

Canadian Journal

of  
**Rural  
Medicine**

Journal canadien

de la  
**médecine  
rurale**



*The official journal of the Society of Rural Physicians of Canada*

*Le journal officiel de la Société de la médecine rurale du Canada*

VOLUME 16, NO. 1, WINTER 2011

VOLUME 16, N° 1, HIVER 2011

**IN THIS ISSUE**

**DANS CE NUMÉRO**

**Maternity Care Woes**

**The Occasional Teacher. Part 2**

**The Occasional Trochanteric Bursitis**

**FASD in Rural Adults**



cma.ca/cjrm

**SCIENTIFIC EDITOR**  
**RÉDACTEUR SCIENTIFIQUE**  
PETER HUTTEN-CZAPSKI, MD  
Halleybury, Ont.

**ASSOCIATE SCIENTIFIC EDITOR**  
**RÉDACTEUR SCIENTIFIQUE ASSOCIÉ**  
GORDON BROCK, MD  
Tremisaming, Que.

**MANAGING EDITOR**  
**DIRECTRICE DE LA RÉDACTION**  
SUZANNE KINGSMILL, BA, BSc, MSc  
Toronto, Ont.

**ASSISTANT EDITORS**  
**RÉDACTEURS ADJOINTS**  
PASCAL GROTEAU, MD  
Shanville, Que.

MIKE GREEN, MD  
Kingston, Ont.

MARY JOHNSTON, MD  
Revelstoke, BC

TRINA M. LARSEN SOLIS, MD  
Golden, BC

ROBERT MARTEL, MD  
Arlach, NS

JAMES ROUBKE, MD  
St. John's, NL

TODD K. YOUNG, MD  
Springdale, NL

Canadian Journal of Rural Medicine (CJRM) is owned by the Society of Rural Physicians of Canada (SRPC). It appears in Winter, Spring, Summer and Fall. It is printed by Dolco Printing, Ottawa, Ont.

Address all correspondence to: Editor, CJRM, 45 Overlea Blvd., P.O. Box 22015, Toronto, ON M4H 1N9, 416 961-7775, fax 416 961-8271; cjrm@cjrm.net

CJRM is indexed in Index Medicus and MEDLINE.

Publications Mail Agreement no. 41387051. Return undeliverable Canadian copies and address changes to: CMA Member Service Centre, CJRM, 1870 Alta Vista Dr., Ottawa ON K1G 6R7; 888 855-2555; cmamsc@cma.ca

ISSN 12037796

All prescription drug advertisements have been cleared by the Pharmaceutical Advertising Advisory Board.

Printed on acid-free paper from inception.



© 2011 Society of Rural Physicians of Canada

Canadian Journal

Journal canadien

of  
**Rural  
Medicine**

de la  
**médecine  
rurale**

**VOL. 16, NO. 1, WINTER / HIVER 2011**

**EDITORIALS / ÉDITORIAUX**

- 3 Trading horses and other tails — *Peter Hutten-Czapski, MD*  
4 Tractations et autres techniques — *Peter Hutten-Czapski, MD*  
5 President's message. Partnering with communities — *John Wootton, MD*  
6 Message du président. Créer des partenariats avec les communautés — *John Wootton, MD*

**ORIGINAL ARTICLE / ARTICLE ORIGINAL**

- 7 "You don't know what you've got till it's gone": the role of maternity care in community sustainability — *Christiana Miewald, PhD; Michael C. Klein, MD; Catherine Ulrich, RN; David Butcher, MD; Sabba Eftekhary, MD; Jessica Rovinski, MA; Andrea Procyk, BA*

**REVIEW / REVUE**

- 13 Medical school strategies to increase recruitment of rural-oriented physicians: the Canadian experience — *Ronak K. Kapadia, MD; Brent M. McGrath, MD*

**THE PRACTITIONER / LE PRATICIEN**

- 20 The occasional injection for trochanteric bursitis — *Len Kelly, MD; Lauren Minty*  
25 The occasional teacher. Part 2: the good teacher — *William Edward Oomun, MD; Julie Copeland, MD*

