOH, many of which relate directly to social position (e.g., education, income, culture and social inclusion). And, while the CIs' long-term objectives reflected unique characteristics, the CIs' short-term objectives were generally focused on building social networks and recruiting participants. Given the importance of community support in ensuring the long-term viability of such initiatives (Lovell et al. 2011), and the well-established links between poverty and health, the findings from this study suggest that Ontario's CHCs have some capacity to reduce health inequities in the communities they serve. However, based on inventory data (results not shown), relatively few CIs across Ontario target conditions of unemployment, underemployment and low literacy – conditions that are commensurate with the education, occupation and income components of social position (CSDH 2008), and operate upstream of poverty. CHCs' limited work on these socioeconomic conditions may reflect the limitations of area-based initiatives (Thomson 2008), and suggests that some health determinants are more amenable to area-based intervention than others. The lack of emphasis paid to underemployment and unemployment may also be explained by the prevailing neoliberal environment within which these CHCs operate (Gore and Kothari 2012), and the difficulty of advocating for these issues within this climate (Navarro 1998).

The resource requirements of CIs from their host CHCs were minimal. Most operate on a very limited budget, and are typically staffed by one person for less than 20 hours per week. While CIs involve small budgets and limited staff, the individuals who work on these initiatives appear to be incredibly versatile, possessing knowledge and skills ranging from project management, research and grant writing, community engagement, partnership-building and promotional skills. Despite budgetary constraints, it is noteworthy that nearly every CHC

had no foreseeable plan to relinquish its role in the initiative over the long-term, which may be partly attributable to the community development orientation of the CHC Model of Care (AOHC n.d.).

The CIs generally engaged multiple, locally based partner agencies to assist with launching and operating the CI. The breadth of partnerships, and the limited budgetary commitment from CHCs, suggests that the burden of delivering these initiatives is really borne by the community-at-large. Thus, the mobilization and capacity of the wider community to implement these initiatives appears to be quite high, and is likely reinforced by the strong commitments of CI staff to engage community partners. Yet, despite efforts to build these social networks, recruitment and retention of partners and community members was reported as a key challenge with the CIs. This challenge may also help to explain the reluctance of CHCs to give up the leadership reins of CIs, especially if there is no other agency in the community that is willing to take a leadership role to sustain the initiative.

In terms of potential to improve the social position of area residents, many of the CIs reported successes through increased opportunities for higher education, stable employment, increased income and recognition of rights for marginalized groups. These opportunities may present for single individuals or small groups at a time, but if sustained over the long-term, such changes could facilitate fundamental improvements to health and well-being of the wider community and successive generations (Hawe 2009). Given the perpetual challenge of inadequate funding for these initiatives, initiating and sustaining CIs requires both long-term commitments from their parent CHCs, as well as recognition from the LHINs of the role these initiatives play in improving population health.

Limitations

This study only examined Ontario-based CHCs, and thus may have limited generalizability to jurisdictions outside of Ontario. However, while the CHC Model of Care is based on Ontario's CHCs, the philosophy behind it is comparable to those guiding CHCs across Canada (CACHCA 2011), as well as in the US (Shea et al. 2012). We also had a small pool of interviewees (n = 10 individuals for 11 CIs), which was pre-constrained by the scope of the CIs that had been inputted into the AOHC inventory. Social desirability bias may also be present, if participants used the interview as an opportunity to tout their work, rather than offer more critical input. While interviews with individuals external to the CHCs may have generated more critical feedback (Weiss 1998), conversations with AOHC staff (Misra 2010) and our own interview findings suggested a high degree of popularity of these initiatives within the communities they serve, which we expect would have made it difficult to recruit individuals external to the CHC to discuss the CIs' weaknesses for fear of putting them at risk. Finally, this descriptive study sought only to document key characteristics of CIs being delivered by CHCs across Ontario, and to make informed judgments about the potential for these initiatives to reduce health inequities. Determining whether these initiatives are reducing health inequities requires intensive longitudinal study, and represents a key area for future research.

Conclusions

While CHCs in Ontario are critical to providing vulnerable communities access to primary care, they also engage in broader initiatives that venture well beyond the health sector, and have the greatest potential for reducing health inequities at the local level. This study found that CHCs in Ontario implement a broad range of CIs that operate with dynamic staff, engage multiple partner agencies, use innovative strategies to recruit participants and have potential to effect change in the social positions of area residents. They draw minimal resources from their CHCs, yet inadequate funding does pose a threat to the long-term sustainability of CIs, and in turn, their capacity for success. While much of the work to address the SDOH needs to happen outside the health sector and at higher levels of government, our study illustrates the instrumental role CIs actively play in addressing the upstream SDOH at the local level in Ontario. Future evaluative research is needed to establish whether, and quantify the extent to which, these activities are reducing health inequities in the communities they serve.

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Primary Care Reform and Service Use by People with Serious Mental Illness in Ontario

Réforme des soins primaires et utilisation des services chez les usagers souffrant d'un grave problème de santé mentale en Ontario



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Abstract

Purpose: To examine service use by adults with serious mental illness (SMI) rostered in new primary care models: enhanced fee-for-service (FFS), blended-capitation (CAP) and team-based capitation (TBC) models with and without mental health workers (MHW) in Ontario.

Methods: This cross-sectional study used administrative health service databases to compare use of mental health and general health services among persons with SMI enrolled in new models (n = 125,233).

Results: Relative to persons rostered in enhanced FFS, those in CAP and TBC had fewer mental health primary care visits (adjusted rate ratios and 95% confidence limits: CAP: 0.77 [0.74, 0.81]; TBC with MHW: 0.72 [0.68, 0.76]; TBC with no MHW: 0.81 [0.72, 0.93]). Compared to patients in enhanced FFS, those in TBC models also had more mental health hospital admissions (TBC with MHW: 1.12 [1.05, 1.20]; TBC with no MHW: 1.22 [1.05, 1.41]). Patterns of use of general services were similar.

Conclusion: Further attention to financial incentives in capitation that influence care of persons with SMI is necessary to determine if they are aligned with aims of primary care reform.

Résumé

Objet : Cette étude portait sur l'utilisation des services par des adultes aux prises avec un grave problème de santé mentale (GPSM) dans le contexte des nouveaux modèles de prestation de soins primaires : paiement à l'acte amélioré (PA), capitation pondérée (CAP) et capitation fondée sur le nombre d'effectifs (CNE) avec ou sans travailleurs en santé mentale (TSM) en Ontario.

Méthode : Cette étude transversale a fait appel aux bases de données administratives des services de santé afin de comparer l'utilisation des services de santé mentale et des services généraux chez les personnes aux prises avec un GPSM dans le contexte des nouveaux modèles (n=125 233).

Résultats : Comparé aux personnes dans le modèle du PA amélioré, ceux des modèles de CAP et de CNE ont fait moins de consultations de premiers soins pour des questions de santé mentale (ratios des taux ajustés et limites de confiance à 95 % : CAP : 0,77 [0,74, 0,81]; CNE avec TSM : 0,72 [0,68, 0,76]; CNE sans TSM : 0,81 [0,72, 0,93]). Comparativement aux patients dans le modèle du PA amélioré, ceux des modèles de CNE ont connu plus d'admissions à l'hôpital pour des raisons de santé mentale (CNE avec TSM : 1,12 [1,05, 1,20]; CNE sans TSM : 1,22 [1,05, 1,41]). Les schémas d'utilisation pour les services généraux étaient similaires.

Conclusion : Dans le modèle par capitation, il faudra porter plus d'attention aux incitatifs financiers qui influencent les soins apportés aux personnes souffrant d'un GPSM afin de déterminer s'ils sont conformes aux objectifs visés par la réforme des soins primaires.

PERSONS WITH SERIOUS MENTAL ILLNESS (SMI), SUCH AS PSYCHOSIS, OFTEN experience symptoms that are disabling, are persistent and require continual monitoring and treatment (Gold et al. 2008; Institute of Psychiatry 2007: August). These patients are also more likely than others to have comorbid disorders, such as cardiovascular disease and diabetes (Gold et al. 2008; Narrow et al. 2000; Oud et al. 2010; Samele et al. 2007; Thornicroft 2011). However, despite higher levels of need, there is evidence that persons with psychotic disorders are roughly half as likely as others to have a primary care physician (PCP), and up to seven times more likely to report difficulties in accessing care (Bradford et al. 2008; Lawrence and Kisely 2010). Even so, PCPs remain their most commonly contacted healthcare providers, and are often the only providers contacted for mental healthcare (Lin et al. 1996; Regier et al. 1993; Vasiliadis et al. 2007). In the US and Canada, PCPs prescribe between 60% and 80% of psychotropic medications (Lavoie and Fleet 2002; Shearer et al. 2012).

Models of stepped care dictate that primary care services should be accessed before other types of mental healthcare, as primary care is cheaper and less intensive than more specialized care (National Institute for Health and Clinical Excellence 2012). Over the past decade, the Government of Ontario, Canada, has embarked on a major restructuring of primary care to increase access, improve quality and manage costs (Deber 2008; Glazier and Redelmeier 2010). This restructuring resulted in three major types of primary care models: enhanced fee-for-service (FFS), capitation-based (CAP) and team-based capitation (TBC), which all include enrolling patients, 24/7 access to care and enhanced information technology (Glazier et al. 2009; Glazier and Redelmeier 2010; Rosser et al. 2010).

The new models offer insured physician-provided services, as is required in Ontario where medically necessary services, delivered by physicians or in hospitals, are required to be covered for “insured persons” (residents) (Durbin et al. 2013). However, TBC models also offer insured non-physician-provided outpatient services, such as those delivered by nurse practitioners, dietitians, or mental health workers (MHWs). MHWs include persons with Bachelor of Arts, Bachelor of Social Work or Master of Social Work degrees who provide mental health counselling. The integration of non-physician providers into TBC models creates new opportunities for service coordination, especially because the same team of providers treats physical and mental health problems (Durbin et al. 2013). Coordinated care is particularly important for people with SMI who often have complex illness profiles, with high rates of substance use disorders as well as physical illness and receive inadequate physical healthcare (Durbin et al. 2013).

These three primary care models also differ in physician reimbursement and economic incentives for providers (Deber et al. 2008; Goldberg 1999; Schlesinger and Mechanic 1993). As FFS models reimburse physicians per service delivered (claims for each provided service are paid in full), there is incentive to provide more services and/or to preferentially provide more lucrative services (Deber et al. 2008; Kralj and Kantarevic 2013). Under capitation, the PCP receives a fixed payment per enrolled patient for delivery of required care. In theory,

this encourages early intervention and collaboration with other providers (Durbin et al. 2013). However, unless compensation is adjusted for patient morbidity, high-needs patients represent a larger financial risk to PCPs. In Ontario, the only adjustments are for age and sex (Glazier et al. 2012). This could contribute to the exclusion of high-needs patients from new primary care models, as they use more physician time (Gosden et al. 2001; Hellinger, 1996; Petersen et al. 2006; Rothbard et al. 2004). In these capitation models, physicians also receive a portion of the FFS amount for each service provided. During the study period, 10% and later 15% of FFS claims were paid to these PCPs.

US studies that compared care delivered to persons with SMI in different primary care models have shown that capitation is associated with increased or decreased use of outpatient care (Busch et al. 2004; Chou et al. 2005; Leff et al. 2005; Morrissey et al. 2002) and fewer mental health hospital admissions (Bloom et al. 2002; Leff et al. 2005; Rothbard et al. 2004; Warner and Huxley 1998). Many of those studies, however, are dated, and many were based on unrepresentative samples.

Primary care reform in Ontario provides a unique opportunity to explore broad system change and utilization of health services by groups of interest in a single-payer healthcare system with universal health insurance. In this study, we examine the association between the type of primary care model and health service utilization among patients with SMI.

Due to the differences in remuneration across models, we tested two hypotheses. The first is that there would be more outpatient service use in enhanced FFS models in TBC models, compared to CAP models. The second was that there would be less in-patient service use in enhanced FFS and TBC models, compared to CAP models.

Methods

Study design

This cross-sectional study used administrative claims data to examine rostered patients with psychotic or bipolar disorders in different primary care models in Ontario. Data were accessed through a comprehensive research agreement with the Ontario Ministry of Health and Long-Term Care (MOHLTC). This study was conducted using datasets that were linked using unique, encoded identifiers and analyzed at the Institute for Clinical Evaluative Sciences (ICES). The study was approved by the Research Ethics Board of Sunnybrook Health Sciences Centre in Toronto, Ontario.

Study population

The pool from which the sample was drawn included patients with at least one diagnostic billing code for psychotic or bipolar disorders over the two-year period that preceded March 31, 2009 (see Appendix A for codes: www.longwoods.com/content/23926), who were enrolled to a PCP in a model type under study (enhanced FFS, CAP and TBC model). Additional inclusion

criteria were being between 18 and 105 years on March 31, 2009, and having at least one out-patient healthcare contact between April 1, 2009 and March 31, 2011. To be included, PCPs had to be in a model type under study on March 31, 2011. We excluded physicians in other remuneration models (less than 5%).

Measures and data sources

PRIMARY CARE MODELS

Primary care model types were enhanced FFS, CAP and TBC models. The latter was divided into three groups: with MHW, without MHW and with MHW unknown. However, given the small size of the TBC models with MHW unknown group (0.7% of patients in the study sample), we did not report results for them.

PATIENT CHARACTERISTICS

We obtained patient age, sex and postal code from Ontario's Registered Persons Database. We also used this database to identify recent registrants as a proxy for recent immigrants. Recent registrants are non-newborn individuals who received new healthcare coverage in Ontario within the past 10 years. Recent registration has been shown to be a good proxy for recent immigration to Ontario (Ray et al. 2007). We used Statistics Canada's Postal Code Conversion File to link patients' postal codes to census data. Census subdivisions of patient residence in 2006 were used to assign a rurality score to patients according to the Ontario Medical Association's 2008 Rurality Index of Ontario (Kralj 2009). We assigned household income quintile by linking postal codes with 2006 census dissemination areas after taking into account average household size and community of residence.

We used the Johns Hopkins Adjusted Clinical Groups Case-Mix System to adjust for the presence of co-morbidities. This system uses administrative diagnostic codes to describe and predict a patient's use of healthcare resources (The Johns Hopkins ACG Case-Mix System 2008). The system allows the calculation of aggregated diagnosis groups (ADGs) ranging from 0 (no diagnosis) to 10 or more (at least 10 distinct diagnosis groups). We also calculated resource utilization bands (RUBs), which were used to categorize patients based on their expected use of healthcare resources. They range from 0 (lowest expected healthcare costs) to 5 (highest expected healthcare costs). We used the validated Ontario Diabetes Database to identify study patients who had incident or prevalent diabetes mellitus (Hux et al. 2002). Hypertension (Tu et al. 2007) and congestive heart failure (Schultz et al. 2013) were also identified using validated diagnostic code algorithms. Patient enrolment and the presence of MHWs in the models were determined using Client Agency Program Enrolment tables and data provided directly to the research team from the MOHLTC. PCP characteristics were assigned using data from the MOHLTC's Corporate Physician Database.

OUTCOMES

Outcomes assessed over a two-year observation period (April 1, 2009 to March 31, 2011) were mental health and general visits to PCPs, visits to psychiatrists, mental health emergency department (ED) visits, general ED visits, mental health hospital admissions, general hospital admissions and average lengths of stay for each hospitalization. Office visits to physicians were categorized by type of provider visited (“00” for general practitioner/family physician; “19” for psychiatrist) according to the Ontario Health Insurance Plan (OHIP) specialty code. Mental health visits were identified using ICD-9 diagnostic codes (see Appendix B online at www.longwoods.com/content/23926). This method for identifying mental health visits to PCPs had a sensitivity of 81% and a specificity of 97%. This method appears to be highly specific for identifying visits for psychotic or bipolar diagnoses (99.4%), although less sensitive (55.3%) (Steele 2003). ED visits were determined using the National Ambulatory Care Reporting System. Mental health and general admissions and lengths of stay were determined from the Canadian Institute for Health Information’s Discharge Abstract Database and the Ontario Mental Health Reporting System. Mental health ED visits and hospital admissions were defined as visits/admissions for which the main reason for presentation or admission was related to any mental health disorder (see Appendix B online at www.longwoods.com/content/23926).

DATA ANALYSIS

We investigated the characteristics of patients and physicians as of March 31, 2011 (the end of the study period), by model type. We also examined unadjusted mental health service use and general health service use across model types from April 1, 2009 to March 31, 2011. Next we examined these relationships in negative binomial regression models. Each model was adjusted for patient factors and physician factors. Patient factors were age group, sex, rurality, recent registrants, ADGs, RUBs, diabetes, hypertension, congestive heart failure and income quintile. Physician factors adjusted for in this analysis were gender, years since graduation, Canadian or foreign medical graduate and practice size (number of enrolled patients). First, we ran negative binomial models that did not account for clustering of patients within physician practices and physicians within practice groups. Subsequently, we re-ran the same models with generalized estimating equations to account for the clustering (Hardin and Hilbe 2003). Estimates changed very little, so we reported estimates for clustered models (see Appendix C for estimates for full models: www.longwoods.com/content/23926).

Results

Patient and physician descriptive characteristics

A total of 7,344,398 patients were in the primary care models under study in Ontario from April 1, 2007 to March 31, 2009. Among them, 125,233 enrolled patients (1.7%) had billings for psychotic or bipolar disorders. Percentages of patients with these billings were similar across primary care models (enhanced FFS: 1.7%; CAP: 1.6%; TBC: 1.8%). As of March 31, 2011, patients with psychotic-bipolar disorder in enhanced FFS models had higher ADG

and RUB scores, and were more likely to be immigrants, have diabetes and hypertension and to live in urban areas with lower-income quintiles (see Table 1 at www.longwoods.com/content/23926).

Characteristics of the 6,652 physicians in Ontario in enhanced FFS, CAP or TBC models from April 1, 2007 to March 31, 2009, are presented in Table 1. The characteristics are presented at March 31, 2011. In comparison to PCPs in other models, those in enhanced FFS had lower numbers of enrolled patients per physician, were less likely to have received their medical education in Canada and were more likely to have been in practice for more years.

Bivariate analysis

Compared to patients in enhanced FFS models, those in CAP and TBC had fewer office visits to PCPs, for both mental health and general reasons, and to psychiatrists. The number of mental health ED visits was highest among patients in enhanced FFS models and lower in both CAP models. However, the number of general ED visits was lowest in enhanced FFS models and highest in both TBC models. For both mental health and general admission, the number of hospital admissions was greatest in TBC models with no MHWs – they were lower in enhanced FFS models and lowest in CAP models. Lengths of stay were longest in both kinds of TBC models, followed by enhanced FFS models and CAP models (see Table 2 at www.longwoods.com/content/23926).

Adjusted results

Compared to patients in enhanced FFS models, patients in CAP and TBC with and without MHW had fewer mental health and fewer general office visits to PCPs (Figure 1). Similarly, patients in both TBC models had fewer psychiatrist visits, but CAP patients had more visits to psychiatrists. Compared to patients in enhanced FFS, only individuals in TBC models with MHW had more emergency mental health visits (Figure 2). The numbers of general ED visits were higher in all capitation models, compared to enhanced FFS models.

Patients in both TBC models had more mental health and general hospital admissions than patients in enhanced FFS models (Figure 3). However, patients in CAP models only had significantly more general admissions than enhanced FFS patients; there were no significant differences in mental health admissions between CAP and enhanced FFS models. Average lengths of stay were longer for patients in TBC models with and without MHW compared to enhanced FFS models (Figure 3). There were no significant differences between patients in CAP and enhanced FFS.

For patients, male sex was associated with increases in all outcomes except for PCP visits (female sex was associated with more visits) and psychiatry visits (no relationship). Lower income was associated with an increase in all hospital outcomes. Urban residence was related to greater office visits and longer hospital admissions. Immigrant status was associated with increased PCP visits for general reasons but decreased mental health office visits to PCPs and psychiatrists. Immigrant status was also associated with decreased hospital outcomes.

FIGURE 1. Rate ratios and confidence limits[§] for types of office use by rostered adults with psychosis or bipolar disorder in capitation based primary care models compared to enhanced fee for service models in Ontario

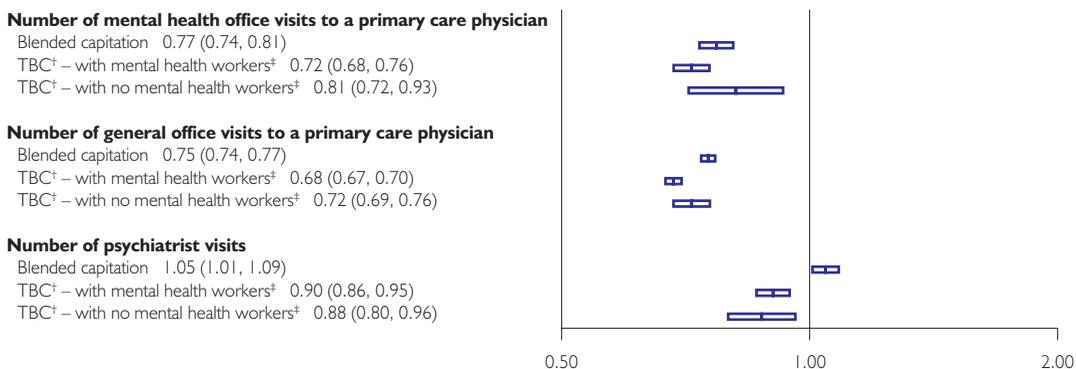


FIGURE 2. Rate ratios and confidence limits[§] for emergency department use by rostered adults with psychotic or bipolar disorders in capitation based primary care models compared to enhanced fee for service models in Ontario

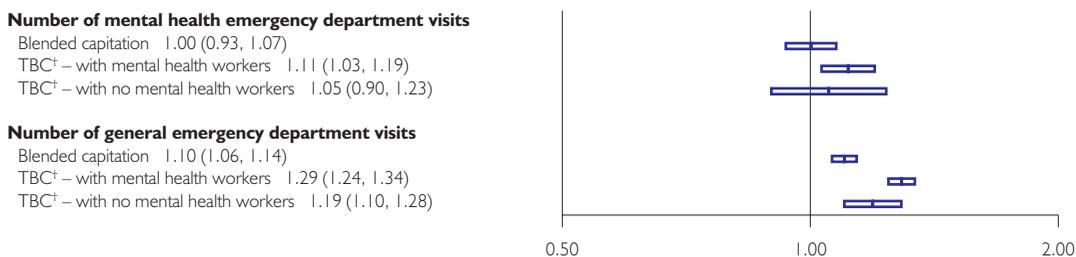
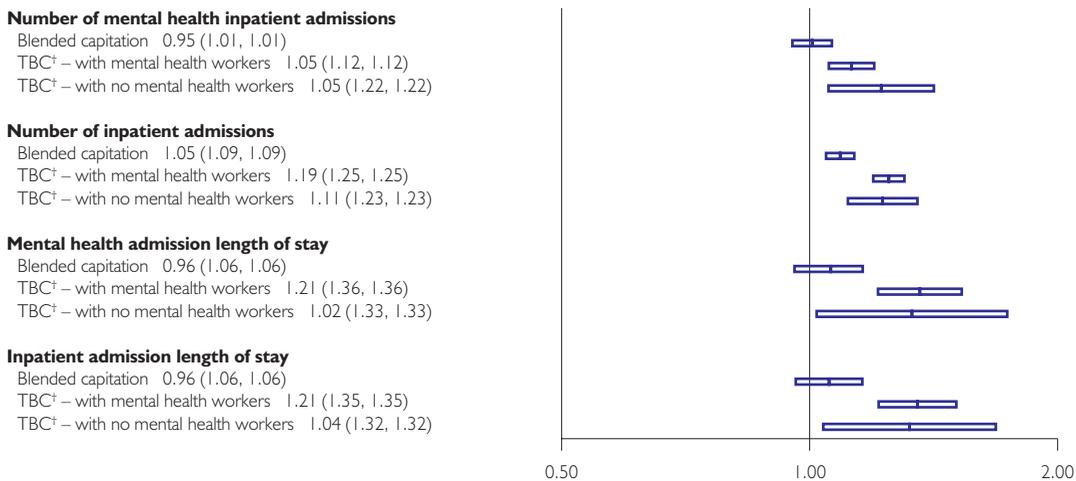


FIGURE 3. Rate ratios and confidence limits[§] for hospital admissions and lengths of stay by rostered adults with psychosis or bipolar disorder in capitation based primary care models compared to enhanced fee for service models in Ontario



[†] TBC = Team based capitation

[‡] Mental health workers included social workers (MSWs)/mental health workers (BAs/ BSWs) who are eligible to provide mental health counselling in team based capitation models in Ontario.

[§] Rate ratios were determined from negative binomial regression models fit using generalized estimating equations that were adjusted for patient factors (age group, sex, rurality, recent registrants, ADGs, RUBs, diabetes, hypertension, congestive heart failure and income quintile) and physician factors (gender, years since graduation, Canadian or foreign medical graduate, and practice size).

Similarly, increased comorbidities were associated with increased outcomes, while congestive heart failure, hypertension and diabetes were associated with increased general hospital admissions. Regarding physicians, males were associated with increases in all outcomes except for psychiatry visits and mental health ED visits; female physicians were associated with more psychiatry visits. Graduates from a Canadian medical school were associated with increased primary care office visits, while larger physician practices were associated with more general ED visits (see Appendix C online at www.longwoods.com/content/23926).

Discussion

Relative to patients enrolled in enhanced FFS models, patients enrolled in CAP and TBC had fewer primary care visits for mental health and general reasons, more general ED visits and more general hospital admissions. Patients in TBC models also had fewer psychiatry visits, more mental health hospital admissions and longer lengths of stay for both types of admissions than patients in enhanced FFS. The findings of significant differences in hospital admission rates for patients in TBC compared to enhanced FFS models are particularly notable, as mental health hospitalization rates are low overall.

This study adds to the existing literature by describing differences in service use across models in Ontario. However, the reasons for differences are not known. For example, data were not available on visits to non-physician providers in TBC models (e.g., dietitians). Accordingly, it is possible that patients with SMI could have been seeing other providers in the team-based model in addition to or instead of their PCP, and these visits would not have been captured in the data. For example, patients may have had fewer visits to physicians and more to non-physician providers who assisted with non-medical aspects of their care. This is more likely because of the broad range of diagnoses included in this study. If more visits to non-physicians and fewer to physicians were observed, this may indicate that providers in TBC models are shifting responsibilities in caring for persons with SMI. This may help providers in TBC models use improved methods of assessment of need for hospitalization, suggesting that the observed increased hospital use was appropriate.

Present findings align with findings from other research on the general Ontario populations that suggested that PCPs in CAP models provide roughly 6-7% fewer services and visits than PCPs in enhanced FFS (Kralj and Kantarevic 2013). In addition, ED use trends observed in this study are consistent with a recent report (Glazier et al. 2012) that found that average number of ED visits per person was higher than expected in CAP and TBC and lower than expected in enhanced FFS.

However, our results did not replicate US findings that reported that compared to FFS, capitation models were associated with fewer mental health hospital admissions, fewer psychiatric ED visits (Bloom et al. 2002; Leff et al. 2005; Rothbard et al. 2004; Warner and Huxley 1998) and mixed patterns of outpatient mental health service use (Busch et al. 2004; Chou et al. 2005; Leff et al. 2005; Morrissey et al. 2002). Like our study, Morrissey et al. (2002) reported that among patients with SMI, being in a full-risk health maintenance organization with a capitation fee, compared to an FFS model, was associated with less use of outpatient

psychiatric services and other counselling services. Similarly, a study on Medicaid enrollees with schizophrenia (Busch et al. 2004) reported that persons in a carve-out were one-fourth to one-fifth as likely to receive individual therapy, or group therapy. However, Leff et al. (2005) reported that patients with SMI in managed care had more hours of primary care visits than FFS patients. A Cochrane systematic review (Scott et al. 2011) noted that despite the popularity of different payment systems in primary care, there is little rigorous evidence assessing potential improvements of the quality of this care, and of the cost-effectiveness of these approaches. This difference might be related to systemic policy differences between the Ontario context and many American jurisdictions. Specifically, an access bonus is available to capitation PCPs in Ontario. This bonus decreases when an enrolled patient uses specific out-of-practice services (e.g., visits a walk-in clinic). However, ED visits, specialist visits and hospital admissions are exempt from this financial penalty, meaning there is no deduction from the access bonus even if an enrolled patient visits an ED for non-emergency care (MOHLTC 2011). This suggests that Ontario PCPs may have an inadvertent incentive to have their patients use the ED in preference to other primary care services.

Limitations

This study had several limitations. The accuracy of using individual OHIP codes for identifying a true mental health diagnosis remains unknown. However, administrative measures of mental health service use have been validated in a primary care setting and appear to accurately identify health services provided for mental illness (Bulloch et al. 2011; Spettell et al. 2003; Steele et al. 2004). While the sensitivity (55.3%) for identifying visits related to psychotic disorders is relatively low, this validation was done prior to the institution of incentives for assigning diagnostic codes for psychotic disorders (Steele 2003). Accordingly, the actual sensitivity during the study period was likely higher.

We could not account for variables not included in administrative databases (e.g., severity of mental disorder or visits to non-physicians in TBC models). For the same reason, we could not include individuals with no healthcare use during the study period or examine use of services that are not insured in Ontario (e.g., visits to traditional healers, services delivered by community mental health organizations). In addition, patient characteristics (e.g., income quintile) were measured at one point but may have changed over time, which could have introduced some measurement error. Length of physician visits also could not be measured.

Using shadow billing¹ data (only 10% and later 15% of claims were paid in the capitation models) to define mental health groups may have resulted in an underestimation of the number of patients with mental disorders in capitation practices. Alternatively, it is possible that issues are more commonly billed as separate visits in FFS models.

This could have exaggerated the difference between enhanced FFS and CAP models. Whether shadow billing is associated with decreased billings has not been examined in Ontario, but it does not appear likely, as 10%–15% of physician income is based on these billings.

There may have been a selection bias, as in Ontario, PCPs choose the primary care practice in which they work and influence their patient case-mix. A recent Ontario study (Steele et al. 2013) reported that persons with mental illness are under-represented in rosters of capitation models. In spite of this, in the present study, patient characteristics seemed similar across models. However, payment models differed in some measurable characteristics such as percentage of Canadian educated physicians, roster size and physician years in practice. There may also be additional differences in unmeasured characteristics (e.g., physician attitudes) that we did not account for.

There were also limitations associated with this study's cross-sectional design that examined relationships between model membership and service use at one point in time. Accordingly, service use may have occurred when a patient or PCP was in a different model than the one to which they were assigned in the study (i.e., the model in which they were a member) on March 31, 2011. This design also prevented conclusions related to temporal precedence (or causality), such as whether patterns were pre-existing or if they developed after physicians joined new models (Glazier et al. 2009). Independent of when these patterns first developed, they still warrant consideration by policy makers.

Due to the study design and analysis, reasons for observed patterns also could not be ascertained. However, even with this limitation, this study helps to fill the knowledge gap surrounding mental health service use by patients with SMI in different types of primary care models in a setting with universal health insurance. There is a particular need for this research, given that these models were already introduced in Ontario. They are also receiving consideration from policy makers in many jurisdictions including other Canadian provinces (Quebec, Alberta) with ongoing primary care reform. After models have stabilized following changes that occurred over the past decade, future studies on service use for SMI persons should use longitudinal and qualitative methods to examine trends across time and reasons for these trends.

These results are likely not explained by residual confounding by case-mix, as patients in enhanced FFS tend to be sicker (i.e., have higher morbidity levels) than patients in CAP and TBC models (Glazier et al. 2012). However, residual confounding by urban–rural status may contribute to the present results because CAP and TBC models are more common in rural areas. Similarly, largely due to small sample sizes, the findings related to TBC models with and without MHWs were inconclusive.

Strengths and implications

This study found that enrolled patients with SMI in capitation-based models had fewer primary care visits and more ED visits and hospitalizations than patients in enhanced FFS models. As hospitalizations are associated with high costs and disruptions for patients and families, this marks a concern for the Ontario Government and other jurisdictions in the midst of mental health and primary care policy reform (Kirby and Keon 2006; Legislative Assembly of Ontario 2009; SEEI Coordinating Centre 2009). Although we do not report cost data, our study improves on previous research by providing a comprehensive portrait of

in-patient and outpatient service use by patients with psychotic or bipolar diagnoses enrolled in enhanced FFS or capitation-based primary care practices (CAP and TBC) in a single-payer system. Moreover, while this study was done in a setting with universal health insurance, factors related to physician remuneration (e.g., risk adjustment) are relevant across jurisdictions. One such jurisdiction is the US, where recent legislative changes (e.g., *Patient Protection and Affordable Care Act*) put risk adjustment and reinsurance, especially for high-needs patients such as persons with SMI, at the forefront of policy discussions (Barry et al. 2012; NAMI State Advocacy 2011).

In Ontario, careful attention to financial incentives under capitation may be needed to align mental healthcare provision with health system goals. It has been noted that paying larger amounts for caring for patients with specific illnesses is necessary to increase their attractiveness to doctors (Blomqvist and Busby 2012). This applies to patients with SMI who have higher needs than most patients. One possible response is to incorporate adjustments for case-mix into remuneration for PCPs in capitation models. Alternatively, the introduction of additional care incentives could increase the appeal of caring for this population (Steele et al. 2013). For example, process of care incentives could improve quality of primary health-care delivered to SMI populations in primary care. Quality-of-care incentives in Ontario are already available to PCPs for management of other chronic diseases (e.g., diabetes) (Kiran et al. 2012). As well, existent practice guidelines could provide a basis for incentivizing quality care for people with SMIs in capitation models.

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Note

1. Shadow billing involves submitting information about the services a physician provides. Information, however, is submitted for administrative/tracking purposes, not for reimbursement.

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Primary Care Reform and Service Use by People with Serious Mental Illness in Ontario

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Gaps in Primary Healthcare Electronic Medical Record Research and Knowledge: Findings of a Pan-Canadian Study

Lacunes dans la recherche et les connaissances sur les dossiers médicaux électroniques dans les soins de santé primaires : conclusions d'une étude pancanadienne



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Abstract

While the barriers to electronic medical record (EMR) adoption by physicians are well-known, we have much less knowledge about the broader challenges regarding EMR use faced by primary healthcare (PHC) EMR stakeholders in Canada. Therefore, we conducted interviews (from June 2009 to September 2010) and consultation sessions (in October and November 2009) with these stakeholders, as well as carrying out a research capacity assessment, to identify, describe and prioritize gaps in PHC EMR knowledge and research. Twelve thematic gaps emerged; four were identified as the most important: the need to ascertain the value of EMRs, the need to better understand elements of EMR implementation and adoption, the need to develop innovative data entry and extraction procedures, and a lack of agreement and understanding of data sharing. To advance EMR use, Canada needs to address these gaps; yet, we currently have a lack of research capacity with which to accomplish this.

Résumé

On connaît bien les obstacles auxquels se heurte l'adoption des dossiers médicaux électroniques (DME) par les médecins, mais il y a peu de données sur les grands défis liés à l'utilisation des DME auxquels font face les intervenants en soins de santé primaires (SSP) au Canada. C'est pourquoi nous avons mené des entrevues (de juin 2009 à septembre 2010) et des consultations (en octobre et novembre 2009) auprès de ces intervenants, en plus de mener une évaluation des capacités de recherche pour repérer, décrire et prioriser les lacunes dans la recherche et les connaissances sur les DME dans les SSP. Douze thèmes lacunaires ont émergé; quatre ont été qualifiés des plus importants : le besoin de déterminer la valeur des DME, le besoin de mieux comprendre les éléments de mise en œuvre et d'adoption des DME, le besoin d'innover en matière d'entrée et d'extraction des données, et le manque de consensus et de compréhension au sujet du partage des données. Pour faire progresser l'utilisation des DME, le Canada devra affronter ces lacunes; il y a cependant un manque de capacités de recherche pour y parvenir.

RELATIVELY RECENTLY, THE TIDE HAS BEGUN TO SHIFT IN THE USE OF ELECTRONIC medical records (EMRs) in Canadian primary healthcare (PHC) (Canada Health Infoway 2011). EMRs are being promoted as a tool that can assist in improving healthcare in Canada (Health Council of Canada 2011). There is some evidence to support the association between EMR use and improved PHC practice (Lau et al. 2012); yet, we know that the realization of these potential benefits is dependent on optimal use of “multi-functional” EMRs (Friedberg et al. 2009; Linder et al. 2007). Moreover, EMR adoption remains variable across the country, and the use of advanced EMR features is even further limited (Schoen et al. 2009). The barriers to EMR adoption are well-known (Boonstra and Broekhuis 2010; Simon et al. 2007); these studies are focused on physician considerations regarding the adoption/implementation of this technology into their practice. This study

explored the challenges to primary and secondary EMR use from a wider group of stakeholder perspectives, including those involving clinical care, policy making/healthcare planning and research. Within this study, we define stakeholders as those individuals holding an interest in the topic of EMRs in PHC; these individuals included clinicians/healthcare practitioners, decision-makers (those who make policy and health planning decisions), researchers and EMR vendors. We also make a distinction in this paper between EMR adoption (deciding to use an EMR in practice), EMR implementation (purchasing and setting up the technology in practice) and EMR use (the ongoing process whereby this technology is utilized for charting and to support patient care in practice).

This paper presents a summary of a Canadian Institutes of Health Research (CIHR)-funded study (Terry et al. 2010) within the “Nationally-Focused Needs, Gaps and Opportunities Assessments in Health Services and Policy Related to Electronic Health Records” competition. The focus of this competition was to understand the present situation with regard to EMR knowledge and research capacity, and what the ideal state would be in the future – i.e., to identify gaps in knowledge and research capacity. Specifically, CIHR was interested in accessibility, availability and quality of EMR data, as it pertained to its use by a variety of stakeholder groups. Due to the emergence of EMRs in PHC, and the role of PHC in the healthcare system – we chose to focus on PHC specifically. Therefore, the purpose of this research was to identify gaps in knowledge and research regarding EMR use in Canadian PHC, and to assess research capacity in this domain.

Methods

Using multiple methods (Creswell et al. 2004), including in-depth interviews, consultation sessions and a research capacity assessment, we identified, described and prioritized key gaps in knowledge and research. We focused on EMRs used in PHC by clinicians/healthcare practitioners in their offices to assist with the care of their patients. This study received ethics approval from The University of Western Ontario’s Review Board for Health Sciences Research Involving Human Subjects.

Data collection: interviews

Participants for interviews were recruited from an initial set of PHC EMR stakeholders identified by the research team. We sought representation across stakeholder roles (e.g., researchers, clinicians/healthcare practitioners and decision-makers), jurisdictions in Canada and acknowledged leaders in the field; snowball sampling was also used, wherein we asked participants to identify other key stakeholders. Fifty-three stakeholders were approached to participate. After obtaining informed consent, in-depth interviews (n = 36) were conducted with nine decision-makers, two decision-maker clinician/healthcare practitioners, nine clinicians/healthcare practitioner researchers, nine clinicians/healthcare practitioners, seven researchers and one EMR software vendor from across Canada (participants were from eight provinces, the Northwest Territories and the Yukon). Thirty-three interviews were

Gaps in Primary Healthcare Electronic Medical Record Research and Knowledge:
Findings of a Pan-Canadian Study

conducted from June 2009 to October 2009; the remaining three were conducted in April and September of 2010. Interviews were digitally recorded and transcribed verbatim. Interview questions related to factors influencing the use of PHC EMRs for clinical care, policy making and research. Two of us (ALT, SW) conducted interviews; these ranged from 15 to 100 minutes in length (see Appendix A for the interview guide at www.longwoods.com/content/23927). We developed the interview guide based on the identified topics within CIHR's grant call, as well as the emerging dominant issues regarding the use of EMRs in PHC.