**DESCRIPTIVE ARTICLE / ARTICLE DESCRIPTIF**

- 25 Fetal alcohol spectrum disorder in adults: diagnosis and assessment by a multidisciplinary team in a rural area — *Audrey McFarlane, MBA (CED)*

**OUT BEHIND THE BARN / DANS LE FEU DE L'ACTION**

- 31 Apple's new iPad — tool or toy? — *Barric McCombs, MD*

**RESIDENTS' CORNER / COIN DES RÉSIDENTS**

- 33 How did I end up in rural medicine? — *Reidrick Cheung, MD*

**LETTERS / CORRESPONDANCE**

- 34 The benefits of mammography are marginal — *Kris Aubrey-Bassler, MD; Response — James Ted McDonald, PhD*





### Blue Moon

Pen and ink on paper, 8 1/2" x 11", by Lauric Dignan, Sidney, BC, 2001

[www.changing-realities.com](http://www.changing-realities.com)

The inspiration for this drawing came from 2 trees in the field across from where I was living in Golden, BC. It was a quiet, snow-covered look into my winter of 2001.



CJM is published for the SRPC by the Publications Department of the Canadian Medical Association (CMA), 1867 Alta Vista Dr., Ottawa ON K1G 3W8. The SRPC and the CMA assume no responsibility or liability for damages arising from any error or omission, or from the use of any information or advice contained in the journal, including articles, editorials, case reports, reviews, book reviews, letters and advertisements. All editorial matter in CJRM represents the opinions of the authors and not necessarily those of the SRPC or the CMA.

**DIRECTOR AND PUBLISHER**  
**DIRECTRICE ET ÉDITRICE**  
GLENDA PROCTOR

**ASSOCIATE DIRECTORS, PUBLICATIONS**  
**DIRECTEURS ASSOCIÉS, PUBLICATIONS**  
HOLLY BOISGER, TIM HOWE

**MANAGING EDITOR**  
**DIRECTRICE DE LA RÉDACTION**  
KATE BROWN  
800 663-7336 x2114  
[kate.brown@cma.ca](mailto:kate.brown@cma.ca)

**EDITORIAL COORDINATOR**  
**COORDONNATRICE DE LA RÉDACTION**  
KELLY CLARKE

**PRODUCTION**  
KATHRYN A. FREAMO  
NICOLE BARBEAU, CLARA WALKER

**ONLINE PUBLISHING**  
**PUBLICATION EN DIRECT**  
JAMES MANSHIP, SHIRLEY WADDELL

**CAREER/CLASSIFIED ADVERTISING**  
**CARRIÈRES ET ANNONCES CLASSÉES**  
LAURIE McLEOD, SUSAN RITCHIE  
[advertising@cma.ca](mailto:advertising@cma.ca)

**DISPLAY ADVERTISING**  
**ANNONCES PUBLICITAIRES**  
DEBORAH WOODMAN

**MARKETING AND ADVERTISING SALES**  
**MARKETING ET PUBLICITÉ**  
KEITH COMMUNICATIONS INC.  
[info@keithhealthcare.com](mailto:info@keithhealthcare.com)  
Toronto: 905 278-6700, 800 661-5004  
Fax 905 278-4850  
Montréal: 514 624-6979, 877 761-0447  
Fax 514 624-6707

35 **SERVICE INFORMATION**

38 **CAREER / CLASSIFIED ADVERTISING**

**ANNONCES SUR LES CARRIÈRES ET ANNONCES CLASSÉES**

**INSTRUCTIONS FOR AUTHORS / DIRECTIVES AUX AUTEURS**

Visit/[visitez.srpc.ca](http://visitez.srpc.ca)

**RENSEIGNEMENTS GÉNÉRAUX**

Visitez [srpc.ca](http://srpc.ca)

Canadian Journal

Rural Medicine

Journal canadien

médecine rurale

Canadian Journal of Rural  
Medicine +

Issues by Date

Email Alerts

About CJRM

Readers of *CJRM* can subscribe to email alerts to receive the table of contents by email when a new issue appears. Sign up now at [cma.ca/cjrm](http://cma.ca/cjrm).