Data collection: consultation sessions

In addition to the interviews, we held six consultation sessions in Calgary, Halifax, Montreal, Regina, Toronto and Vancouver with 28 stakeholders (recruited from potential interview participants), to discuss and prioritize gaps in knowledge and research that were identified from the first set of interviews. Consultation sessions were held in October and November of 2009. The stakeholders participating in the consultation sessions included 14 decision-makers, two decision-maker clinician/healthcare practitioners, three clinician/healthcare practitioners, six clinician/healthcare practitioner researchers and three researchers. Participants were asked to rank the gaps as either high or low according to two CIHR criteria: strategic importance and scientific importance, as well as an additional criterion of urgency. Rankings were based on the majority of participants in a session ranking a gap as high or low across all three criteria; where there was variability across participants, the gap was scored as variable. Those attending the consultation sessions also participated in strategic discussions of how to address the identified gaps. One of us (ALT) facilitated the sessions; group discussions and scoring were recorded on flip chart paper.

Data collection: research capacity assessment

To assess research capacity, we identified PHC EMR researchers in Canada by conducting a literature search in key bibliographic databases for the period 1999–2010, and searching funding databases, for 1999–2010 (see Appendix B for search details at www.longwoods.com/content/23927). We also explored the perspectives of interview participants regarding research capacity.

Analysis (interviews, consultation sessions and research capacity assessment)

We undertook a thematic approach to analyzing the interview data. Verbatim transcripts of the interviews were coded using NVivo software (QSR International Pty Ltd. 2008). We then analyzed the codes to identify emergent common themes. Consultation session scoring results were tabulated and flip chart summaries were transcribed. Gaps discussed at the consultation sessions were scored as “high,” “low” or “variable” depending on the ranking the majority of participants assigned. The results of the database searches for the research capacity assessment were tabulated. Research team meetings were held to discuss and integrate findings from the interviews, consultation sessions and the research capacity assessment. Our goal was to synthesize the key findings.

Findings

Interviews and consultation sessions

Twelve gaps in knowledge and research emerged from the interviews, which are described in Table 1. The four gaps that were ranked highest in the consultation sessions are highlighted below. The strategies discussed to address these gaps were broad and multi-faceted. Additional gaps emerged during the consultations, and five of these were highly ranked in some sessions (data quality, continuity of care, EMR in the academic setting, strategic investment and purpose of the EMR).

TABLE 1. Description of gaps in knowledge/research and results of prioritization

Gaps in knowledge/research (six sessions)*	Scores assigned in consultation sessions**		
	High	Low	Variable
1. Ascertain the value of EMRs – Theme: “What is the value proposition of EMRs to PHC providers, the healthcare system, researchers and policy makers?”	5		1
2. Need to better understand elements of EMR implementation and adoption – Theme: “How and why are PHC providers adopting EMRs in their practices or not adopting EMRs in their practices?”	4		2
3. Need to develop innovative data entry and extraction procedures – Theme: “How are data best entered and extracted from EMR systems?”	3	1	2
4. Lack of agreement and understanding of data sharing – Theme: “Who can share what with whom, when and how, for what purposes and what should it look like?”	3	1	2
5. Need to better understand and define the roles/views of the patient – Theme: “What are patients’ views about EMRs and what is their role in accessing/becoming involved in EMRs?”	2		4
6. Lack of consensus and understanding of privacy and confidentiality – Theme: “What works and does not work in terms of addressing privacy and confidentiality issues?”	2	1	3
7. Lack of an overarching framework for interoperability – Theme: “Need for interoperability or data flows among providers in the system, parts of the system and among EMR products”	1		5
8. Lack of national leadership (not rated in one session) – Theme: “Lack of overarching vision and leadership in Canada for health information and EMR use”	1		4
9. Need to define data elements – Theme: “What clinical data elements do PHC providers want and what do researchers and policy makers want in terms of data to answer questions about PHC?”	1	1	4
10. Develop an ideal EMR design – Theme: “How can an ideal EMR design facilitate use, ameliorate issues of coding vs. free text, support data entry and extraction”	1	3	2
11. Develop information technology knowledge and resources – Theme: “How can training and education help EMR use” and “Need for human resources in the healthcare system with both informatics and healthcare training”	1	1	4
12. Need to share experiences – Theme: “Need to learn from each other about broad experiences in EMR use (both positive and negative)”		3	3

*Additional gaps identified by participants within the group consultation sessions included data quality and usability; how EMRs could support continuity of care and what clinical content would be required to support transitions in care; how to best use EMRs in the teaching process of primary healthcare providers and how to best utilize EMRs in academic family medicine/primary healthcare; ascertaining the value and impact of EMRs from a social, economic, patient care and provider relationship perspective; and determining the problems we are trying to solve by using EMRs.

**Gaps were ranked either high or low according to two CIHR criteria: strategic importance and scientific importance, as well as an additional criterion of urgency. Rankings were based on the majority of participants in a session ranking a gap as high or low across all three criteria; where there was variability across participants, the gap was scored as variable. A maximum score could be 6 and a minimum 0. 0-6 is a count of the consultation sessions.

Ascertain the Value of EMRs

Determining the value of EMRs to PHC practice, given the lack of certainty of the impact of EMRs on patient care, was of central importance:

Well, having worked with some of the clinicians who are in general practice in primary care ... I think you know the main issue for them is that is all this worth it? Is it really improving patient care? That's the bottom line.

Another individual described a contrast in perspectives regarding the value of EMRs in the following way:

I think we've done a pretty good job in medicine of getting people to think, that evidence-based medicine is the way forward for everything. Now we come along and say, "hey, you've got to use these systems and by the way we've got no evidence that they actually do improve care." That may be the fundamental issue why we're not seeing take up in the same way. In that we've kind of created a culture of evidence and then, we don't really have any. And it's a very odd situation where people can recognize there's no evidence but still think it's the right thing to do.

Participants also discussed the potential benefits of EMRs, such as their use to better manage practice populations. However, the need to evaluate EMRs and to understand how they could be best used was a central theme.

Strategy discussion

Given the uncertainty regarding the value of EMRs, consultation session participants identified the need to focus on ascertaining the impact of EMRs on patient safety, patient outcomes and continuity of care, efficiency, value for patients and the value for the health system versus value for practitioners. Questions were raised regarding the link between the purpose of the systems, their features and potential benefits. Additionally, defining what we want to achieve with EMRs, and "meaningful use" of EMRs were raised as important components of the value question.

Need to Better Understand Elements of EMR Implementation and Adoption

A lack of knowledge surrounding PHC EMRs was viewed as a potential influencer of EMR adoption and use in practice. Participants noted the need to better understand influences on EMR uptake overall, as this quote suggests:

... there's a huge issue around why is Canada different? What is it that's causing the take up to be so different?

Additionally, participants focused on the need to identify both the best ways to implement EMRs, and the elements that would support clinicians/healthcare practitioners in the adoption and full use of this technology.

Strategy discussion

In response to this gap, consultation session participants discussed the need to determine the optimal environment or milieu for implementation, to explore existing success stories and to seek out lessons from other countries. Other factors to be explored included the impact of potential drivers of implementation and adoption, particularly in terms of physician compensation, mandatory implementation of EMRs, the influence of different practice models and the effect of generational gaps. The structure of the EMR, the nature of the users and the impact of different change management and practice strategies were raised as potential – yet unknown – influencers of implementation and adoption.

Need to Develop Innovative Data Entry and Extraction Procedures

Participants described a tension between entering data in the EMR in free-text form and entering the data in a codified way; underlying this was a concern about losing the “art of medicine” – partly the nuances or context of the patient encounter:

That whole interaction that free text allows us is not yet a particularly useful tool for research and evaluation or policy development for EMRs. So from that perspective the more data that occurs in specifically designed and standardized fields, the more power your EMR provides for you but the more you create those standardized fields the more you're pigeon holing clinicians into putting data down in certain ways and there's a distinct tension between those two.

While the significance of coded data was recognized, participants indicated strongly that the entry of these data should not impinge on the work of clinicians/healthcare practitioners in PHC, for example, through interruptions in the process of caring for patients, or by adding an additional time burden.

Strategy discussion

Consultation session participants focused on various knowledge needs, including determining how to produce the best-quality data with the least intrusion on clinical work, and how to apply the best evidence in using the EMR; identifying what is available in the EMR, and what extraction tools are needed to get the information that is desired; creating standards to minimize variation; and identifying the causes of poor data. Further discussion centred on the development of technology to facilitate the extraction and interpretation of free-text EMR data.

Lack of Agreement and Understanding of Data Sharing

Participants described the current lack of frameworks to guide data sharing, which extended beyond data sharing among providers to sharing for secondary purpose as well:

... it's not so bad to exchange it with a specialist I know but when we get into the broader environment, now we're sending it out there, we get into these data sharing agreements, I think there's going to be a lot of time spent in ironing out those, how we share data. And that really ... has not been well appreciated and I think it's going to stop things and we're going to suffer a bit until we do straighten that out.

Data sharing was a topic which raised many unanswered questions:

There's still discussion around who can see what. There is still a few different interpretations about whose information it really is anyway. So ... there's some pretty basic questions that haven't been answered here.

Strategy discussion

Participants clearly identified a number of areas where there was a need for more knowledge and work around data sharing. This included the development of a framework illuminating the data needs of various stakeholders so that gaps in data sharing, including the purpose of the use of these data, could be more clearly understood. There were four main areas where greater knowledge was required: (1) clarity regarding the legal and clinical implications of shared data for patients and providers, (2) an understanding of legislation across Canada, (3) decision-making about what data are needed and (4) being aware of the context of EMR data.

The priority gaps in research and knowledge are inter-related. Multiple factors, including challenges in data entry and extraction, data sharing and a lack of certainty of the impact of EMRs on patient care, could influence the perceived value of the EMR. In turn, these gaps in knowledge and research are potential barriers to use of EMRs in the Canadian PHC context.

Research Capacity Assessment

To assess research capacity, we identified PHC EMR researchers across Canada, and we explored the topic of research capacity with our interview participants. Table 2 presents the number of publications, research grants, Canada Foundation for Innovation grants and Canada Research Chairs for PHC EMR researchers in Canada. These findings illustrate an overall low number of researchers in this field, as well as their concentration in a few provinces – Ontario, Quebec, British Columbia and Alberta (Table 2). This result was confirmed by interview participants, who indicated that there were few researchers in disparate locations across the country, few sources of research funding and a lack of training opportunities in e-health:

It's a pretty dry field right now, there aren't a whole lot of grants and there aren't a whole lot of skill sets available, and those that are available are scarce and hard to come by.

Collaborative initiatives were viewed as one way of addressing some of the research capacity challenges.

TABLE 2. Research capacity assessment of primary healthcare electronic medical record researchers – publications, grants and research chairs

Provinces	Publications n (%)* Total N = 84	Research grants n (%)* Total N = 38	Canada Foundation for Innovation n (%)* Total N = 4	Canada Research Chairs n (%)* Total N = 5
Ontario	36 (43)	16 (42)	3 (75)	4 (80)
Quebec	23 (27)	12 (32)	–	1 (20)
British Columbia	16 (19)	4 (11)	–	–
Alberta	5 (6)	5 (13)	–	–
Nova Scotia	2 (2)	1 (3)	1 (25)	–
Pan-Canada organizations	2 (2)	–	–	–

*Percentages may not sum to exactly 100 due to rounding.

Based on the findings of this study, we offer the following set of recommendations directed to PHC EMR policy and research stakeholders, as well as research funders. These recommendations are designed to increase the capacity in EMR research in PHC, and address the main gaps in knowledge and research identified in this study. This is in keeping with a view toward the development of the full potential of PHC EMR use in Canada.

TABLE 3. Recommendations to PHC EMR policy and research stakeholders, and research funders

1. Create and fund a Chair focused on PHC EMR research. This could be a National Chair providing: (a) structure to create a national collaborative network; (b) funds for salary plus funds for the Chair to allot to PhD students and Post-Doctoral Fellows. These provisions would thereby assist the current generation of researchers but mostly would build future researchers.
2. Create a call for research proposals to assess the value of the EMR and/or its components. The call could focus on the following types of proposals: <ul style="list-style-type: none"> • Systematic reviews of the value of EMRs to a variety of outcomes such as system integration, informational continuity, improvements to the process of care, interprofessional collaboration and provider satisfaction and experiences using the EMR. • Comparison of the use of EMR features (e.g., decision support) in relation to system, provider and patient outcomes. • Exploration of the utility of the secondary uses of EMR data.
3. Issue a call for research proposals on the development of demonstration models on knowledge translation specific to EMRs, and evaluation of these model interventions to promote change.
4. Engage key stakeholder partners to open a dialogue to identify common ground and avenues for future collaborations regarding: (1) raising the sophistication of EMR products; (2) enhancing the standard of EMR products (e.g., through creation of opportunities to develop EMR projects in a secure environment with input from key stakeholders); (3) encouraging joint funding of research calls that will assist the agenda of EMR vendors, such as the call for studies on EMR value.
5. Develop a partnership among key stakeholders to develop innovative data entry and extraction approaches and to test their usability.
6. Create a policy-oriented initiative on the topic of data sharing.

Discussion

This study identified significant gaps in our level of PHC EMR knowledge and research in Canada. In particular, gaps regarding value of the EMR, elements of implementation and adoption, data entry and extraction procedures and data sharing were of the most importance – some of these gaps lend themselves to actions at the policy level, and others are within the research domain. We also identified a lack of research capacity with which these gaps may be addressed. We discuss the implications of these findings in the following.

The PHC EMR environment is rapidly changing in Canada. Recent actions have been taken by several pan-Canadian organizations to increase the uptake of EMRs and to assess potential benefits (Canada Health Infoway), develop EMR content standards (Canadian Institute for Health Information) and to create an EMR-based surveillance network for chronic disease (Canadian Primary Care Sentinel Surveillance Network). These developments signal the interests of decision-makers and planners to foster both EMR adoption and the use of EMR data.

Not surprisingly, stakeholders viewed the value proposition of EMRs as unanswered, yet very important, given the mixed evidence regarding the impact of EMRs on patient care, uncertainty over financial benefits and the lack of Canadian studies on these topics (Bassi and Lau 2013; Lau et al. 2012). Similar to our findings, two other studies found “usefulness” to be a key factor in electronic health record adoption in Canada (Archer and Cocosila 2011; McGinn et al. 2012). These findings illuminate the continued importance of the value question, the mixed evidence regarding the impact of EMRs and the lack of outcomes-focused research specific to the Canadian context. Given the low number of studies regarding this topic, PHC EMR stakeholders (at the time of this study) remained unconvinced as to the ultimate value of this technology, highlighting the key importance of this question for the PHC EMR research agenda in Canada.

Despite existing knowledge regarding barriers and facilitators of EMR implementation and adoption (Archer and Cocosila 2011; Boonstra and Broekhuis 2010; McGinn et al. 2011; Protti 2007), this gap was ranked the second highest. This may point to a lack of uptake of the existing evidence, or a need for more information within the PHC setting. This points to the lack of a strong enough link between existing research findings, and policy action/knowledge translation which could overcome these barriers and capitalize on the facilitators. Certainly, EMR adoption has been characterized as a “highly complex problem” (Archer and Cocosila 2011), where there are differing views as to the relative importance and role of factors influencing uptake (McGinn et al. 2012). This may have created an environment of uncertainty where this issue continues to have salience for EMR stakeholders in Canada.

Increasingly, PHC practitioners are interested in harnessing the power of their EMR data to better understand and manage their patient practice populations. Secondary uses of EMR data for research, policy making and planning are on the rise. Both of these developments require data that are appropriate for these uses, as well as the ability to easily search and extract data. These trends highlight the growing need to develop and test innovative data

entry and extraction procedures, and the need to create infrastructures which can support these processes, leading to enhanced use of data for patient care, policy making and research.

Finally, this study identified a lack of agreement and understanding with regard to data sharing among PHC EMR stakeholders. This topic is considered important with regard to patient care and research. There is a recognized need for data sharing; however, concerns remain regarding privacy and security. Others have identified the need for guidance in this area (Rozenblum et al. 2011). In the absence of a clear understanding regarding the rules and governance of data sharing, a lack of consensus about sharing of data and uncertainty over patient views on this subject, it appears PHC EMR stakeholders are uncertain about sharing data because of the risk of potentially doing the wrong thing. Increased clarity and awareness regarding the circumstances under which PHC EMR data can be shared in a privacy-appropriate manner can help advance the goal of increased and appropriate PHC EMR data availability.

The focus in Canada has increasingly turned toward strategies to increase PHC EMR use – i.e., building information technology capacity in healthcare from the “ground-up.” Yet to realize a positive return on investment, and to maximize the benefit to patients and clinicians/healthcare practitioners, EMRs must be effectively implemented and used. The findings of this study, echoed by a recent report from Canada Health Infoway, suggest there is much we do not know regarding this, which is a challenge given the lack of research capacity in Canada (Canada Health Infoway 2013). How PHC practices can best be supported to achieve this optimal use also requires consideration. While recent developments such as Lau’s eHealth Benefits Evaluation Knowledge Translation Community (eHealth Observatory 2013), and the launch of CIHR’s Community-Based Primary Healthcare Signature Initiative are positive in terms of building capacity, more remains to be done. What is further troubling is the recent lack of broad investment in this area at the pan-Canadian level, as evidenced by the 2014 Federal Budget (Government of Canada 2014). This paper raises policy and research issues – both of which need to be addressed before significant improvements in PHC EMR use can be realized.

Strengths and limitations

While we were successful in ascertaining the views of PHC EMR stakeholders from many jurisdictions across our country, representing a diversity of roles, their views may not reflect those of a broader group of stakeholders. We identified only one other related study, which explored the perspective of Canadian stakeholders regarding e-Health policy in Canada, and its implications for electronic health record adoption (Rozenblum et al. 2011). Therefore, to our knowledge, this is the first study that presents a pan-Canadian perspective on the challenges regarding the use of EMRs in PHC. While there could be diverse views between different stakeholder groups, our thematic analysis provides comment on broad areas of agreement regarding gaps in PHC EMR research and knowledge.

Conclusion

This study explored gaps in research and knowledge regarding PHC EMR use for clinical care, research and policy making in Canada. The findings of this study suggest four main issues are at play: (1) while efforts are underway to increase levels of EMR use in PHC in Canada, there is variability in overall levels of use, and challenges in achieving full use of this technology in practice; (2) there are significant gaps in our knowledge and research regarding EMRs; (3) relatively few resources are available to inform these gaps; and, (4) currently, Canada has sparse research capacity with which to address the gaps. However, addressing these gaps may lead to advances in PHC EMR use in Canada. A natural next step would be to build consensus among PHC EMR stakeholders to create a research and policy agenda for PHC EMRs in Canada.

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Gaps in Primary Healthcare Electronic Medical Record Research and Knowledge:
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Optometry Services in Ontario: Supply- and Demand-Side Factors from 2011 to 2036

Services d'optométrie en Ontario : facteurs liés à l'offre et facteurs liés à la demande, de 2011 à 2036



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Abstract

Optometric labour market projections are provided. First, population growth and ageing-based estimates of the rate of increase of eye-care services in Ontario from 2011 to 2036 are presented, holding the age–sex structure of utilization constant. Then, using data on the 2011 supply and working hours of Ontario's optometrists, the number of optometrists needed to *keep the level of optometric services per age–sex-adjusted person comparable over time* is estimated. The projections suggest that the number of Ontario optometrists should grow by approximately 30–40 full-time equivalents per year; to offset retirements and account for decreasing work hours, this suggests 77–90 new practitioners are required each year. However, in recent years, the number of Ontario optometrists has been growing faster than this, suggesting either that demand has exceeded supply and/or surpluses will accumulate if this trend continues.

Résumé

Les prévisions sur le marché du travail pour l'optométrie sont connues. Premièrement, nous considérons la croissance de la population ainsi qu'une estimation de l'accroissement des services oculaires en Ontario, de 2011 à 2036, tenant compte du vieillissement tout en maintenant la structure d'utilisation selon l'âge et le sexe. Ensuite, nous estimons, selon les données de 2011 sur l'offre et les heures de travail des optométristes en Ontario, le nombre d'optométristes nécessaire *pour maintenir au cours du temps un niveau comparable de services d'optométrie en fonction de l'âge et du sexe*. Ces projections font voir que le nombre d'optométristes en Ontario devrait croître d'environ 30 à 40 équivalents temps plein par année; pour pallier aux retraites et tenir compte d'une diminution des heures de travail, de 77 à 90 nouveaux praticiens par année seraient nécessaires. Cependant, au cours des dernières années, le nombre d'optométristes en Ontario s'est accru plus rapidement, ce qui laisse croire que la demande a dépassé l'offre et/ou qu'il y aura accumulation de surplus si la tendance se maintient.

OPTOMETRIC EYE CARE IS BECOMING INCREASINGLY IMPORTANT WITH AN AGEING population, while, simultaneously, the supply side of the market is altering markedly as practice patterns evolve. Given that the labour market is regulated and that it is not competitive in a neoclassical economic sense for this and other reasons, it is important to take stock of the expected changes on both sides of the optometric labour market as an input into discussions regarding its ongoing operation. This paper therefore provides projections of both utilization and the supply of optometric services over 25 years from 2011 to 2036.

A methodologically similar, though larger, exercise was undertaken for a large range of physician specialties by Denton et al. (2009), and a relevant single-specialty analysis more conceptually similar to this one was conducted for ophthalmology by Bellan and Buske (2007) amid concerns of a looming shortage of ophthalmologists. More recently, however, Bellan et al. (2013) found that ophthalmologist-to-population ratios have stabilized due to an increased number of graduates, declining retirement rates and declining emigration to the US. Bellan et al. (2013), therefore, predicted that, by 2030, the ratio of ophthalmologists to population will increase slightly from current levels, although the number of full-time equivalents (FTEs) will see a small decline. Worldwide, Resnikoff et al. (2012: 783) predicted shortages and suggest that it is "necessary to aggressively train eye care teams now."

There is little evidence regarding the labour market for Canadian optometrists, who are complements to, and sometimes substitutes for, ophthalmologists. Although not quantitative, Dreezer (1996) provided recommendations from the Committee on Optometric Human Resources, which are aimed at balancing the provision of adequate optometric services to the Canadian population with government's desire to manage costs. A section of this report discusses the issue of human resource management for Ontario, including the fact that even if influencing the number of optometrists graduating in Ontario were feasible, interprovincial and international migration can more than offset local initiatives.

Jin and Trope (2011) used the 2005 Canadian Community Health Survey (CCHS) to provide estimates of eye-care demand by age and gender (i.e., demand for both ophthalmology and optometric services). On the supply side, the Canadian Institute for Health Information (CIHI 2010) provided Canadian labour force estimates for optometrists from 2000 to 2009. But, to the best knowledge of the authors, there are no recent estimates of the extent to which the Canadian supply of optometrists will be adequate to keep pace with the growing and ageing Canadian population. This paper aims to partially fill that void by examining the case of Ontario.

Internationally, work similar to this has been conducted for the US and Australia. For the US, both Lee et al. (1995) and White et al. (2000) predicted an excess supply of optometrists relative to projected demand. Horton et al. (2006: 229) found that the number of optometrists was “adequate to meet the needs of the Australian population.” By 2009, however, the same authors found that the supply was “more than adequate” (Kiely et al. 2010: 330).

Methods

Increases in utilization for optometric services in Ontario caused by an ageing and growing population are projected of the 25-year period from 2011 to 2036. Estimated utilization rates by age and gender are first obtained from the 2010 CCHS, and these age–sex cell rates are projected forward using Statistics Canada’s population growth estimates.¹ This allows a more accurate estimate of future utilization than does simply providing optometrist-to-population ratios, as the former accounts for the fact that an ageing and growing population uses more services than one that is merely growing.

Although some factors under study are commonly associated with one or the other side of the market (e.g., population ageing with the demand side, and the number of new optometry graduates with the supply side), in no sense is either a demand or supply curve estimated in this exercise. Rather, extrapolations of utilization observed in a base year are presented. If the market is in equilibrium, then the model projects this equilibrium level of service forward, allowing only for exogenous changes in the population’s size and age distribution.² Potential other future shocks to the equilibrium are addressed in a set of sensitivity tests. If the market was in disequilibrium in the base year, then modest perturbations from the steady state are likely covered by the sensitivity tests, but large deviations would need to be identified in a more extensive data collection and analysis process than that undertaken here. Some labour market studies address clinical “need,” which is frequently defined as the hypothesized optimal level of service provision as determined by clinical experts for a population presenting with particular characteristics.³ Clearly, it is neither reasonable to claim that the market equilibrium reflects need, nor that all needs are appropriately met (with positive or negative deviations possible) in the base year. Akin to the disequilibrium case, assessing need would be a much larger exercise than that undertaken in this analysis, which has a more limited scope.⁴ In this analysis, utilization growth projections are used to ask the following question:

To what extent would Ontario's supply of optometrists be required to grow, and how many annual graduates would be necessary, to keep the level of service constant in each age–sex cell?

Supply-side estimates are based on the stock of Ontario optometrists and their working behaviours as estimated using data from the Health Professionals Database (HPDB) for 2011. The HPDB is a census of practitioners collected annually by the Ontario Ministry of Health and Long-term Care (MoHLTC) from regulatory colleges and is used for health human resource planning. Assuming that optometrists from a given age–gender category will continue to work similar annual hours into the future (that is, for example, a 35-year-old female optometrist in 2016 through 2031 is assumed to work, on average, the same number of hours as a 35-year-old female optometrist in 2011), the study estimates the annual number of new optometrists (new graduates and/or net geographic mobility into the province) that will be required to provide the required service volumes.

Results

Eye-care service utilization

First, the utilization of optometric services in Ontario is estimated. The CCHS asks, “Have you visited an eye specialist, such as an ophthalmologist or optometrist (about your physical, emotional or mental health)?” Respondents who reply affirmatively are then asked the number of times they have visited in the past 12 months. Appendix A (available online at www.longwoods.com/content/23928) provides responses from these questions by age and gender. Youths aged 19 and below are relatively heavy users of eye-care services, but this tapers off with the onset of adulthood. Then, not surprisingly, use increases steadily from about age 20, and the elderly are the most likely to make use of eye-care services. Women visit eye-care specialists slightly more than men.

Note, importantly, that the survey data are unable to distinguish whether the respondent visited an ophthalmologist or an optometrist. In the projections to follow, one must therefore assume that the mix between ophthalmologic and optometric services remains fairly constant going forward and that it is stable across age–gender categories. While there are several reasons that this mix could change, there is no obvious direction for it to take. Sensitivity analysis below examines “high” and “low” utilization of optometry scenarios, which encompass possible changes to the mix between ophthalmology and optometry.

Appendix B (available online at www.longwoods.com/content/23928) provides “medium growth” estimates from Statistics Canada of the population in Ontario over the next 25 years (i.e., each five years from 2011 to 2036). As is well-understood, the population is both increasing in overall size (estimated to increase by 6.4% by 2016 and 33.1% by 2036) and ageing, suggesting that those who make the greatest use of optometric services (the elderly) are likely to see the greatest increases in population.

TABLE 1. Projection of eye specialist visits (Ontario)

Year	Total anticipated eye specialist visits	Percentage growth since 2011
2011	6,629,924	
2016	7,206,738	8.7
2021	7,857,461	18.5
2026	8,565,575	29.2
2031	9,282,885	40.0
2036	9,947,730	50.0

Source: Authors' calculations based on Appendices A and B (see Appendices A and B online at www.longwoods.com/content/23928). Detailed breakdown is available in Appendix C (available online at www.longwoods.com/content/23928).

In Table 1 (details in Appendix C online at www.longwoods.com/content/23928), the results from Appendices A and B are combined to project required optometric services into the future. To do so, the assumption is made that the utilization of services by each age–gender category will remain constant into the future. That is, for example, it is assumed that the average 83-year-old woman will visit an optometrist/ophthalmologist 1.11 times in 2036, just as they do in 2010. However, if the improving health of 83-year-olds means that in reality they visit eye-care providers less than now, the analysis is unable to capture this change. Similarly, changes in technology that could change the needs for services are unaccounted for. However, in the sensitivity analysis, estimates are provided for low- and high-utilization growth scenarios, which should accommodate such changes.

Supply of services

CURRENT SUPPLY OF OPTOMETRIC SERVICES

The supply of optometric services is now described. The first set of columns in Table 2 shows the average number of weeks worked by practicing optometrists in the past year by age and gender. Data are from the HPDB, which captures all registered Ontario optometrists. At all ages, males work more weeks on average in the year than females, although these differences are quite small at ages above 45 years. Women under 35 years of age work an average of 3.5 fewer weeks than men of the same age, while women aged 35–44 work 2.5 fewer weeks than their male counterparts. These are quite likely consequences of women of child-bearing age being more likely to take maternity and/or parental leave, and have implications for the number of required optometrists. The second set of columns in Table 2 shows the average number of weekly hours worked over the past year. Women work an average of about 6 hours per week less than men. A gap is apparent at all ages, although the difference is small for those over 55 years of age.

TABLE 2. Working time by Ontario optometrists

	Average weeks worked in 2011			Average hours per week			Active optometrists			Full-time equivalents (FTEs)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
<35 years	43	39.5	40.6	37.4	31.6	33.4	174	390	564	177.8	308.7	486.4
35–44 years	47.3	44.8	46	37.4	28.9	33	264	291	555	296.8	239.6	536.4
45–54 years	46.5	45.8	46.2	38	31.2	34.9	240	203	443	269	184.4	453.4
55–64 years	45.8	44.7	45.6	35.7	33	35.1	226	61	287	234.7	57.1	291.8
65 years and older	44.4	–	44.2	28.9	–	29.2	57	4	61	46.5	4	50.5
Total	45.8	42.8	44.3	36.6	30.8	33.7	961	949	1,910	1,024.2	794.3	1,818.5

Source: 2011 HPDB

Table 2, on the left-hand side of the lower panel, shows the number of active optometrists for 2011 registered in the HPDB. In total, Ontario had 1,910 active optometrists roughly evenly split between males and females. However, this apparent gender balance masks large differences by age category. Older optometrists are far more likely to be male than female, whereas the younger optometrists are substantially more likely to be female.

Finally, the lower-right set of columns in Table 2 shows the number of FTE male and female optometrists at various ages. “Full-time” is arbitrarily defined as 35 hours per week and 45 weeks per year, or a total of 1,575 annual hours. As women work, on average, less than one FTE, the number of FTE women is less than the number of individuals. Men’s count, on the other hand, stays roughly constant. This calculation suggests that the 2011 population of 1,910 optometrists is working the hours of roughly 1,818 full-time, full-year workers.

PROJECTED SUPPLY OF OPTOMETRIC SERVICES

Given the projected increases in utilization from the first section, it is assumed that the number of FTE optometrists would need to grow at a similar rate to keep the service level constant. The third row of Table 3 therefore shows the number of FTEs required to keep the age–sex-adjusted optometric services constant at the baseline level. For example, in 2016, to provide a comparable level of service to that in 2011, the number of FTE optometrists would need to rise by 8.7%, from 1,818 to 1,976. This is an average increase of about 32 FTE optometrists per year, as shown in the fourth column of Table 3. Overall, the annual increase in the number of FTE optometrists is gradual and is always between 32 and 39. Next, the number of new graduates that would be required to bring the total number of FTEs to the desired level is modelled. To do so, five simplifying assumptions are made, with sensitivity tests subsequently undertaken to ascertain their importance.

NEW RECRUITS WILL CONTINUE TO BE APPROXIMATELY 33% MALE AND 67% FEMALE
Recently, new graduates have been approximately two-thirds female (Table 2). It is assumed that this ratio will stay constant. If the percentage of males were to increase (decrease), the number of required optometrist graduates would decrease (increase), as males work more hours per year, especially at younger ages.

OPTOMETRISTS OF A GIVEN AGE-GENDER CATEGORY WILL CONTINUE TO WORK THE SAME NUMBER OF ANNUAL HOURS AS CURRENTLY

Naturally, if optometrists change their work habits to work more (fewer) hours, less (more) new graduates will be required to meet the projected utilization increases. It is unlikely, however, that these patterns will change dramatically, particularly the fact that women of child-bearing age work fewer annual hours on average.

EVERYBODY RETIRES AT AGE 65 AND WILL CONTINUE TO DO SO

For simplicity of analysis, it is assumed that all optometrists will retire at the age of 65. This is, in fact, the approximate mean age of retirement, as seen in the HPDB, although there is really a distribution of retirement ages. To the extent that the average retirement age increases (decreases), fewer (more) new graduates would be required to meet projected utilization of services. Furthermore, what we are classifying as “retirement” also captures other reasons for ceasing to practice in Ontario. Therefore, changes to the retirement age should be understood to mean changes in the mean age at which practitioners leave the occupation for any reason (e.g., death or emigration).

THE RATIO OF FTE OPTOMETRISTS TO SERVICES IN 2011 IS THE RATIO TO AIM FOR GOING FORWARD

As discussed above, no claim is made regarding knowledge of the optimal number of optometrists (e.g., a measurement of need). Rather, the question asked is, “How many new annual graduates would be required to maintain approximately the same level of service as provided in 2011?” To the extent that one believes the number of optometrists in the base year is too large (too small), the number of required new graduates will be too high (too low).

Given these assumptions, the number of optometrists who would still be working at each five-year interval is estimated. For example, in 2016, it is assumed that the number of males between ages 45 and 54 will be half what it was in 2011 plus half the number of males aged 35–44 in 2011 (as everybody ages five years). Given their new ages and expected working time, it is then determined how many new graduates it would take to bring the total number of FTEs to the numbers required in the third row of Table 3. The results are in the final row of Panel A of Table 3 (details in Appendix C online at www.longwoods.com/content/23928); it is estimated that for the next 10 years, adding 77 new optometrists per year would keep the total number of optometrists growing at a similar rate to the growth in projected utilization. After 2021, the number of annual new graduates required would increase to 87 until 2026, and 92 thereafter.

TABLE 3. Summary estimate of future supply required to maintain 2011 service levels

	2011	2016	2021	2026	2031	2036
Panel A: Baseline estimate of optometry supply						
Anticipated utilization	6,629,924	7,206,738	7,857,461	8,565,575	9,282,885	9,947,730
% Growth since 2011	–	8.70	18.50	29.20	40.00	50.00
FTEs required	1,818	1,976	2,155	2,349	2,545	2,728
Annual increase in FTEs	–	32	36	39	39	36
Anticipated active optometrists	1,910	2,091	2,293	2,512	2,732	2,929
Annual new recruits required	–	77	77	87	92	92
Panel B: Sensitivity of annual new recruits required to changes in assumptions	–					
Low growth scenario (low demand)	–	73	71	77	81	80
High growth scenario (high demand)	–	80	83	97	104	104
Increasing new graduate male:female ratio to 2/1	–	75	74	82	86	85
Decreasing percentage male graduates to zero	–	79	81	92	98	100
Steadily declining work hours	–	100	101	108	110	108
Decreasing retirement age to 63	–	97	90	93	98	99
Increasing retirement age to 67	–	68	77	87	92	92

Source: Authors' calculation. Assumptions discussed in text.

CURRENT GROWTH AND SOURCES OF GRADUATES

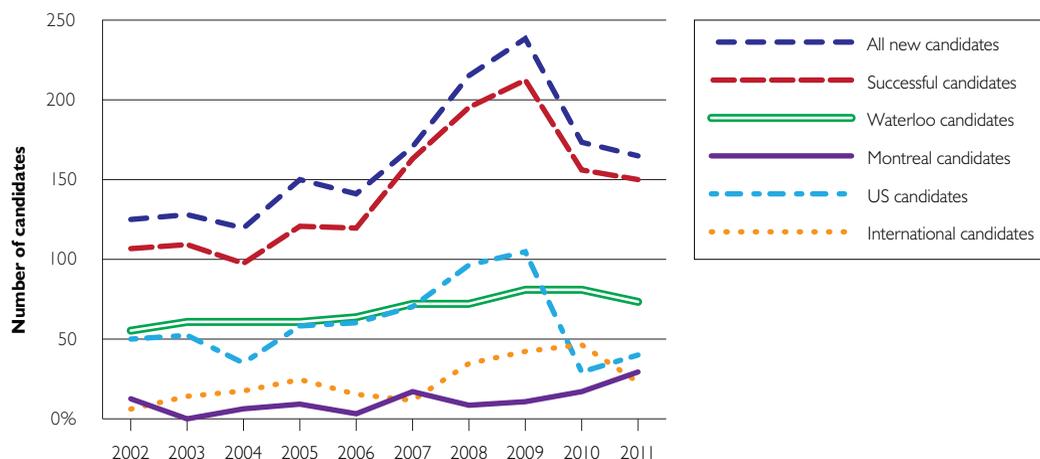
It is estimated that Ontario will need approximately 77 new optometrists per year. In fact, in the past two years, the number of optometrists in Ontario has been growing by more than 100 per year: from 1,695 in 2009 to 1,795 in 2010, and to 1,910 in 2011, according to the HPDB. This suggests that the number of optometrists is growing at a faster rate than the projected increases in utilization of services holding age–sex-adjusted per-person utilization constant.

Examined next are some of the sources of new graduates to the Canadian stock of optometrists. As graduates from each of these sources are free to register in the province of their choosing, it should be understood that some percentage of them will locate in Ontario, although numbers may change from year to year. Figure 1 shows the numbers of graduates writing the CSAO (Canadian Standard Assessment in Optometry; as of 2011 replaced by the CACO, Canadian Assessment of Competency in Optometry) examinations in the past

decade. The total number of candidates passing the CSAO examination has increased from just over 100 per year in the early 2000s to just over 200 in 2009. It has subsequently fallen somewhat in 2010 and 2011 to about 150 candidates. While the number of domestically trained optometrists (from the only two Canadian programs at the Universities of Waterloo and Montréal) has increased slowly and steadily during this period, the variation in growth comes from both US and other internationally trained optometrists. The decline in applicants between 2009 and 2010 is entirely due to fewer applicants from US schools. There is some anecdotal evidence that this is due to applicants bypassing the CSAO examination by registering in provinces which accept alternative entry-to-practice examinations, although the extent of this is unknown and is outside of the scope of this report. Once registered in any province by any route, however, optometrists can subsequently move to other provinces.

International graduates become eligible to work in Canada by passing the International Optometric Bridging Program (IOBP), and then writing the CASO examinations and registering with their provincial regulator. The IOBP currently enrolls an annual number of about 30–35 students, and annual enrolment is capped at 40. Although the number of international candidates writing the CSAO declined in 2011,⁵ Figure 1 shows that it has otherwise grown steadily since 2007. For a number of reasons, however, the actual number of international graduates practising as optometrists may be smaller than the number writing the CACO indicated in Figure 1. The entry of those studying abroad and wanting to enter Canada, and its effect on the total number of optometrists, has the potential to become an important and political issue, as it did in the case of doctors several years ago. See, for example, Thomson and Cohl (2011a, 2011b) for a discussion of the issues related to international medical graduates.

FIGURE 1. New candidates writing CSAO examinations



It must be remembered that for each of these sources, graduates are free to register in any province upon graduation, and thus do not all locate in Ontario. Nevertheless, as described previously, enough new graduates are remaining in Ontario to cause the Ontario stock of optometrists to be rapidly increasing.