Les lecteurs de *SCMR* peuvent souscrire aux info courriels pour recevoir un avis par courriel pour chaque nouveau numéro. Inscrivez-vous dès maintenant à [amc.ca/cjrm](http://amc.ca/cjrm).

**THE 19TH ANNUAL RURAL AND REMOTE  
MEDICINE COURSE COMES TO RURAL ONTARIO!  
COLLINGWOOD, ONT., MAY 7-9, 2011  
FOR MORE INFORMATION GO TO [SRPC.CA](http://SRPC.CA)**

**RURAL CRITICAL CARE (RCC) BANFF, ALTA.  
BANFF PARK LODGE, JAN. 21, 2011  
TO DOWNLOAD THE FLYER GO TO  
[SRPC.CA/PDF/RCCBANFFAB.PDF](http://SRPC.CA/PDF/RCCBANFFAB.PDF)**

**RURAL CRITICAL CARE (RCC) MEXICO  
RIU CANCUN, MEXICO, FEB. 21-25, 2011  
TO DOWNLOAD THE FLYER GO TO [SRPC.CA/PDF/CMESUN.PDF](http://SRPC.CA/PDF/CMESUN.PDF)**

**ORDER YOURS TODAY!! \$54.95 VISIT [SRPC.CA/BOOKS](http://SRPC.CA/BOOKS)**

**MANUAL OF RURAL PRACTICE  
NOW IN ITS SECOND PRINTING!**

**ADVERTISERS' INDEX / INDEX DES ANNONCEURS**

**MERCK FROSST CANADA LTD.**

Gardasil 32, Outside back cover

**SEEMORE IMAGING CANADA**

30

**SOCIETY OF RURAL PHYSICIANS OF  
CANADA**

Inside front cover

**PRESCRIBING INFORMATION**

Gardasil 36-7

# Trading horses and other tails

Peter Hutten-Czapowski,  
MD

Scientific editor, CJRM  
Haileybury, Ont.

Correspondence to:  
Dr. Peter Hutten-Czapowski;  
phc@srpc.ca

It's inevitable: for some reason you are scheduled to be on call when you want to go to the Rural and Remote conference or on vacation or it's your anniversary. It doesn't really matter what you are on call for; one of my definitions of rural practice is that you will be on call, and you will need to be able to switch your on-call shift. The ability to accommodate a switch in the schedule, I think, is a barometer on how well the system (and the doctors) gets along in town.

In the old days, it was just *on call*. Everyone did everything, so "on call" meant emergency room + inpatients + obstetrics + operating room + phone calls from remote nursing stations +++. It was like that at my hospital when I started, and I can think of a few places in Canada and elsewhere that still swing that way.

The unwritten (and false) curriculum that you have to have extra training to do anything outside the office (e.g., obstetrics, emergency room) has combined with a lack of accreditation, training and examination requirements for broad generalist competencies, resulting in family medicine trainees leaving their programs without confidence in the spectrum of rural medicine. Together, these factors have contributed to making it difficult to sustain simple call systems. For most of us in rural practice, call has become more complicated.

Our original call schedule, which would cover everything in one rota, has been broken up into multiple overlapping Venn diagrams of call so that some rural doctors seem to be on call all the time, but for different things. I'm on for obstetrics (1:7), emergency room (1:7,

almost a completely different 7), weekend call for inpatients (1:6), operating room assist (1:8) and orphan patients (1:9), and now our preceptoring duties for the medical students are on the schedule (4:8).

This becomes a perverse incentive to limit one's scope of practice because it becomes even harder to get away. Luckily, there are ways to cope other than dropping everything or moving to the city.