SENSITIVITY ANALYSIS

A sensitivity analysis is conducted to measure what effect changes in the main assumptions would have on the number of annual recruits required. The results are presented in the lower panel of Table 3. On the demand side, both Statistics Canada's high and low population growth rates are examined, and it is found that the number of required new recruits would drop to 71–81 in the case of the low growth rate, while it would rise to 80–104 in the case of the high growth rate. Clearly, these changes only make a small difference to the number of required new graduates. These estimates could also be used to consider other possible changes emanating from the demand side, for example, a shift in the ratio of services between ophthalmology and optometry.

On the supply side, the following are examined: the male-to-female ratio of new recruits, optometrists' work habits and their retirement age. For the new recruits' male–female ratio, if the ratio gradually increases from 1/2 to 2/1 by 2036, the number of new recruits required annually declines to 74–85, as male optometrists work more hours than female ones. If the percentage of male graduates gradually decreases to zero by 2036, that is all new recruits are female by 2036, then the number of new recruits required annually ranges from 79 to 100.

The most dramatic of the assumptions is about working habits where extreme trends are allowed for. If the working hours of optometrists reduces at a decreasing rate (5% for the first five years, 4% for the second and 1% by the end of 2036), the number of required new recruits increases to 100–110 per year. It is not surprising, however, that a cumulative decline in working hours of more than 10% per optometrist for the total stock of practitioners results in the need for substantially more new graduates.

Finally, changes to the expected retirement age are examined. If the assumed retirement age increases to age 67, the number of required new recruits declines to 68–92, while the number rises to 90–99, if the retirement age decreases to age 63. Again, retirement can be taken as a proxy for increases or decreases in optometrists leaving the Ontario profession for any reason.

Discussion

Increases in Ontario's requirements for optometric services over the next 25 years have been estimated based on a growing and ageing population, holding age–sex-adjusted utilization constant at 2010 levels. It is found that the quantity of required services will likely grow by 8.7 per cent by 2016 and by 50 per cent by 2036. In 2011, there were 1,910 active optometrists in Ontario, and it is projected that this number would need to grow by about 32–39 FTEs per year over our study period. Including replacement and accounting for the fact that many optometrists do not provide exactly one FTE in service provision, this implies that approximately 77 new optometrists are needed each year until 2021 (rising gradually to 92 in the following years).

In fact, however, the stock of Ontario optometrists has been rising more quickly than this, as the total number of active Ontario optometrists has increased by more than 100 in each of the past two years. If anything, the number of new graduates appears likely to continue to

increase. This suggests a rate of growth that will increase the supply of optometrists relative to current utilization levels in the coming years.

Sensitivity tests suggest that these projections of the number of new optometrists required are not particularly sensitive to reasonable changes in the assumptions about utilization growth or optometrists' working time. Furthermore, the current growth in the number of optometrists of more than 100 per year in Ontario is at or beyond the outer limit of any single perturbation in the sensitivity tests. The conclusion that the current growth of optometric labour supply is likely faster than the projected growth in utilization as defined would only be overturned if multiple utilization-increasing scenarios such as those presented in Panel B of Table 3 occurred simultaneously with no countervailing influences. While possible, this is unlikely.

It is important to consider that this analysis begins with measures of utilization (i.e., the current numbers of optometrist visits by age and gender). Importantly, utilization is the (potentially constrained) intersection of demand and supply, and is not in itself a measure of need. While the CCHS estimates regarding visits appear to be roughly in line with the clinical practice guidelines from the Canadian Ophthalmological Society: Clinical Practice Guideline Expert Committee (2007), it is possible that there exists current need/demand for services which is not being met. The finding that supply is growing faster than demand may therefore mean two different things: either the level of any unmet need/demand will be lower in the future or there will be an oversupply of optometrists relative to the need/demand.

Finally, it is worth mentioning that, while the analysis has been conducted only for Ontario, it has implications Canada-wide, as optometrists are largely free to move from one province to another to set-up practice. To date, however, Ontario appears to be among the provinces that have seen the highest growth in numbers of optometrists (see, for example, CIHI, 2010).

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Notes

1. Statistics Canada, CANSIM, table 052-0005.
2. An equilibrium would likely not be a simple intersection of a supply and a demand curve. In part, this is because there is a derived demand for optometric services, as the fundamental demand is for vision health, not optometric services per se. However, more directly, the market's institutions make it likely that any equilibrium would be complicated, and quite possibly constrained. Key market institutions and characteristics potentially influencing the equilibrium include the structure of optometry regulation in each province, the actions of various professional associations and education/training institutions, the array of public and private insurance programs paying for optometric services that introduce a gap between the patient and provider, the asymmetric information common in healthcare and Canada's immigration system.
3. For optometry, see the Canadian Ophthalmological Society: Clinical Practice Guideline Expert Committee (2007), which is addressed in the discussion section.
4. For a discussion of these and related issues, see Bärnighausen and Bloom (2011) and the references therein.
5. Eligibility rules were changed in 2011 to require more years of education before becoming eligible to apply to the IOBP. Thanks to Dr. Murray Turnour for helpful discussions.

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Improving Health Equity: The Promising Role of Community Health Workers in Canada

Amélioration de l'égalité en matière de santé : le rôle prometteur des travailleurs en santé communautaire au Canada



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Abstract

This article reports findings from an applied case study of collaboration between a community-based organization staffed by community health workers/multicultural health brokers (CHWs/MCHBs) serving immigrants and refugees and a local public health unit in Alberta, Canada. In this study, we explored the challenges, successes and unrealized potential of CHWs/MCHBs in facilitating culturally responsive access to healthcare and other social services for new immigrants and refugees. We suggest that health equity for marginalized populations such as new immigrants and refugees could be improved by increasing the role of CHWs in population health programs in Canada. Furthermore, we propose that recognition by health and social care agencies and institutions of CHWs/MCHBs, and the role they play in such programs, has the potential to transform the way we deliver healthcare services and address health equity challenges. Such recognition would also benefit CHWs and the populations they serve.

Résumé

Cet article fait état des résultats d'une étude de cas sur la collaboration entre une organisation communautaire qui emploie des travailleurs en santé communautaire (TSC) et des courtiers en santé multiculturelle (CSM) pour desservir des populations immigrantes et de réfugiés ainsi qu'une unité locale de santé publique en Alberta, Canada. Dans cette étude, nous avons exploré les défis, les succès et le potentiel non réalisé des TSC et des CSM pour faciliter l'accès aux services de santé et autres services sociaux par les nouveaux immigrants et les réfugiés. Nous estimons qu'il est possible d'améliorer l'égalité en matière de santé pour les populations marginalisées telles que les nouveaux immigrants et les réfugiés, et ce, en accroissant le rôle des TSC dans les programmes liés à la santé des populations au Canada. De plus, nous croyons que si les agences et institutions de santé et de services sociaux reconnaissent les TSC et les CSM, ainsi que leur rôle dans de tels programmes, cela pourrait transformer la façon de fournir les services de santé et de traiter les défis en matière d'égalité. Une telle reconnaissance serait aussi avantageuse pour les TSC et les populations qu'ils desservent.

DESPITE THE VIRTUAL UNIVERSALITY OF CANADA'S HEALTHCARE SYSTEM, marginalized populations, such as immigrants and refugees, continue to experience barriers to accessing the health system (Beiser 2005; Pottie et al. 2008; Pottie et al. 2011; Spitzer 2004). Various approaches to improving access are currently used by local healthcare institutions, for example, interpreters and patient navigators, or culture-specific programs (Black et al. 2006). In this paper, we examine a particular model of collaboration between a community health worker (CHW)/multicultural health broker (MCHB) initiative and a local public health unit focusing on perinatal health. Although more community outreach collaborations have been called for as a way to meet unaddressed needs (Green et al. 2013), little attention has been given to existing collaborations between "communities on the margin" and formal public healthcare systems. This paper adds to the emerging literature on

an independent CHW/MCHB model that provides culturally responsive access to healthcare services for new immigrant and refugee populations in Canada (Black et al. 2006; Meyer et al. 2003; Torres 2013). We also discuss the role of CHWs/MCHBs in addressing needs linked to social determinants of health.

We begin with an overview of CHWs/MCHBs in Canada. Thereafter, we describe the methods used in our study and present selected research results. We conclude with a discussion of the implications of the findings for more effective incorporation of CHWs/MCHBs within Canadian health systems.

First author's statement

The first author (ST) is an immigrant with past experience as a CHW. She has been actively involved in conceptualizing and implementing CHW programs for immigrant communities, in particular several initiatives targeting Hispanic populations in Canada. These experiences led her to the study reported herein, and a concern that a lack of formal recognition by health systems of the roles played by CHWs in population health programs not only limited their potential effectiveness in improving the health of marginalized populations, but also marginalized CHWs themselves.

Overview of CHWs

In this paper we use the term community health worker when referring to generic community outreach programs or practices delivered by front-line health workers who are members of the communities they serve. CHWs are considered to have a deep understanding of the issues faced by these communities in accessing health and social services, and are able to offer linguistically and culturally appropriate assistance.

Recent literature indicates that CHWs who share a similar cultural background with immigrants and refugees are better able to respond to the health needs of these populations (Wells et al. 2011). Similarly, literature on cultural brokering (bridging or mediating between different cultural groups to effect change) highlights the role of CHWs as cultural brokers in increasing access to, and enhancing the delivery of, culturally competent care (National Center for Cultural Competence 2004). Cultural brokering is an important concept in the study we report on, as it is the approach espoused by the Health Co-Op that constitutes our case (Ortiz 2003). The Health Co-Op adapted cultural brokering theory (Jezewski 1995) and developed their multicultural health brokering approach. The “cultural responsiveness” of CHWs has been an important component of their practice for more than five decades in low-, middle- and high-income countries, enabling them to address a variety of health issues (Andrews et al. 2004; Lewin et al. 2005). CHWs in high-income countries such as Canada often work in traditionally underserved areas or in communities experiencing vulnerability, frequently requiring cross-cultural competencies (Clark and Surry 2007; Hodnett 2003; Khanchandani and Gillam 1999; Rhodes et al. 2007; Swider 2002).

CHWs are mainly unlicensed professionals (whether paid or unpaid) with varying levels of academic or non-academic training. In Canada, as in many other countries, there is no

official coordination among institutions and organizations on the conceptualization, implementation and delivery of CHW training programs. This means that most health system institutions – public health units, community health centres and other community-based organizations – develop their training and curriculum independently.

CHWs and healthcare systems

CHWs can be linked to healthcare systems in one of two ways: either working directly within the formal system or operating independently. In either model, CHWs' abilities to reduce barriers to access to health services depend on their relationship to primary care or public health institutions (e.g., community health centres, hospitals, public health units and regional health authorities). Canadian evidence on these relationships (how they are organized and managed, and the range of activities supported) is slowly emerging in academic literature (Black et al. 2006; Meyer et al. 2003), but often remains located in grey literature (Black et al. 2007; Chiu et al. 2009; Pottie et al. 2008).

International studies reveal a variety of organizational and financial arrangements governing the use of CHWs. In countries like Brazil and Iran, CHW programs are publicly funded, with CHWs fully integrated within the formal health system. The size of the workforce is considerable in both of these countries, with Brazil employing 257,265 (Johnson et al. 2013) and Iran 31,000 (Javanparast et al. 2011) workers. CHWs in the US, estimated to number more than 121,000 (HRSA 2007), are recognized as part of the health workforce and have their own CHW Standard Occupational Category – SOC #21 – 1094 Community Health Worker – which recognizes these workers as a distinct occupation (Balcázar et al. 2011; Federal Register 2009).

In Canada, Australia and New Zealand, CHWs are not systematically integrated within government-funded universal healthcare systems, and there are little data on the size of this workforce.

Canadian CHWs had been disconnected from each other, but have recently formed the Community Health Worker Network of Canada – the first organization of its kind in the country. Among the concerns discussed by network members include the lack of recognition and the unregulated status of CHWs; the need to organize the workforce at the local, regional, provincial and national levels; the search for a single definition for their work; the need to conduct research on the workforce's composition and competencies; and the potential for adopting a set curriculum or standardized training for CHWs. Network members are also reflecting on how the two CHW practice models (independent or integrated, described below) affect their capacity to remove access barriers to health and other services in marginalized communities, or to serve as cultural brokers.

INDEPENDENT MODEL

In this model, independent organizations, often established by CHWs themselves, offer

services that target marginalized communities. These organizations and the CHWs working within them obtain contract funding to deliver their services independently of public health-care institutions, but often in collaboration with them. When funded, organizations retain complete autonomy in the work's conceptualization and programming. The wages and hours to deliver the services are not equivalent to those of CHWs, who may be working within the formal healthcare system; typically, funding allows for a mixture of part-time and full-time CHW employment. The Multicultural Health Brokers Co-Operative (hereafter called the Health Co-Op) and MCHBs in Edmonton fall within an independent CHW program model.

Independent models are marked by high levels of health promotion activity, as distinct from a focus on specific service delivery. The main health system's concern with independent models is that they may have less accountability and supervision, and that the CHWs may have less training, than CHW program delivery through integrated models. Furthermore, given the lack of resources, it may also be more difficult to evaluate service outcomes in independent models.

INTEGRATED MODEL

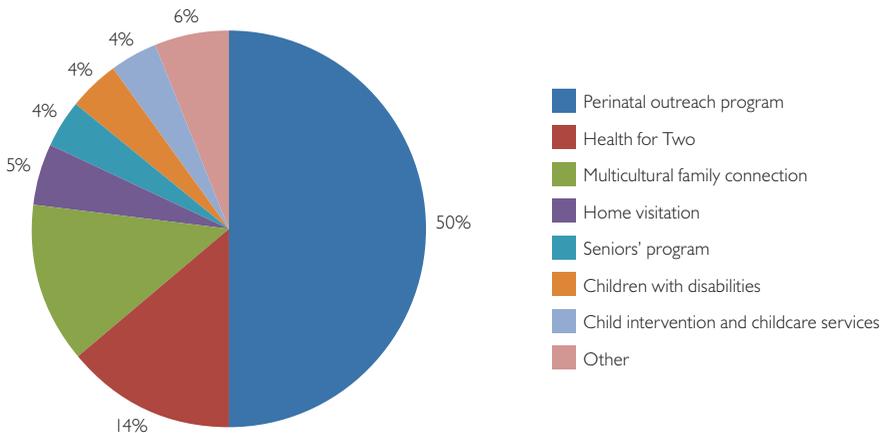
In this model, CHWs are staff within public health or primary care institutions, which have as part of their mandate the delivery of programs targeting populations experiencing marginalization. The CHW programs in Brazil and Iran are examples of highly integrated models. In Canada, the Women's Health Educators, CHWs who work within Hamilton's Ontario Public Health division (Black et al., 2007), are an example of an integrated model. These workers are usually well-paid with good benefits, as well as reasonable work hours and caseloads, which is often not the case for CHWs operating in independent models. Generally, CHWs and their professional allies in public health units reach out to marginalized communities with specific programs and key health messages. In situations of pandemics, they orchestrate campaigns to ensure that contagious diseases do not spread among these populations. Other Canadian examples of integrated models include the Multicultural Health Team operating under Ottawa Public Health and the Toronto Public Health Unit Peer Nutrition workers who reach out to immigrant and racialized communities. One concern with the integrated model is that its responsiveness to marginalized community concerns may be constrained by requirements for bureaucratic approval that is often needed for new initiatives. Another concern with this model is that CHWs are more and more focused around fulfilling technical activities and practices traditionally performed with the scope of health services rather than focused on intersectoral actions, community development and social participation (Rodrigues Fausto et al. 2011).

Methods

Data for this paper are a subset of a case study conducted for the first author's doctoral research. The investigation applied an instrumental case study design (Stake 1995) to examine issues that went beyond the case itself (Stake 2006).

The study analyzed two sub-programs of the Health Co-Op as embedded mini-cases (Yin 2003): the Perinatal Outreach program, funded by Alberta Health Services (AHS), and the Health for Two program, funded by the Canada Prenatal Nutrition Program and AHS. Finally, the study examined the MCHBs' practice to understand their role as part of a health human resource workforce that operates independently of the healthcare system. When discussing the Health Co-Op workers, we use the term MCHBs, as this is how they refer to themselves. The case study triangulated multiple research strategies and data sources, including participant and direct observation, in-depth interviews, document review and analysis of policy and other documents and quantitative analysis of the MCHBs' client caseload database (n = 3,442). Data also included descriptive and analytical field notes taken throughout the course of the onsite research. This paper centres on the analysis of 23 of the 44 qualitative interviews conducted for the study (16 of these interviewees were MCHBs working for the Health Co-Op and seven were health professionals within AHS), as well as data from the MCHBs' client caseload database. Interviews were conducted between July 2009 and May 2010. The database included caseloads of 46 MCHBs (and some supervisors or mentors) for the 12-month period between September 2009 and September 2010 (MCHB Co-op 2010b). Depending on the program, an MCHB case was defined as a mother with a child or children 0 to 6 years old, a family with a child with a disability, the parents whose children are experiencing abuse or neglect, or a senior experiencing isolation (see Figure 1). Hand-coding and the qualitative analysis software QSR Nvivo8 were used in coding and data management. Inductive analysis was conducted for the interviews, and descriptive analysis was performed on the MCHBs' client caseload database.

FIGURE 1. MCHB client caseload



Source: Torres, S. 2013: 112.

Findings

The health Co-Op and MCHBs

The Health Co-Op's independently run programming has been offering culturally responsive services ever since its founding in 1998. The Health Co-Op's 54 MCHBs offer an important contribution to public health workforce development and a unique Canadian CHW model. MCHBs provide culturally and linguistically appropriate services to immigrant and refugee families from at least 18 different cultural backgrounds, and collectively are able to speak 29 languages (MCHB Co-op 2004a).

One MCHB explained the need to provide services that are culturally relevant to women, even if that includes bringing "cultural food" to a new mother in the hospital:

Yeah. Sometimes, like, you know, she had a baby at 6 o'clock ... at night, or 7, or 8, 9, 10 o'clock at night ... she has nobody, she has no language ... she's in the hospital, and she's calling you. ... Of course, you have to take certain food from your country, ... because she's not going to eat the food that they're giving her ... So there are certain things you go out of your way because you know what it is like. ... When they call you it is because they are desperate in that time, so some things ... you have to do.

MCHBs do home visits to pregnant women and new mothers, accompany patients to doctors' appointments, take mothers and children to vaccination clinics and accompany women during child labour and delivery. MCHBs also do group work, undertake community development initiatives and provide educational outreach on chronic disease prevention and management, as well as offer family intervention programs to address child abuse and neglect. MCHBs work independently of health and social service government ministries while being funded by them; the AHS Edmonton Zone has funded MCHBs for the past 15 years. Under the 2009–2010 Perinatal Outreach service contract, the Health Co-Op received just over \$300,000 dollars from AHS' Maternal Child funding envelope to serve 2,340 families, representing approximately 10% of Edmonton families with births (MCHB Co-op 2010b). Pursuant to this agreement, MCHBs received training by AHS public health nurses on issues related to prenatal and postnatal health. As an independently run Health Co-Op, MCHBs control and manage their time to meet the needs of their clients, sometimes making themselves available to help clients in the evenings or on weekends, which mainstream health service providers typically do not do. These types of services, however, are not fully financed by AHS, and MCHBs often use their "own time," as they describe it, to support immigrant and refugee women and their families, effectively subsidizing the publicly funded program. Indeed, being available to support mothers in times of need is what often makes it possible for MCHBs to do their perinatal work. As one MCHB stated:

... let's say Saturday one crisis comes, ... or evenings, ... I have to go to the hospital, mom is in labour ... she needs someone, she has no one there, I can't say it's not my working hours, so I stay there, you know, long time so!

MCHBs also assist families with other needs linked to social determinants of health, including helping families to fill in forms for the child tax credit, schooling, employment insurance or undertaking child intervention/protection work.