One approach is to require that everyone covers everything. You might think that this arrangement would be hard to maintain in an era of increasing personnel shortage, but this approach is the gold standard in places such as Happy Valley-Goose Bay. As long as there are rural doctors, both old and new, who like doing everything, this approach is almost a recruitment strategy.

Another approach is to make call painless. Here in Temiskaming Shores, Ont., we all do our own obstetrics, so the on-call obstetrics doctor doesn't get much work. Thus, it's never an issue to sign out to the on-call obstetrics doctor, and it's completely guiltless. Unless you are on call that week, you can skip town, have that second beer or go to the birthday party knowing that someone has your back, and you don't have to count favours doing it.

These strategies aside, remember that the next time your colleague asks you to take call for them, it's better for you and the town if the habit is to say, "Of course!" ... Mind you, there needs to be a discussion about who keeps the shop open this year while everyone is away at Rural and Remote.

## Tractations et autres techniques

Peter Hutten-Czapski,  
MD  
Rédacteur scientifique,  
JCMR  
Haileybury (Ont.)

Correspondance :  
Dr Peter Hutten-Czapski;  
phc@jrpc.ca

C'est inévitable : pour une raison ou pour une autre, vous devez être de garde lorsque vous auriez voulu participer à la conférence sur la médecine en milieu rural et éloigné, prendre des vacances ou fêter votre anniversaire. Peu importe le genre de garde d'ailleurs. Pour moi, une des définitions de la pratique en milieu rural, c'est être de garde. Or, il faut pouvoir échanger les périodes de garde. La capacité de faire un changement d'horaire illustre à mon avis comment le système, et les médecins, s'en tirent en ville.

Autrefois, le médecin était tout simplement *de garde*. Tous faisaient tout et c'est pourquoi « de garde » signifiait salle d'urgence + patients hospitalisés + obstétrique + salle d'opération + appels téléphoniques de postes infirmiers éloignés et + + +. C'était comme ça à mon hôpital à mes débuts et je connais quelques endroits au Canada et ailleurs où ça se passe toujours ainsi.

La combinaison du programme d'études non écrit (et faux) selon lequel il faut suivre une formation supplémentaire pour faire quoi que ce soit en dehors du cabinet (p. ex., obstétrique, salle d'urgence) et de l'absence de certification, de formation et d'examen obligatoires portant sur les compétences globales du généraliste, a eu pour effet que les stagiaires en médecine familiale quittent leur programme sans avoir confiance en l'éventail de la médecine rurale. À cause de la convergence de ces facteurs, il est difficile de maintenir des systèmes de garde simples. Pour la plupart d'entre nous en médecine rurale, les périodes de garde sont devenues plus compliquées.

Notre horaire de garde à l'origine, qui couvrirait tout dans un seul tableau de service, s'est retrouvé ventilé en multiples diagrammes de Venn qui se chevauchent. C'est pourquoi certains médecins ruraux semblent être de garde en permanence, mais pour différentes raisons. Je suis de garde en obstétrique (1:7), à l'urgence (1:7, un 7 presque entièrement différent),

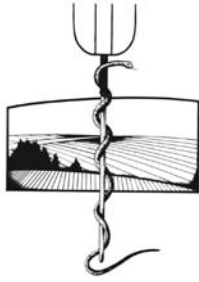
en fin de semaine pour les patients hospitalisés (1:6), assistant en salle d'opération (1:8) et de garde pour les patients orphelins (1:9), sans compter que nos obligations de préceptorat à l'égard des étudiants en médecine figurent maintenant à l'horaire (4:8).

Cette situation devient une incitation perverse à limiter notre champ d'exercice parce qu'il devient encore plus difficile de partir. Heureusement, il y a d'autres façons de s'adapter que de tout laisser tomber ou déménager en ville.

Une façon de procéder consiste à exiger que tous couvrent tout. On pourrait penser qu'un tel arrangement serait difficile à maintenir en période de pénurie croissante d'effectifs, mais cette méthode constitue l'étalon-or à des endroits comme Happy Valley–Goose Bay. Tant qu'il y aura des médecins ruraux, autant âgés que jeunes, qui aiment tout faire, cette approche constituera presque une stratégie de recrutement.

Une autre façon de procéder consister à rendre les périodes de garde indolores. Ici à Temiskaming Shores (Ontario), nous nous occupons tous de nos patientes en obstétrique, ce qui ne laisse pas grand-chose pour le médecin de garde en obstétrique. Ainsi, il n'est jamais difficile de s'en remettre à lui sans ressentir la moindre culpabilité. À moins d'être de garde au cours de la semaine en cause, il est possible de partir, de prendre cette fameuse deuxième bière ou d'aller à la soirée d'anniversaire en se sachant couvert par quelqu'un. Et il n'est pas nécessaire de compter les faveurs en agissant ainsi.

Outre ces stratégies, il ne faut pas oublier que la prochaine fois que votre collègue vous demande de le remplacer pendant une période de garde, il est préférable pour vous et pour la ville d'avoir l'habitude de répondre « Bien entendu ! »... Il restera à déterminer qui sera de garde cette année pendant que tous les autres seront partis à la conférence sur la médecine en milieu rural et éloigné, mais bon.



# President's message. Partnering with communities

*John Wootton, MD  
Shawville, Que.*

*Correspondence to: Dr. John Wootton; jwootton@srpc.ca*

### Society of Rural Physicians of Canada

### Société de la médecine rurale du Canada

#### PRESIDENT / PRÉSIDENT

JOHN WOOTTON, MD  
Shawville, Que.

#### PAST-PRESIDENT

#### PRÉSIDENT SORTANT

KARL STOBBE, MD, CCFP(EM),  
ECCP  
Beamsville, Ont.

#### SECRETARY / SECRÉTAIRE

GABE WOOLLAM, MD  
Happy Valley-Goose Bay, NL

#### TREASURER / TRÉSORIER

TODD YOUNG, MD  
Springdale, NL

#### MEMBERS-AT-LARGE

#### MEMBRES EXTRAORDINAIRES

GARTH CAMPBELL, MD  
Beausejour, Man.

DARLENE KITTY, MD, CCFP  
Chisasibi, Que.

#### ADMINISTRATIVE OFFICER

#### RESPONSABLE ADMINISTRATIF

LEE TEPPERMAN  
SRPC Office, Shawville, Que.

#### SRPC / SMRC

Box 893,  
Shawville QC J0X 2Y0;  
819 647-7054,  
877 276-1949;  
fax 819 647-2485;  
admin@srpc.ca

srpc.ca

Increasingly, it is recognized that medicine must partner with other disciplines if it is to have any hope of delivering quality services of increasing complexity. Indeed, the concept of treating the “whole patient” is recognition that people cannot be described in terms of one disease or one organ or one problem. Similarly, the knowledge base required to fully address all these issues is not the property of one discipline but is shared by many.

Difficult as the practical implementation of the above may sometimes be in practice, it is the path that we are on, and is in fact the path on which rural medicine has arguably always been. It has always been necessary for service providers in rural communities to extend their reach — for the home care nurse to be both nurse and mental health worker, for the ward nurse to manage both obstetrics and palliative care.

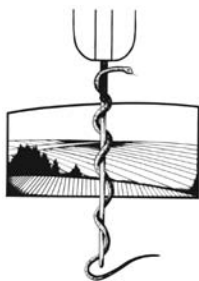
As we gain more experience with the roles of all of our partners, is there one we are forgetting? Where is the community in our discussions? Do we adequately understand that voice or engage its energy and spirit?

When the SRPC connects with community leaders, it hears distressing stories: communities that lose physicians they are unable to replace; facili-

ties that are closed or downsized, causing patients to travel longer distances for basic or emergency care. Incentive upon incentive is lavished on prospective recruits to entice them to a community in competition with their neighbour down the road, using resources that may have been needed for other things. Beneath this distress can be heard the voice of need but also a history of respect and collaboration. Communities in rural Canada need us to be part of their communities and shouldn't have to beg us to be there for them.