Figure 1 illustrates the MCHBs' caseload, including health and other related programs. While the Perinatal and Health for Two programs funded by AHS occupy 64% of the workers' reported caseload, the child intervention (or child protection) program uses only 4% (MCHB Co-op 2010a). In real terms, however, the latter program is more demanding because victims of family violence require intense support over a long period. MCHBs who work in violence prevention and child intervention receive training in these areas from Alberta Children Services to make sure that MCHBs are aware of their legislative responsibilities as workers.

Finally, MCHBs developed their own multicultural health brokering theory to guide their practice (Ortiz 2003). Multicultural health brokering is a relationship-based practice based on trust and confidence established between MCHBs and the women and communities they help (Torres 2013).

The practice standards of MCHBs' daily activities embody both the principles and the values of health brokering theory (Ortiz 2003). These standards are:

... specific guidelines to guide Multicultural Health Brokers in their day-to-day practice. The practice standards are codes of conduct that will help support decisions and actions of the worker in an ethical and appropriate manner (MCHB Co-Op 2004b:8).

They are based on a dedication to empowering people and communities; are rooted in the wisdom, knowledge and culture ways of people; and are based on principles of social justice, equity and democracy (MCHB Co-op 2004b). The worker Health Co-Op structure facilitates the MCHBs' ability to follow and advocate for these principles.

MCHB practice is unlike other CHW models in Canada because MCHBs do not focus only on service delivery and community development, but also engage with communities in their role as health brokers.

MCHB interviews revealed their commitment to responding to health and social needs of the communities, whether or not the Health Co-Op received funding to service those needs. MCHBs viewed this situation as reflecting a growing gap in access to health and social services, which would require multi-ministry and multi-stakeholder support to address.

Perspectives from health professionals

Alberta's health system has undergone several rounds of restructuring in the past two decades, although the funding for the MCHB program has been maintained. All AHS health professionals in the study indicated that the MCHB Perinatal Outreach program was valuable. Firstly, MCHBs helped the health unit to meet its mandate to serve immigrants and refugees, and the health unit's staff and managers to learn about immigrant and refugee communities from the MCHBs.

One health professional stated:

Well, I don't think we could do our work without them ... I think that they're hugely influential in the outcomes ... I mean certainly there's a role for both of us [public health] within helping that family with health outcomes, but ... the brokers ... we really depend on them.

Secondly, MCHBs understood different cultures, provided culturally appropriate services and were able to help clients in different areas:

I'm completely convinced that every single newcomer to the country should have a health broker, I mean, I have no doubts about that ... immigrant families manage fairly well in comparison to the refugee families, but the refugee families really struggle and should, do need that kind of support, I feel quite strongly.

Thirdly, MCHBs have helped most health services providers in the city to understand the need to look at "culture" when serving immigrants and refugees. One professional explained:

... And like I said it's not just about the language, it's about the whole cultural appropriateness and navigating the system.

Finally, MCHBs are not interpreters, they are cultural brokers. When they accompany patients to medical appointments, they help health professionals to understand clients' issues better, especially when the client does not speak English fluently. One health professional referred to MCHBs' contributions to the health system as "saving lives."

Most health professionals thought that the health system was responding well to the perinatal care needs of existing immigrant and refugee communities, but was not providing adequate funding to provide for new cultural groups arriving in the city. Consequently, the Health Co-Op has had to divide funding received from AHS Edmonton Zone to serve more communities. This means that, owing to the high demands on MCHBs' time and the lack of funding to support their work, MCHBs are at "maximum capacity." AHS health professionals also acknowledge that MCHBs' wages are not at the same level as other staff in the system doing similar jobs.

Discussion

The collaboration between an independent MCHB model and AHS' public health unit in Edmonton reveals the complementary role that MCHBs can play in meeting the health system's mandate to reduce barriers to marginalized populations' access to services. The MCHB model illustrates the importance of addressing health needs of immigrants and refugees through culturally and linguistically appropriate services that target issues linked to social determinants of health.

This article focused on the uniqueness of the MCHB Edmonton model because of its relevance to other cities and provinces in Canada that may wish to improve access to health and other services by working with CHWs operating independently of the formal healthcare system. We believe, however, that both independent and integrated CHW models have a role to play in improving the effectiveness of the Canadian health systems. Understanding and recognizing the different models in which CHWs/MCHBs contribute to the health system is important for three reasons: these workers are part of the health human resources workforce; these workers target many populations (e.g., immigrants, Aboriginal people, women and children, people living on low income); and they foster collaboration between communities in the margin and public and primary care institutions, which can potentially reduce cost by improving health outcomes for members of these communities.

From a public policy perspective, and using the Province of Ontario as an example, the public health standards of the Ministry of Health and Long Term Care (MOHLTC 2008) could explore how both the CHW/MCHB independent and integrated models can help in meeting the provincial standards governing boards of health. These standards are minimal criteria to ensure that barriers to accessing public health programs and services, such as language, economic circumstances and discrimination (MOHLTC 2008), are reduced. Barriers can include, but are not limited to, lack of education, low literacy levels, language, cultural differences, geography, economic circumstances, discrimination (e.g., age, sexual orientation, race), social factors (e.g., social isolation) and mental and physical disability (MOHLTC 2008). CHWs/MCHBs working in a health brokering capacity are able to address several of these barriers.

CHWs/MCHBs are also well-placed to identify emerging needs among communities and to aid the health system in preventing families from falling through service gaps.

Undervaluing CHWs/MCHBs' work, however, can result in reduced uptake of services, compelling marginalized populations to delay seeking care or to present at emergency departments (Khandor et al. 2011), resulting in higher costs for the healthcare system (Crighton et al. 2007). By implication, federal, provincial and territorial health ministries should consider formal recognition of CHWs/MCHBs as part of the health workforce. This may involve multi-ministry investment of sufficient funding to cover all the work hours of CHWs/MCHBs to fully deliver the required services, including the important support work (Armstrong and Armstrong 2010) CHWs/MCHBs provide to marginalized populations.

Conclusions

This paper, based on empirical research, described the collaboration between MCHBs in Edmonton and the local public health unit's maternal child health area to remove barriers to accessing perinatal health for immigrant and refugee women and their families. It also illustrated the strategies used by MCHBs to address the complex realities of these families, owing to other needs linked to social determinants of health, and highlighted the linguistically and culturally appropriate nature of their work. Additionally, the paper advanced a case for the formal recognition of CHWs/MCHBs working in both independent and integrated models as part of the health human resources workforce, although not recognized as such.

The collaboration model described in this paper and the linguistically and culturally appropriate nature of MCHB work are part of their commitment to building a new community of practice to address the perinatal health and other social needs of immigrant and refugee families (Torres et al. 2013). This community of practice is based on MCHBs' ability to articulate, reflect on and monitor their practice; to operate and sustain an independent organization; to develop and maintain and seek intersectoral, cross-governmental collaboration; and to develop programs that address the social determinants of health (Torres et al. 2013: 316).

CHW/MCHB policy and programs represent an innovative approach and their adoption by other health systems in Canada could spearhead a new, transformative community health workforce.

As one of the first in-depth studies about CHWs/MCHBs in Canada, this work holds promise for shaping and influencing the rise of a new generation of evidence-informed population health programs in the country. Doing so will benefit the workers, the population they serve and the healthcare system.

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Improving Health Equity: The Promising Role of Community Health Workers in Canada

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Inadequate Performance Measures Affecting Practices, Organizations and Outcomes of Ontario's Family Health Teams

Mesures inadéquates du rendement qui affectent la pratique, l'organisation et les résultats pour les équipes de santé familiale en Ontario



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Abstract

Background: Emphasis on quantity as the main performance measure may be posing challenges for Family Health Team (FHT) practices and organizational structures. This study asked: What healthcare practices and organizational structures are encouraged by the FHT model?

Methods: An exploratory qualitative design guided by discourse analysis was used. This paper presents findings from in-depth semi-structured interviews conducted with seven policy informants and 29 FHT leaders.

Results: Participants report that performance measures value quantity and are not inclusive of the broad scope of attributes that comprise primary healthcare. Performance measures do not appear to be accurately capturing the demand for healthcare services, or the actual amount of services being provided by FHTs. Results suggest that unintended consequences of performance measures may be posing challenges to access and health outcomes.

Conclusion: It is recommended that performance measures be developed and used to measure, support and encourage FHTs to achieve the goals of PHC.

Résumé

Contexte : L'accent mis sur la quantité à titre de principal mesure du rendement peut présenter un défi pour la pratique et la structure organisationnelle des équipes de santé familiale (ESF). Dans le cadre de cette étude, nous nous sommes demandés quels types de pratiques et de structures organisationnelles sont favorisés par le modèle des ESF?

Méthode : Nous avons employé une conception exploratoire qualitative éclairée par une analyse du discours. Cet article présente les résultats d'entrevues en profondeur semi-dirigées menées auprès de sept décideurs et 29 dirigeants de ESF.

Résultats : Les participants ont rapporté que les mesures du rendement valorisent la quantité et ne rendent pas compte du large éventail des caractéristiques qui composent les soins de santé primaires. Les mesures du rendement ne semblent pas saisir avec précision la demande pour les services de santé ou le montant réel de services fournis par les ESF. Les résultats font voir que les répercussions non désirées des mesures du rendement peuvent présenter des défis en matière d'accès et de résultats sur la santé.

Conclusion : On recommande le développement et l'utilisation de mesures du rendement pour mesurer, appuyer et favoriser les ESF dans l'atteinte des objectifs des services de santé primaires.

FAMILY HEALTH TEAMS (FHTs) ARE ONE MODEL OF PRIMARY HEALTHCARE (PHC) in Ontario, implemented in 2005. FHTs aim to improve access to comprehensive and collaborative patient-centred care (Aggarwal 2009; MOHLTC 2004, 2010). This article presents findings from a study that asked: What healthcare practices and organizational structures are encouraged by the FHT model?

Patient enrolment, or “rostering,” is a core component of the FHT model (Fleming n.d.; MOHLTC 2005) and refers to a process in which patients register with an organization, team or provider (Aggarwal 2011; MOHLTC 2005). Patient enrolment is used to help determine funding and compensation in FHTs (Fleming n.d.; Health Force Ontario 2014), and aids accountability, quality improvement and performance measurement (Hutchinson 2008).

Performance measures are tools that influence healthcare practices, priorities, organizational structures, processes and health outcomes (Campbell et al. 2003; Félix-Bortolotti 2009; Haggerty et al. 2007; Sandy et al. 2009). Performance measures refer to parameters whereby services and programs are measured (Aggarwal 2011). Research on performance measures from a Canadian PHC context is relatively new (Johnston et al. 2008).

Methods

An exploratory qualitative design was used, guided by Gee's (2011) approach to discourse analysis that sees meaning emerging from a combination of saying (informing), doing (action) and being (identity). One of the reasons why this approach to discourse analysis was selected for this study is because it parallels Donabedian's (1966) influential framework (Table 1).

TABLE 1. Discourse analysis: saying, doing, being

Discourse	Discourse definition	Study focus
Saying (informing)	An oral or written communication; <i>utterance</i>	Identified aim
Doing (action)	Socially situated activity or practice	Healthcare practices
Being (identity)	Socially situated identity	Organizational structures

Semi-structured interviews were conducted with seven key policy informants (PIs) and 29 FHT leaders. PIs were Ministry of Health and Long Term Care (MOHLTC) policy makers and decision-makers, or consultants who helped develop the FHT policy. FHT leaders were those active in leadership positions, namely, 10 physicians, 15 executive directors and four clinical leaders. Purposive and snowball sampling were used to identify PIs. Stratified purposive sampling (Miles and Huberman 1994) was used to guide sampling of FHT leaders around geography and the wave (or year) that FHT application was approved.

Snowball sampling informed the sample because four FHT leaders initiated suggestion of additional participants. Interviews were conducted using a semi-structured interview guide and occurred in-person or by telephone. Modification was made to the interview guide as interviews progressed so that emerging topics were explored (Miles and Huberman 1994) (Table 2).

TABLE 2. Interview guide

Policy informant interview guide	Tell me about your role in shaping the Ontario Family Health Team policy. What do you consider the key policies guiding the Ontario Family Health Teams? What helped to guide you in the development of the Ontario Family Health Team policy? What were/are the goals of the Ontario Family Health policy? What would you say are the greatest strengths of the Ontario Family Health policy? What would you say are the limitations of the Ontario Family Health policy?
FHT leaders	Tell me about the background of this Family Health Team. In what ways has provincial policy assisted your Family Health Team? In what ways has provincial policy been challenging to your Family Health Team? What does this Family Health Team hope to accomplish?

Individual interviews were conducted with seven PIs and 20 FHT leader interviews; also, four interviews with FHT leaders were conducted as group interviews (one group of three participants, three groups of two participants) at request of the participants involved in those four small groups. All interviews were audio-recorded and transcribed (see Table 3 at www.longwoods.com/content/23929).

Constant comparison was used to capture major themes and break the data into manageable parts (Cresswell 2007). Gee’s (2011) discourse analysis framework then guided the second phase of analysis. Each participant has been assigned a code that will be used in the presentation of data in the form of quotations: PIs have been assigned the code “PI” followed by a number. FHT leaders have been assigned the code “L” followed by a number.

Results

This paper presents findings that demonstrate that inadequate performance measures are being used to evaluate the success of FHTs. Findings suggest that performance measures largely informed by patient enrolment numbers present challenges to healthcare practices, FHT organizations and health outcomes.

Saying: valuing quantity

According to the data, the primary measure used to determine the success of FHTs is the number of individual patients enrolled with FHT physicians: "The increased emphasis on access and unattached patients as we call them, has meant that we've become more and more disciplined and expect more discipline from the [FHTs] in terms of meeting enrolment targets" (PI4). FHT leaders described an emphasis on using quantity as a key measure of success: "There are formal outcomes that the Ministry's looking for. Those are really around visit numbers and roster numbers" (L4). Another FHT leader states, "What we're told is we're measuring [FHT] success by ... how many people we've rostered" (L23).

Participants described challenges related to this emphasis on quantity: "One of the biggest challenges is ... where we all want to go and what the Ministry's currently right now asking us to submit – and that's just volume-driven-type quantity. We want quality, they want quantity" (L8). Another FHT leader stated, "There's got to be a better way that we can measure our success" (L23.1). These data suggest that other attributes of PHC that also shape FHTs are neglected: "All of the other things which make up the value proposition of primary care to its population that it serves are absent; all we have is this microscope on the wrong numbers" (L10.1). Another FHT leader voices concern with measures being used to determine success: "The way that they measure success is not necessarily how I would measure success. They measure success by how many rostered patients have you enrolled For us, we would rather look more at patient outcomes We're more interested in things that actually make a difference in the practice" (L8). This FHT leader went on to state, "I think that's where we'll have a bit of a disconnect between what is success. I really truly don't believe what they're measuring is success at all" (L8). The following FHT leader demonstrates how there is incongruity between measures being used to determine FHT success and quality of healthcare services:

On paper, they can show that lots more people can say that they have a healthcare provider today than they did before the Family Health Team. But, I think a lot of people would say and still say that they have difficulty accessing their primary care provider ... that goal has not been met and part of the reason is the ... drawbacks to the rostering system ... if you have any sort of business sense you soon realize that I don't have to be in my office ... but still have this income stream coming in I don't know if physicians are spending as much time in the office as they were beforehand when they were fee-for-service. I would say that there is incentives to sign people up and roster them. (L20)

Doing: volume influencing practice

Based on the data analysis, inadequate measures are influencing healthcare practices in two ways. First, specific healthcare practices are being implemented in response to demands of patient volume. Second, healthcare practices are encouraged to include programs that promote greater numbers of encounters. Although patients are enrolled to individual physicians, the emphasis on patient volume affects practices of other healthcare providers within the FHT. For example, one PI described how patient volume has influenced the practice of dieticians: "Dieticians have traditionally provided one-on-one counseling and they are finding that the volume of patients needing their care has been so overwhelming that they're starting to do group work" (PI2). Although there may be benefits to group work, the PI states that group work is a way to keep up with demands.

Another FHT leader described challenges of emphasizing success based on quantity of encounters in relation to a particular disease:

When you're told to report your number of transactions by chronic disease, by allied health professional, essentially what that is saying is take these allied health professionals and have them do programs. And if you want to spend a lot of money, that's how you do it because then every diabetic becomes a client of the program You can go endlessly to all the sort of programmatic transaction based things that programs can do. But what you end up doing is hardly impacting at all on the actual patient-oriented outcomes that are important to the population. (L10.1)

The FHT leader continued on by stating that these measures of success are not reflective of the experiences of physicians and makes reference to an uproar on a physician's listserv:

There was a firestorm and it was a backlash reaction to what they were using as indicators. There was a sense that they didn't really reflect what practitioners understood and sensed was the reason why they were practicing primary care ... I rarely ever see a diabetic where it's an access or clinical challenge in my practice. Those that don't achieve outcomes usually don't for particular reasons. (L10.1)

FHT leaders also described how inadequate performance measures detract from person-centred care. For example, one FHT leader stated: "Patients just don't present as one problem Patients aren't a disease" (L12.1). Another FHT leader agreed: "How do we manage patients as patients, not as disease-specific?" (L21). Participants raised concerns that current performance measures are inadequate for supporting person-centred care. One FHT leader indicated that even multiple diseases pose a challenge for these measures: "How do we care for patients with multiple co-morbidities as opposed to just focusing on one disease, specific disease?" (L21). One PI recognized that current measures are presenting challenges: "Person-centred care diminished with the accountability framework" (PI2). Another PI agreed:

Inadequate Performance Measures Affecting Practices, Organizations and Outcomes of Ontario's Family Health Teams

Working right now ... is voluminous and it's about just ploughing through the numbers, which makes it hard to look up and out. There's a tendency to be looking down ... it's about two things – managing within ... budgets and having good accountability I would argue that client care gets talked about secondly, thirdly. (PI7)

This PI continued to describe how volume detracts from person-centred care because of the resulting time and care demands on physicians: "Docs don't have time within whatever their funding model is ... and with the kind of patient loads that they have to address" (PI7). An additional concern identified in the data is the influence of inadequate measures on the organizational structure of FHTs.

Being: organizational impact

Participants expressed concerns about the organizational impacts of inadequate performance measures. One concern is in the allotment of funding for interdisciplinary health providers. According to one FHT leader, the MOHLTC's method of assessing success does not adequately reflect the amount of care actually being provided in FHTs, which may put funding at risk. In this case, the FHT leader described how patient enrolment is not an accurate assessment because some patients choose not to enrol:

It has an implication for policy, because those people will still use our services, we don't prevent them from doing so, but their numbers are not included in the count that the Ministry uses to judge our success. So, if those people generate visits for our dietician and yet the Ministry would say, "Oh well, you don't have a very big roster. Your roster's not large enough to support a full-time dietician. We're going to cut your funding." (L4)

According to the above FHT leader, the measure being used to determine success is not accurately representing the real demands of healthcare and may impact funding for interdisciplinary health providers. Participants described how the patient enrolment is not an accurate representation of healthcare services, particularly in Northern communities. According to FHT leaders, patient enrolment is not working for First Nations' people. One FHT leader stated, "Aboriginal people don't want to roster, as a generalization, not all" (L2). Another FHT leader agreed, "The First Nations' component is difficult ... they don't like to roster" (L3). When asked the reason why patient enrolment is not working for First Nations' people, a FHT leader stated, "It's a trust issue, that's part of it. I think it's a trust issue. I think it's a cultural piece" (L2). Another FHT leader was unsure of the reasons why First Nations' people were more adverse to patient enrolment, "Many of them are not rostered and they will not roster and I'm not sure why. So, they just sort of come when they need to come and I think they are a little hesitant about rostering" (L11). One FHT leader further expands:

The First Nations' component is difficult. First of all, they don't like to roster. Secondly, they go for care sort of traditionally all over ... part of the problem with that is that if you are rostered patients and you seek care elsewhere, your physician is financially penalized So, physicians have been reluctant to roster First Nations' people. (L3)

Participants indicated that healthcare services are being provided to patients who are not enrolled. Interdisciplinary healthcare provider funding based on an inaccurate measure of healthcare demands may impact some FHTs.