Many of the things that need to happen for the trickle of physicians who choose to practise in rural Canada to become a stream, even a river, have to do with admission practices, or undergraduate and postgraduate education, or local or regional infrastructure. Although these things may not, strictly speaking, be community issues, we need the support of rural communities to impress on policy-makers the importance of taking the needed steps in this direction. We need the support of communities if we are to effectively advocate for the change at every level that is needed to reverse the trends toward centralization and specialization. In this sense, we need them more than they need us. Let's be good partners. Together, I have the feeling we can make a difference.





# Message du président. Créer des partenariats avec les communautés

*John Wootton, MD  
Shawville (Qc)*

*Correspondance : Dr John  
Wootton; jwootton@srpc.ca*

On reconnaît de plus en plus que la médecine doit créer des partenariats avec d'autres disciplines si elle veut avoir le moindre espoir de fournir des services de qualité de plus en plus complexes. Le concept du traitement « holistique » du patient reconnaît en fait qu'il est impossible de décrire les gens en fonction d'une maladie, d'un organe ou d'un problème. De même, la base de connaissances nécessaire pour s'attaquer à tous ces problèmes appartient non pas à une seule discipline, mais à plusieurs.

L'application de ce qui précède est parfois difficile dans la pratique, mais c'est la voie que nous avons empruntée. On peut même soutenir que cette voie a toujours été celle de la médecine rurale. Les fournisseurs de services des communautés rurales ont toujours dû étendre leur rayonnement : l'infirmière en soins à domicile est à la fois infirmière et travailleuse en santé mentale; à l'hôpital, l'infirmière de service doit gérer aussi bien les soins obstétricaux que les soins palliatifs.

À mesure que nous nous habituons à intégrer les rôles de tous nos partenaires, y en a-t-il un que nous oublions ? Où se trouve la communauté dans nos discussions ? Comprendons-nous bien sa voix ? Utilisons-nous bien son énergie et son esprit ?

Lorsque la SMRC communique avec des dirigeants communautaires, elle entend des choses désolantes : des communautés qui perdent des médecins qu'elles sont incapables de remplacer, des établissements fermés ou des services

réduits, ce qui oblige les patients à parcourir de plus longues distances pour recevoir des soins de base ou des soins d'urgence. On multiplie les incitatifs offerts aux candidats pour les attirer dans une communauté et faire concurrence au village voisin; ce faisant, on utilise des ressources qui auraient pu servir à autre chose. Derrière ce désarroi, on entend la voix du besoin, mais aussi une tradition de respect et de collaboration. Les communautés du Canada rural ont besoin que nous en fassions partie et elles ne devraient pas avoir à nous supplier d'être là pour elles.

Parmi les choses qui doivent se produire pour que le nombre de médecins qui décident de pratiquer en milieu rural cesse de se mesurer au compte-gouttes et devienne un ruisseau, voire une rivière, beaucoup portent sur les pratiques d'admission, la formation prédoctorale et postdoctorale, ou l'infrastructure locale ou régionale. Ces éléments ne sont pas à strictement parler des problèmes communautaires, mais nous avons besoin de l'appui des communautés rurales pour faire comprendre aux responsables des politiques l'importance des interventions nécessaires. Nous avons besoin de l'appui des communautés si nous voulons préconiser efficacement à tous les niveaux les changements qui s'imposent pour casser les tendances à la centralisation et à la spécialisation. À cet égard, nous avons besoin des communautés plus qu'elles ont besoin de nous. Soyons de bons partenaires. Ensemble, je pense que nous pouvons faire une différence.

## “You don’t know what you’ve got till it’s gone”\*: the role of maternity care in community sustainability

*Christiana Miewald, PhD*

*Centre for Sustainable Community Development, Simon Fraser University, Burnaby, BC*

*Michael C. Klein, MD, CCFP, FCFP*

*Child & Family Research Institute, and Department of Family Practice, University of British Columbia, Vancouver, BC*

*Catherine Ulrich, RN, MSc*

*David Butcher, MD*  
*Northern Health Authority, Prince George, BC*

*Sabba Eftekhary, MPH, MHA, MD*  
*Ontario Ministry of Health and Long-term Care, Toronto, Ont.*

*Jessica Rosinski, MA*  
*Indian and Northern Affairs Canada, Vancouver, BC*

*Andrea Procyk, BA*  
*School of Community and Regional Planning, University of British Columbia, Vancouver, BC*

*Correspondence to:*  
*Dr. Christiana Miewald, Centre for Sustainable Community Development, Simon Fraser University, 8888 University Dr., Burnaby BC V5A 1S6; cmiewald@sfu.ca*

*This article has been peer reviewed.*

*\*Joni Mitchell, “Big Yellow Taxi”*

**Introduction:** Many small hospitals in British Columbia are altering their role in maternity care or abandoning it altogether. This paper explores the role of maternity care in the sustainability of rural communities in northern BC.

**Methods:** We carried out a qualitative case study by conducting an ethnographic examination of 4 communities with varying levels of maternity care services.

**Results:** Although maternity care is not the only factor to influence community sustainability, it does intersect with other economic and social conditions. Maternity care affects a variety of forms of community capital, including economic development, social ties and relations, and the cultural meanings of childbirth.

**Conclusion:** Decision-makers should take into account the community-wide consequences of changes to the role and function of maternity care facilities.

**Introduction :** Beaucoup de petits hôpitaux de la Colombie-Britannique modifient leur rôle dans les soins en maternité ou l’abandonnent entièrement. Dans cette communication, nous analysons le rôle des soins en maternité dans la viabilité des communautés rurales du nord de la Colombie-Britannique.

**Méthodes :** Nous avons procédé à une étude de cas qualitative en analysant l’ethnographie de quatre communautés offrant divers niveaux de services de soins en maternité.

**Résultats :** Même si les soins en maternité ne sont pas le seul facteur qui joue sur la viabilité des communautés, ils se conjuguent à d’autres conditions économiques et sociales. Les soins en maternité ont une incidence sur divers aspects du capital communautaire, y compris le développement économique, les relations et les liens sociaux, ainsi que la signification culturelle de l’accouchement.

**Conclusion :** Les décideurs devraient tenir compte des répercussions à l’échelle communautaire de la modification du rôle et du fonctionnement des établissements de soins en maternité.

### INTRODUCTION

The purpose of this paper is to explore the relation between maternity care services and community sustainability. It has been hypothesized that maternity care plays an important, yet often hidden, role in the life of communities and that service reductions or closures can result in a cascade of negative outcomes for individuals, families and communities.<sup>1</sup> In many instances, these changes disproportionately affect the poor, First

Nation communities and other disadvantaged groups. We explore how decisions affecting maternity care services within rural communities can create changes to various aspects of community life, including economic sustainability, and pre- and postnatal care that women receive, as well as the social fabric of the community.

### BACKGROUND

In British Columbia, small hospitals are



losing their capabilities for maternity care, and some centres with capability for cesarean delivery are closing or being downgraded. In 1997 in BC, there were 63 facilities providing maternity care and serving fewer than 500 births. By 2005, there were only 50 such facilities. This shrinkage is caused by a number of factors including the following: declining birth rates; extremely small delivery volumes, leading to concerns about the maintenance of competency of hospital staff to handle both normal and complicated births; the closure of operating rooms to perform cesarean deliveries; the loss of nursing staff specialized in maternity care; the loss of medical staff comfortable with maternity care; and, often, the ability of small surgical programs to support a continued maternity care service.<sup>2,3</sup>

Although this is a controversial issue, there is a literature base that shows that small units without capability for cesarean delivery can continue to function safely, provided that they are a part of a well-functioning perinatal regional system.<sup>4,5</sup> Although nurses in small units have always been generalists, nurses in larger rural hospitals have increasingly had to become generalists, while previously, when birth volumes were greater, they were able to specialize in maternity or maternal and newborn care.