Health outcomes: volume emphasis encouraging acuity

An additional concern raised by participants is that some practices may be more focused on meeting the expectations of numbers and less about quality care. For example, using patient enrolment numbers as a key measure of success only provides an assessment of effort regarding quantity of individuals who are enrolled; evaluation of patient experiences, adequacy of healthcare practices and health outcomes are excluded. This concern is elaborated by the following FHT leader: "I think that there are practices providing poor services and getting paid a lot of money because they rostered the world and don't service them" (L10.1).

Inadequate measures may even result with individuals who require care being excluded from FHTs. According to the following FHT leader, increasing patient volumes means being selective about which individuals are accepted as patients: "If we wanted to manipulate the system, if it's all about roster, then we would cherry pick which patients we got because then we'd want single males ... healthy ... with no issues, because then our physicians could take on 2,000 patients each" (L21). According to this FHT leader, single healthy males require the least amount of healthcare services. This FHT leader suggests that healthy individuals requiring fewer healthcare services are desirable for patient enrolment; less demands for services means that more individuals can be enrolled, thus increasing patient volume. Individuals with simple health issues do not require extensive services because their care needs are minimal. According to the following FHT leader, exclusion of those most requiring healthcare services may lead to acute issues:

What that means in medicine ... is oftentimes you get people in the worst case of the course of whatever illness or issue that they have, because they've waited until the last minute in that they don't have actual access for preventative or earlier intervention or use of services that would have actually mitigated the issue in the first place. So we end up becoming quite responsive on the acute end. (L23.2)

This participant describes how achieving measures of success at time of this study is ineffective in the promotion of healthy outcomes.

Discussion

Participants described how using patient enrolment and contact numbers as a main performance measure for FHTs provides limited information and that the broad scope of attributes that inform quality PHC is absent. The emphasis on quantity as a measure of FHT success is presenting challenges to those who strive to meet the intended goals of FHTs. Quantification of results can provide useful information such as the numbers of individuals who use a particular program. This study suggests that there is an absence of additional information on quality and, as a result, care of the individual has become lost in performance measures (Johnston et al. 2008).

A challenge of performance measures, like described by participants in this study, is that a focus on achieving measureable targets may pose challenges to the quality of patient care (Johnston et al. 2008). Healthcare practices are being implemented in response to volume that is emerging as a result of the measures rather than best practices. Not only is the emphasis on quantity not encouraging congruency of FHTs with PHC attributes, the measure of quantity of patients rostered does not always result in accurate numbers. Patient enrolment numbers refer to those patients enrolled by a physician, but tell nothing of the quality of service being provided by the physician and exclude the other health professionals who are part of the care team. Given the broad scope and relational nature of PHC, quantifying outcomes only provides part of the picture. As well, the emphasis on quantity as an evaluation tool poses challenges for social workers and other allied health professionals in FHTs to demonstrate their effectiveness and the extent of their contributions. With FHTs being a newer model of PHC, and performance measures suited for a Canadian PHC context still in infancy (Johnston et al. 2008), there is a risk of unintended consequences occurring, such as the ones described in this study (Powell et al. 2011).

Powell et al. (2011) describe how unintended consequences of performance measures can influence patient-centred care, as well as provider morale. Participants in this study described some healthcare practices driven by a need to increase numbers, and the need to keep up with the volume of patients, rather than measures of the effectiveness of interventions. This further heightens a concern for interdisciplinary healthcare providers. Despite increased access to various healthcare professionals in FHTs, it remains concerning that healthcare services provided by the interdisciplinary providers like dietary and social work might be influenced and shaped in response to the demand of volume. This may not be the most effective approach if the aim is to impact health outcomes.

Although there is no evidence in the data, the emphasis on inadequate measures involving number of rostered patients and number of patient encounters makes it worthwhile to hypothesize one additional impact: encouraging inclusion of interdisciplinary health professionals whose practice results in increased numbers. Such allied health professionals may be considered more valuable when determining which healthcare professionals to hire, particularly for FHT leaders who may not have extensive knowledge about the roles of the various health professionals. If performance measures emphasize quantity, then the interdisciplinary

health professionals who would be most desirable additions to the FHT team are those who would increase number of patients and number of patient interactions. An alternative view might be to include health professionals based on ability to impact health outcomes. Inadequate performance measures that focus solely on patient volumes can impact healthcare practices in a way that detracts from timely attention to healthcare needs.

A significant concern arising from the use of inadequate performance measures is the resulting encouragement of acuity in health outcomes. Current performance measures are inadequate because they encourage the exclusion of individuals who may require higher demands of healthcare services. Kalucy and colleagues (2009) warn that patient enrolment may decrease equity if providers are encouraged not to enrol high-need patients.

It must be acknowledged that measuring outcomes in an FHT setting is very complex because of varying factors – no two FHTs are alike. For example, differences exist between FHTs in terms of composition, both in number of providers and the type of health professionals involved; diverse patient populations; differing local resources; and even geographical variations. Given the diversity between FHTs, it is understandable that enrolment numbers provide data that are timely and consistent (Aggarwal 2011) across all FHTs. Some aspects of PHC are easier and less costly to measure than others. For example, patient enrolment numbers are easier to measure than other qualities such as trust, patient-centred care and cultural sensitivity (Johnston et al. 2008). Studies have shown that patient enrolment in PHC results with lower health system costs (Kralj and Kantarevic 2012). Further, a group of experts advocate for Ontario to continue implementation of patient enrolment models (Aggarwal 2011). There is value to patient enrolment. However, findings of this study suggest that the emphasis on patient enrolment with exclusion of other attributes of PHC is problematic.

Participants in this study were asked to comment on ways that provincial policy has challenged their FHT. Results presented in this article highlight the challenges that participants described. A limitation of this study is that participants were not probed for their opinions on alternatives to these existing challenges. However, this is an area of priority for stakeholders across Canada who aim to meet the needs of policy makers, PHC providers and organizations (CIHI and HQO 2013).

Conclusion

FHTs are experiencing challenges from inadequate performance measures emphasizing volume over other attributes and goals that FHTs are working towards, such as quality person-centred care. The demand for health services created by the volume of patients and patient encounters has presented challenges for physicians and interprofessional healthcare providers. Performance measures do not appear to be accurately capturing the demand for healthcare services, or the actual amount of services being provided by FHTs. Although a large number of patients have enrolled with FHT physicians, some patients choose not to enrol and continue to receive healthcare services from FHTs. The non-enrolled patients receiving healthcare services from FHTs may not be recognized in the formula used to

Inadequate Performance Measures Affecting Practices, Organizations and Outcomes of Ontario's Family Health Teams

determine funding for interdisciplinary providers. It is recommended that performance measures be developed and used to measure, support and encourage FHTs to achieve the goals of PHC. It is recommended that performance measures be developed for FHTs' complex and diverse environment. Based on these findings, FHTs that are successful in the implementation of quality person-centred care appear to be doing so despite the emphasis on quantity over quality.

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Media Coverage of Youth Suicides and Its Impact on Paediatric Mental Health Emergency Department Presentations

Couverture médiatique du suicide chez les jeunes
et répercussions sur les visites aux services des urgences
en santé mentale pédiatrique



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Abstract

Background: To examine mental health (MH) presentations to the emergency department (ED) of a paediatric hospital following two highly publicized local teen suicides.

Methods: Youths aged 12–18 years with a MH chief complaint and/or diagnosis were included. Differences in frequencies were analyzed using chi-square tests, and relative risks were evaluated using generalized linear modelling.

Results: Significant increases in the number of ED presentations were found within the months of the publicized suicides compared to the same months of previous years. No differences were found in symptom acuity, suicidal status and psychiatric hospitalization rates. Significant increases were found in relative risk of presenting to the ED 28 and 90 days post both publicized suicides.

Conclusions: Results suggest there was an association between highly publicized suicides and an increase in the number of MH presentations to the local paediatric ED. Considerations of media's potentially positive role in MH awareness are needed.

Résumé

Contexte : Examiner les visites pour raison de santé mentale aux services des urgences d'un hôpital pédiatrique suite à deux suicides d'adolescents fortement couverts par les médias locaux.

Méthode : Les jeunes de 12 à 18 ans avec un motif de consultation et/ou un diagnostique lié à la santé mentale ont été inclus dans cette étude. Les différences dans la fréquence ont été analysées au moyen du test de chi carré et les risques relatifs ont été évalués par modélisation linéaire généralisée.

Résultats : Nous avons observé un accroissement significatif des visites aux services des urgences dans les mois qui ont suivi l'annonce des suicides, comparativement aux mêmes mois de l'année précédente. Nous n'avons pas observé de différences dans la gravité des symptômes, le statut suicidaire et les taux d'hospitalisation pour raisons psychiatriques. Nous avons observé un accroissement significatif du risque relatif de se présenter aux services des urgences de 28 à 90 jours après l'annonce des suicides.

Conclusions : Les résultats font voir qu'il y a un lien entre les suicides hautement médiatisés et un accroissement du nombre de visites pour des raisons de santé mentale aux services des urgences d'un hôpital pédiatrique local. Il est nécessaire de se pencher sur le rôle potentiellement positif des médias dans la prise de conscience sur la santé mentale.

TWO RECENT YOUTH SUICIDES IN THE OTTAWA REGION GARNERED TREMENDOUS media attention and personalized the risk associated with paediatric mental illness for all community members. The first was the death of Daron Richardson, the daughter of Ottawa Senators assistant coach and longtime National Hockey League (NHL) player Luke Richardson, on November 12, 2010. Immediately following her death, Daron's parents held a press conference explaining her suicide. Subsequently, many friends, her own

hockey teammates and family members were interviewed and her memorial received extensive media coverage. In January 2011, attention to youth mental health (MH) and suicide was further augmented as school friends launched the Do It for Daron challenge, which became the DIFD Foundation. Today, the DIFD Foundation has spread beyond the Ottawa region, and many organizations (including the NHL) continue to promote the awareness of youth MH and suicide.

On October 14, 2011, Jamie Hubley, the son of Ottawa city councillor Allan Hubley, committed suicide. His death also received extensive media coverage and his parents openly discussed his suicide with the media. Unlike Daron, who did not have a history of mental illness and whose suicide did not seem to have any prior signs, Jamie was diagnosed and being treated for depression. In his blog, Jamie acknowledged his distress as a result of repeated peer bullying for being gay and that he often contemplated suicide.

Suicide and the Media

Many studies have looked at the effect of media coverage on suicide rate in the general population (Siask and Värni 2012). Two phenomena are used to describe the association between suicidal behaviour and media exposure: the Werther effect (Gould 2001) and the Papageno effect (Niederkrotenthaler et al. 2010). The Werther effect refers to the positive correlation between media exposure of a suicide event and subsequent suicidal behaviour in the population (Gould 2001). When a suicide event occurs, a dose–response relationship is evident such that suicides increase in proportion to media attention (Gould 2003). Suicide clusters, or imitative suicides, are more frequent in teens and young adults, and suicide risk increases with the number of shared characteristics between the victims (age, gender, peers and family members) and the popularity of the suicide victim (Gould 2001). Canada, along with numerous countries, has imposed news reporting guidelines to decrease the potentially negative effect of media attention surrounding suicides (Gould 2001, 2003). In Canada, the guidelines urge the media to avoid: perpetrating the myth that suicide is unexplainable, identification with the victim through the use of pictures, descriptions of method and location, front-page coverage and sensational headlines (Nepon et al. 2008).

Conversely, the Papageno effect occurs when the media has a suicide-preventing influence (Siask and Värni 2012). For example, Kurt Cobain's (lead singer and guitarist of the Nirvana music group) suicide did not yield the expected Werther effect (Jobes et al. 2006). On the contrary, the number of suicides one week following his death decreased compared to the same week in the year prior and the year following (Jobes et al. 2006). Some have hypothesized that imitative suicides were not observed following the event due to his wife's reaction, because his suicide was not romanticized or glorified in the media and because crisis centre/community outreach interventions were put in place immediately in many communities (Gould 2001; Jobes et al. 2006). Newspaper blackout, reductions in the quantity of reporting and changes in the quality of media reporting have also shown a protective effect of media coverage and, in some cases, a subsequent short-term decrease in suicides (Siask and Värni 2012).

Gaps in Current Knowledge

Although looking at the effect of media coverage of suicides is not new, to our knowledge no studies have looked at its effect on rates of emergency department (ED) MH presentations. Also, little is known about the effects of non-celebrity suicides and, as such events are more common than celebrity suicides, they are important to investigate in the hope of developing preventive strategies (Yang et al. 2013). Furthermore, the potential role of media coverage of mental illness in increasing MH awareness has yet to be determined. A study tested the effect of a host of media on MH awareness with relatively good results (Wright et al. 2006). However, more evidence is needed to determine the effectiveness of media-based MH awareness campaigns and what effect it may have on presentations to the ED. Understanding these influences is important because MH literacy is crucial in the promotion of early detection and treatment of MH problems (Wright et al. 2006).

The goal of this study was to examine MH presentations to the ED of the local paediatric hospital where the two publicized suicides took place and to determine if ED presentations increased following the extensive media coverage of Daron Richardson's and Jamie Hubley's suicides.

Methods

We used data from the Children's Hospital of Eastern Ontario (CHEO) ED, which uses the National Ambulatory Care Reporting System (NACRS), to verify the influence of the two youth suicides in the Ottawa region on paediatric MH ED presentations. The NACRS provides hospitals with a standard data collection and reporting tool to capture data for ambulatory care visits, including day surgery, ambulatory care clinics and EDs. We selected all youths aged 12–18 years (mean = 15.6, SD = 1.6) who presented to the ED with a clear chief complaint related to MH and/or received an MH diagnosis as a primary diagnosis. We used the International Statistical Classification of Diseases and Related Health Problems Canadian version (Canadian Institute for Health Information 2006) to determine if patients had received a main ambulatory care diagnosis for mental illness (F20–F99, G47, R45, Z63), substance misuse or abuse (F10–F19, T36–T65, Z03) or intentional self-harm (X60–X84).

We also conducted secondary analyses of clinical data collected prospectively from a second database. This database represents a sub-sample of all paediatric MH presentations at CHEO, and therefore a sub-sample of the regular ED database. The youths in this database were seen by the Regional Psychiatric Emergency Services for Children and Youth, which responds to MH emergencies in the ED and on an outpatient basis. Only data from youths who were seen by this crisis intervention team in the ED were selected. Again, we selected all youths aged 12–18 years (mean = 15.1, SD = 1.4). These data were used to determine if symptom acuity (as measured by the Child and Adolescent Needs and Strengths tool; CANS-MH 3.0; Lyons et al. 2006), suicidal status (No, Ideation or Plan, Gesture, Attempt) and psychiatric hospitalization rates following the ED presentation were different two weeks

prior to the publicized suicides compared to the two weeks following. These variables are not collected specifically in NACRS databases. Most studies examining the impact of media reporting on suicidal acts have focused on short-term effects, a few days to three or four weeks (Siask and Värni 2012), which is why our analyses focused on 2-week, 4-week and 90-day periods to determine short- and long-term effects.

Measure

The Child and Adolescent Needs and Strengths Tool (CANS-MH 3.0)

The CANS-MH 3.0 is a 60-item assessment tool used to support decision-making during the process of planning services (Lyons et al. 2006). The CANS-MH effectively communicates the severity of youth's needs (MH symptoms and behaviours) and strengths through the use of actionable levels: (0) no evidence, (1) watchful waiting/prevention, (2) action required and (3) immediate/intensive action required. A score of 2 or 3 indicates a need for service. Only relevant needs were included for this study: anxiety (symptoms of anxiety in children such as worries and fears); mood (symptoms of depression in children such as depressed mood, sleep disturbances, weight/eating disturbances, loss of motivation, irritability); substance abuse (use of alcohol and illegal drugs, misuse of prescription medications and inhalation of substance for recreational purposes); attention deficit/impulse control (symptoms of attention deficit and hyperactivity disorder and impulse control disorder such as inattention); oppositional behaviour (non-compliance to authority); conduct behaviour (antisocial behaviours like shoplifting, lying, vandalism, cruelty to animals and assault); social behaviour (socially unacceptable behaviour for the culture and community); and school behaviour (behavioural difficulties at school). The CANS-MH 3.0 has good inter-rater reliability (0.73 on average; Lyons et al. 2006) and good concurrent validity (correlations ranging from 0.63 to 0.72 with the Child and Adolescent Functional Assessment Scale; Hodges and Wotring 2000). The CANS-MH was completed by the crisis intervention team in the ED.

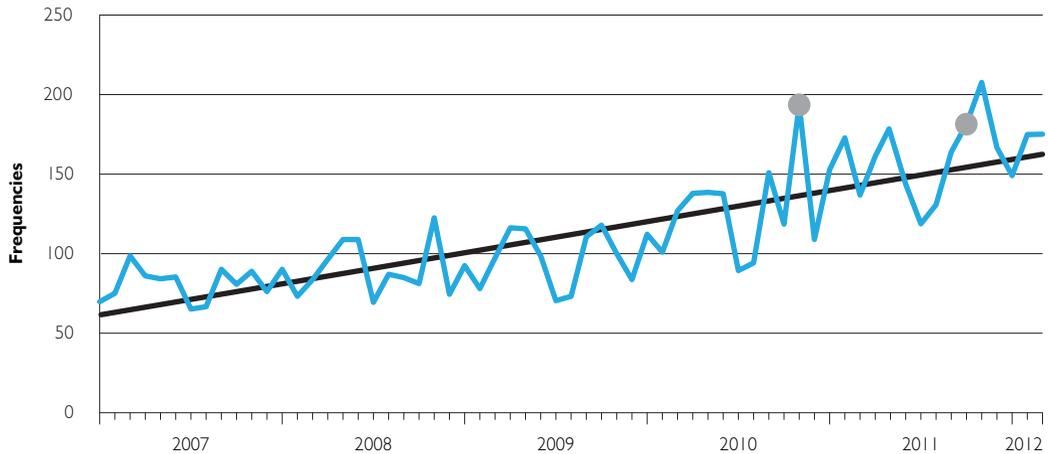
Statistics

Differences in monthly frequencies of ED presentations were analyzed using the chi-square goodness-of-fit test in SPSS version 20.0. Then, data were aggregated into daily number of presentations for the 2,192-day period from April 1, 2006 to December 31, 2012. A Poisson regression generalized linear model (GLM) was conducted using this 2,192-day period to determine whether the 14-, 28- and 90-day periods post event were statistically significantly associated with an elevated risk of ED presentations. All models controlled for time using a quadratic term. The CANS-MH was dichotomized into no action required (actionable levels 0 and 1) and action required (actionable levels 2 and 3), and again, differences between weeks were analyzed using chi-square goodness-of-fit test. Similarly, suicidal status was dichotomized into no suicidality and some suicidality (includes ideation, plan, gesture or attempt).

Results

The NACRS database indicated that 6,700 youths meeting the study inclusion criteria presented to the ED between January 2007 and March 2012. Sixty-one percent ($n = 4,110$) of these youths were female. Of all presentations, 46.5% ($n = 3,114$) were first seen by emergency physicians and 31.7% ($n = 2,123$) were first seen by social workers. The second database indicated that for the same period, 1,386 youths were seen by the crisis intervention team (62.6% were female, $n = 867$).

FIGURE 1. Monthly mental health presentations from January 2007 to March 2012*



*Grey dots represent Daron's suicide event in November 2010 and Jamie's suicide event in October 2011.

Year-on-year annual increases in total MH presentations were evident and ranged from 6% to 32% (2007–2008 = 10%; 2008–2009 = 6%; 2009–2010 = 32%; 2010–2011 = 30%; 2011–2012 = 7%). Furthermore, there was a 119% increase in November 2010 (the month of Daron Richardson's death) compared to the same month in 2009, which is 89 percentage points greater than the overall increase that year. This increase was statistically significant, $\chi^2(1, N = 292) = 30.26, p < 0.0001; \phi = 0.32$. Similarly, but not as dramatic, there was a 59% increase in October 2011 (the month of Jamie Hubley's death) compared to the same month in 2010, which is 52 percentage points greater than the overall increase that year. This increase was also statistically significant, $\chi^2(1, N = 299) = 13.27, p < 0.0001; \phi = 0.21$. As a comparison, in January 2012 another local youth committed suicide. Although his death was reported by the news, it received no further media attention. Following this suicide, there was a 5% decrease in January 2012 compared to the same month in 2011. This decrease was non-significant, $\chi^2(1, N = 301) = 0.03, p = 0.86; \phi = 0.01$. Monthly frequencies of MH presentations are presented in Figure 1.

Poisson regression modelling was conducted to account for the trend over time. Results are outlined in Table 1. At the 95% confidence level, all models except for Model 4 (14 days post-Jamie) demonstrated a statistically significant increased risk for ED presentations.

Media Coverage of Youth Suicides and Its Impact on Paediatric Mental Health Emergency Department Presentations

TABLE 1. Risk of presentation to the ED during the 14-, 28- and 90-day periods following Daron's and Jamie's deaths

Model	Event	Number of days post event	Relative risk (95% CI)	p-value
1	Daron	14	1.65 (1.32, 2.02)	<0.001
2	Daron	28	1.48 (1.25, 1.73)	<0.001
3	Daron	90	1.16 (1.05, 1.29)	0.004
4	Jamie	14	1.25 (0.99, 1.56)	0.054
5	Jamie	28	1.32 (1.12, 1.55)	<0.001
6	Jamie	90	1.22 (1.10, 1.34)	<0.001

Analyses of the sub-sample of clinical data demonstrated there were no significant differences in symptoms acuity two weeks prior compared to the two weeks following both suicides, except for mood presentations, which increased significantly two weeks following Daron's suicide. Non-significant results were also found for suicidal status and hospitalization rates. Associated chi-squares and *p*-values are presented in Table 2.

TABLE 2. Comparison of the 2 weeks before and the 2 weeks following the suicide events on symptom acuity, suicidal status and hospitalization rates

The Child and Adolescent Needs and Strengths tool (CANS-MH 3.0)	Comparison of the 2 weeks prior and the 2 weeks following Daron's suicide		Comparison of the 2 weeks prior and the 2 weeks following Jamie's suicide	
	χ^2	p-value	χ^2	p-value
Anxiety	0.47	0.493	1.04	0.307
Mood	3.9	0.048*	0.18	0.674
Substance abuse	1.14	0.285	0.09	0.763
Attention deficit/impulse control	0.05	0.819	0.73	0.394
Oppositional behaviour	1.08	0.297	2.46	0.117
Conduct behaviour	-	-	0.33	0.564
Social behaviour	-	-	0.67	0.414
School behaviour	0.14	0.705	0.33	0.564
Other				
Suicidal status	3.11	0.078	0.08	0.780
Psychiatric hospitalization rate	0.43	0.513	0.43	0.513

Note. There were insufficient data for conduct and social behaviours reported in the weeks around Daron's death to conduct chi-square analyses.

Chi-square analyses of the ratios of males-to-females and the age-at-time-of-presentation were also not found to be significant when comparing the two weeks before and the two weeks following both suicide events ($p > 0.05$).

Discussion

MH presentations to the local paediatric hospital have increased over the past few years, and it appears that extensive media coverage of youth suicides is related to short- and long-term increases in ED presentations. Jamie's suicide did not appear to have had as much of an immediate impact as Daron's on ED presentations. One possible explanation may be differences in media speculation around the underlying causes of each tragedy. In Daron's case, there was a much stronger emphasis on mental illness, while in Jamie's case, the emphasis was put on bullying and the struggles gay teens face every day. Furthermore, the relatively immediate impact of Daron's suicide on ED presentations is in contrast to Yang et al. (2013), who found there was a month-long lag for the effect of reported suicide to be evident in the case of non-celebrity suicides. However, it could be argued that Daron, as the daughter of the Ottawa Senators assistant coach, was more of a "celebrity" than the average youth because of her relationship to the local NHL team. Although we cannot claim a causal relationship, suicides that received media coverage seem to be linked to a greater number of MH presentations to the local paediatric hospital.

Our results demonstrated no significant clinical differences (symptoms acuity, suicidal status, hospitalization rates) in presentation during the two weeks following both suicides compared to the two weeks before, except for acuity of mood symptoms, which barely reached significance. Interestingly, a recent Korean study that looked specifically at suicide attempts uncovered no significant difference between the number of suicide attempts before and after a celebrity suicide (Kim et al. 2013). The finding that clinical severity of ED presentation was not affected in this study is important because it means that a greater number of youths with MH problems sought services; youths who may not have sought services otherwise. These results might suggest that the extensive media attention surrounding Daron and Jamie's suicides sensitized the community to MH issues – possibly through parental identification of youth at risk – and increased help-seeking behaviours for all youths and their families, enabling more youths to receive needed services. In fact, a similar study examining the widespread media coverage of actress Natasha Richardson's fatal head injury also found an increase in ED presentations for head trauma (Richardson et al. 2011). This increase was most pronounced in the paediatric population, which supports the possibility that increased presentations might be driven by parental concerns. Ideally, future studies would directly measure the motivations and expectations of the youth and parents as they present to the ED to determine if presentations increased because of the heightened awareness of MH issues (Cloutier et al., 2010).

On the other hand, increases in ED presentations augment the demands on our already overburdened Canadian EDs (Grupp-Phelan et al. 2007; Mahajan et al. 2009; Newton et al. 2009). Considering that the youths who presented in the weeks following the suicides were comparable in their symptom severity and suicidal status, and knowing that there had been an increase in non-urgent presentations (Edelsohn et al. 2003; Sills and Bland 2002), some of these youths might have been better served through community resources. As the response to Kurt Cobain's suicide demonstrates, outreach programs in charge of communicating the

different types of services available to youths and directing youths to the most appropriate services, whether in the ED or community-based, might be the most appropriate response to suicide events (Jobes et al. 2006; Richardson et al. 2011). Therefore, early identification, while essential, has to be matched by equivalent improvements in the MH healthcare system.

Although this study focused on specific suicides that occurred within the Ottawa region, the implication of the findings can be applied more broadly. Indeed, this study sheds some light on whether the extensive media coverage of non-celebrity teen suicides yields a Werther or Papageno effect. If increased ED presentations are truly reflecting greater awareness of MH issues, it could be evidence for the positive role of responsible media coverage and therefore a Papageno effect.

Limitations

Although CHEO uses the NACRS, we cannot determine the accuracy of the reported chief complaints and diagnostics. However, this has likely led to an underreporting rather than an overreporting of MH presentations (Yu et al. 2010). Although we have taken care to include all youth with a clear chief complaint related to MH and/or received an MH diagnosis as a primary diagnosis, we were conservative in our inclusion criteria. Therefore, the number of youth with MH problems might have been underestimated because of imprecise chief complaints or differences in coding. Another limitation is that symptom acuity, suicidal status and hospitalization rates were only available for a sub-sample of youth. It may also be the case that higher rates of ED visits are due to events, circumstances or factors other than the two suicide events. For example, it was found that, on average, rates of MH presentations are higher during the school year than during the summer months (Goldstein et al. 2005). To address this, GLM was used to control for trends-over-time. Finally, it was not possible to control for child, family or systemic factors (e.g., history of suicidal behaviour, stigma, distance from the ED), which might have impacted the decision to seek care at the local paediatric ED. Indeed, some youth might have presented to a general instead of a paediatric ED, and older youth might have sought adult instead of paediatric services. These ED presentations would therefore not have been captured in this study, but would still have led to an underestimation of presentations related to publicized teen suicides. Nevertheless, this study is the first to look at a help-seeking behaviour instead of subsequent completed suicides, providing a broader look and a better understanding of the influence of publicized suicides on community members.

Conclusion

This study confirmed that there has been an overall yearly increase in ED presentations, which corresponds with reported increases in paediatric MH presentations in Canadian and American EDs (Grupp-Phelan et al. 2007; Mahajan et al. 2009; Newton et al. 2009; Sills and Bland 2002). This study also suggests there was a short- and long-term increase in youth ED presentations following media coverage of youth suicides, but no significant clinical differences in presentation. However, it is still unknown whether the increase corresponded to

higher awareness of MH issues. These findings may encourage more research on the potential positive role of responsible media coverage on MH awareness. Finally, as with Kurt Cobain's suicide, it might be important to have immediate outreach interventions from MH crisis centres following news of youth suicides. These outreach interventions might help to prevent an unwanted Werther effect by highlighting the existence of services available for youths in distress. Outreach interventions might also help relieve some of the sudden demands on already burdened EDs by informing and guiding youths and their families to the most appropriate services depending on needs and level of distress.

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Mind the Gap: Governance Mechanisms and Health Workforce Outcomes

Attention à la marche : mécanismes de gouvernance et résultats de la main-d'œuvre en santé



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Abstract

Attempts at health system reform have not been as successful as governments and health authorities had hoped. Working from the premise that health system governance and changes to the workforce are at the heart of health system performance, we conducted a systematic review examining how they are linked. Key messages from the report are that: (1) leadership, communication and engagement are crucial to workforce change; (2) workforce outcomes need to be considered in conjunction with patient outcomes; and (3) decision-makers and researchers need to work together to develop an evidence base to inform future reform planning.

Résumé

Les tentatives de réforme des systèmes de santé n'ont pas connu un succès aussi retentissant que ne l'espéraient les gouvernements et les autorités sanitaires. À partir de la prémisse voulant que la gouvernance et les changements apportés à la main-d'œuvre sont au cœur du rendement des systèmes de santé, nous avons procédé à une revue systématique pour examiner le lien existant entre ces deux éléments. Les messages clés qui se dégagent du rapport sont : (1) le leadership, la communication et l'engagement sont des aspects cruciaux pour les changements à la main-d'œuvre; (2) il faut tenir compte des résultats de la main-d'œuvre de pair avec les résultats pour les patients; et (3) les décideurs et les chercheurs doivent travailler ensemble au développement d'un fonds de données pour éclairer d'éventuels plans de réforme.

IN ITS FINAL REPORT, THE HEALTH COUNCIL OF CANADA OPENS WITH THE SOBERING statement that “A decade of reform under the health accords led to only modest improvements in health and healthcare. The transformation we hoped for did not occur” (Health Council of Canada 2013: 1). Actions under the two federal/provincial/territorial health accords focused on quality, accessibility and sustainability, but led to only limited improvements in measures of patient care and health outcomes.

As part of international efforts to address health system pressures, the literature on governance and health system transformation has been expanding in recent years. While there are differences in the definition and operationalization (Barbazza and Tello 2014) of governance, it is generally understood to mean the tasks and functions established to drive the direction, accountability and performance of health services (World Health Organization n.d.). Hence, governance is increasingly regarded as key to transforming the health system. At the same time, successful health system change is premised on availability of an educated and skilled workforce (Health Council of Canada 2005), an appropriate skill mix and efficient and effective use of existing human resources. Unfortunately, the relationship between governance structures and processes and workforce outcomes is not well-understood. There is a gap in knowledge about how particular “tools” or mechanisms of governance work in practice (Barbazza and Tello 2014) and their impact on the health workforce. We developed a systematic review to address this knowledge gap and pull together diverse evidence on governance

mechanisms and health workforce outcomes. We used standard synthesis methods to manage the review, quality appraisal and evidence synthesis phases.¹ Our conceptualization of governance was broad and inclusive to allow us to identify a wide range of governance mechanisms in the early searches. It encompassed strategic policy frameworks, mechanisms, effective oversight, coalition building, accountability, legislation, information, regulations and incentives related to health system design. We defined workforce changes as more effective utilization of the workforce and a change in the way healthcare providers work together to deliver care and looked for a range of workforce outcomes.

A total of 149 articles (77 empirical, 34 non-empirical, 38 grey literature) met relevancy and quality criteria for inclusion. After initial appraisal and extraction, we identified the following governance mechanisms: provider engagement (shared governance, Magnet accreditation, professional development and education), quality focus, organizing structures (organization of healthcare delivery, funding), healthcare reform and strategic planning and informal governance (physician leadership, communication).

The workforce outcomes we identified included absenteeism, adoption of care protocols, collaborative practice, learning, professional behaviour, recruitment, retention, role clarity, skill or staff mix, work attitudes and workload.

A full discussion of our methods and findings can be found elsewhere (Hastings et al. 2013). This paper reflects on some key issues that the research team found challenging during the review, and that are important considerations for future research on this topic. Namely, we are concerned with drawing out the “invisible” mechanisms (Pawson 2008) of change (related to people and processes) that were absent in the findings of many studies we reviewed but were highlighted as key to success in those reporting positive outcomes. We suggest that the unbalanced reporting and discussion of workforce outcomes in the existing literature has three elements and it is these elements that we highlight below.

Leadership Matters (... and So Does Communication and Engagement)

Overall, the evidence on the workforce impact of governance mechanisms is mixed, and it is difficult to claim that one type of initiative is better at changing health workforce behaviours than another. Mechanisms focused on improving staff engagement, such as shared governance, Magnet accreditation and professional development programs are successful in improving some key outcomes such as retention, job satisfaction and collaborative practice. Evaluations of clinical governance and quality improvement initiatives suggest some positive impacts on uptake of evidence-based practice when providers are given appropriate training. Our findings on pay-for-performance and other funding initiatives report mixed impacts on workforce behaviours. Importantly, contextual factors (e.g., design of performance indicators, size of rewards and distribution of rewards) seem to have an important impact on local successes and failures, but they are not consistently reported.

The key message for policy makers is that some of these projects work some of the time. There is no simple fix to the challenge of changing the health workforce. Having said that,

we have identified some characteristics across projects reporting successful workforce outcomes, regardless of the context, scale and design of the initiative, that appear to lead to better outcomes. These success factors pertain to the quality and consistency of the leadership, communication and engagement underpinning the change processes being implemented.

Effective leadership that promotes a shared vision and rationale for change is characteristic of projects reporting good workforce outcomes. It seems that health system workers, like most of us, appreciate transparency and consistency of strategic vision delivered through all leadership levels in an organization. Where the organizational culture is shaped by strong leadership, the outcomes are likely to be better. Related to clarity of vision and strong leadership is the need for a communication strategy that allows the timely delivery of information on the rationale for change (why it is being done), the change process (how it is being done) and the locus of change (with whom and where it is being done). Furthermore, a communication process that facilitates information flow across the whole system (including mechanisms for feedback from staff to leaders) is highly valued and linked to positive workforce outcomes. It is perhaps not surprising that communication has to be multi-directional, not just top-down, to promote workforce engagement in new initiatives.

Leadership and communication are strengthened by early stakeholder engagement. Enabling the intellectual and emotional investment of the workforce in both the design and ongoing development of a program is more likely to produce the desired results. For example, engaging healthcare providers in identifying the metrics for assessing performance, in devising performance targets and rewards and agreeing on their distribution appears to give better results than imposed reward systems. Early engagement may help governance boards avoid potential roadblocks further down an implementation process.

The Missing Link

A surprising finding from our review was that the literature very rarely includes workforce and patient or system outcomes simultaneously. Of 77 empirical studies we reviewed, just one considered patient outcomes alongside workforce variables, and we would hazard a guess that the vast majority of patient outcomes literature does not include workforce outcomes. We view this as a major gap and an important step for future research, as every governance mechanism we reviewed was ultimately aimed at improving patient care via influencing the workforce in some way.

Healthcare providers are the instrument through which governance mechanisms are operationalized and outcomes are achieved. Without enabling changes in providers' motivation, knowledge, skill, behaviours or work processes, the desired improvements in patient or financial outcomes cannot be realized. Too often, governance initiatives are designed and implemented without consideration of how the workforce will be affected by the required changes. A funding model that does not properly incentivize physicians may not improve patient care, and a quality improvement project that does not adequately teach providers how to find, interpret and use evidence is unlikely to substantially improve quality. Workforce

outcomes should also be included in evaluations, to identify areas of success and areas for improvement. For example, providers' job satisfaction may decrease as a result of altering the way healthcare is delivered. This outcome may in turn affect absenteeism, turnover or performance and thus undermine efforts to improve patient care or reduce costs. Identifying these issues in an evaluation allows an organization to tweak the initiative to alleviate the problem.

Many of the unsuccessful initiatives we see in the literature and in Canadian healthcare systems are due, at least in part, to a lack of consideration on the part of planners of what the workforce needs to increase engagement. Providers who do not have or do not believe they have the support or resources to carry out an initiative cannot and will not be the "tool" that improves system-level outcomes. A new governance mechanism likely will not successfully move beyond its planning phases without enthusiastic uptake on the part of the workforce and may not be sustainable long-term if providers are unwilling or unable to do what is asked of them. For an initiative to move to its next phase, there should be explicit consideration of what the initiative means for the workforce, whether they have the means to carry it out and how issues that do crop up can be identified and improved to drive the system or patient care quality changes at the heart of the matter.

Learning from Each Other for Success

Our ability to draw firm conclusions about the governance mechanisms we found was hindered by the quality of the articles under review. We rejected almost 30% of our selected full-text articles for quality reasons, and even those we retained were often on the low side of the acceptable quality range. This discovery hints at a larger issue in health systems research: a lack of impartial, well-written, high-quality studies of governance mechanisms and outcomes.

While we acknowledge the challenges of designing and executing evaluations of "real world" program implementation in complex settings, it is important to pursue excellence. Many of the studies we reviewed seemed to have been designed after the fact, rather than planned a priori, leaving the researchers to choose perhaps sub-optimal outcomes to study and less-than-ideal research designs. We encourage decision-makers to partner with researchers early in governance planning efforts, to allow time for proper study design and comparisons across units or sites when possible. This would encourage a focus on expected outcomes from the outset and the generation and dissemination of useful knowledge.

Decision-makers and researchers need to make a concerted effort not only to use evidence in their planning, implementation and evaluation of new initiatives, but to produce evidence and make it available to others. Accounts of successes and failures in systems across Canada and the rest of the world can be found, but evidence is not being reported, collated, reviewed or published for the benefit of others. Health systems leaders potentially stand to learn volumes from others' experiences with governance initiatives if evidence and appropriate knowledge exchange develop. Without the ability and desire to learn from each others' mistakes, decision-makers will repeat mistakes in new settings, with predictable consequences (see the proliferation of pay-for-performance systems for proof of this).

A more intentional focus on research and evaluation would allow us to better understand the markers and mechanisms of successful change. The vast majority of research we reviewed used work attitudes outcomes (e.g., job satisfaction, engagement) to measure the results of governance initiatives. A smaller, but still sizable, proportion examined professional behaviour outcomes (e.g., job performance, care quality). Are these the best indicators of success, or were they merely convenient to measure? Related to this query, the design and implementation of governance structures would be aided by a fuller understanding of how changes in governance influence the workforce, and in turn how the workforce influences patient and system outcomes.

Conclusion

Changes to governance processes and structures are inevitable in today's healthcare environment, where patient acuity is rising and some healthcare providers are becoming scarce. Our synthesis showed that such changes can be effective if leaders consider the context, take responsibility for driving the change, understand the needs of the workforce and take advantage of others' experiences before making irrevocable decisions with huge consequences. We are not the first to say this (see, e.g., Lewis 2009; Wilson et al. 2012), but we hope a continued focus on pushing leaders to recognize the difficulties inherent in such changes will improve the chances of success for future initiatives.

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Note

1. A detailed discussion of the search terms, eligibility criteria, databases searched and screening process is available in the report, "Exploring the relationship between governance models in healthcare and health workforce transformation: A systematic review" (Hastings et al. 2013).

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