When access to local maternity care is reduced and women travel to distant locations to give birth, problems of access and perinatal outcome ensue.<sup>6-8</sup> Although outcomes for small premature infants are improved by centralization, outcomes for babies of average size and weight are not.<sup>9-10</sup> When a community no longer has maternity care and the care is not available in another community relatively close by, premature births, neonatal asphyxia, and other maternal and newborn complications increase, despite women ultimately receiving competent care in a distant location.<sup>11-15</sup> Although the effects of centralization *in some settings* may not have a negative impact on the health of women and their babies, based on the general literature, we hypothesized that this change in the way in which maternity care is provided to small rural communities has wide-ranging effects, "including reduced patient choice, quality of care, safety and sustainability of maternity services, [and] lack of trained staff and professional development."<sup>16</sup>

## METHODS

The structure for understanding the role of maternity care in community sustainability was interpreted based on qualitative methods. Methods of data collection consisted of key informant interviews, focus groups and observational data. To collect the

relevant data from each of the case study communities, we conducted a series of interviews and focus group discussions with the following populations: physicians, nurses, midwives and other providers of maternity support services (e.g., doulas, childbirth educators, breastfeeding counsellors, outreach workers), hospital administrators, health officers, local business leaders, economic development officials, local elected officials (e.g., mayor, city and band councillors), social workers, pregnant women in their last trimester and women who had given birth within the past 12 months. Participants were selected using a snowball sampling technique. Key informants from each community were asked to suggest representatives from various stakeholder groups.

Questions concentrated on participants' perceptions of the role of local maternity care in the sustainability of their communities. Focus group discussions and interviews were tape-recorded and transcribed. These transcripts, along with field notes, were analyzed using a grounded theory approach.<sup>17</sup> Transcripts were independently reviewed by the primary co-investigators and research assistants and grouped into themes that reflected similar opinions, experiences and attitudes. Contrary views and areas of disagreement among respondents were noted. Data interpretation was discussed and agreed on by the primary co-investigators and validated with a sample of those involved in maternity care in each community. This included sharing preliminary results with community members and asking them to verify, correct or enhance the thematic framework developed by the researchers.

## Research sites

We studied 4 communities that were experiencing many of the key stresses in providing maternity care in rural and remote BC. These stresses include declining populations and lower birth rates, challenges in attracting and retaining health professionals interested in providing maternity care, and increasing economic pressures to centralize health care services.

Two communities, Quesnel and Vanderhoof, have hospitals with the full range of primary maternity services, including capability for cesarean delivery, and represent examples of relatively stable maternity care. Quesnel has a population of about 9000, with about 230 births in fiscal year 2006/07, and Vanderhoof has a population of about 4000 and had about 130 births in 2006/07.

In contrast, Fort St. James, with a population of

about 1400 and about 50 births in 2006/07, represents a much less stable situation. At the Stuart Lake Hospital in Fort St. James, the operating room closed in 2001, which means that pregnant women thought to be at risk of complications or who require epidural analgesia are sent to larger hospitals, usually Vanderhoof, which is 60 km away. In the summer of 2007, the hospital suspended maternity care because of a physician shortage. Thus, most births took place outside of the community.

Finally, Fraser Lake, with a population of about 1200 and about 18 births in 2006/07, is an example of a community without capability for any intrapartum maternity services. Women receive prenatal care at the Community Health Centre until between 32 and 36 weeks' gestation, at which point they are referred to a physician in Vanderhoof for late third trimester, delivery and immediate postpartum care. Fraser Lake is unique in our sample in that all staff are on salary and group care is common for prenatal and other types of care.

## RESULTS

We conducted 51 interviews and 12 focus group discussions with members from the following sample populations: physicians, nurses, midwives and other providers of maternity support services, hospital administrators, health officers, local business leaders, economic development officials, local elected officials, social workers, pregnant women and new mothers. The themes that emerged speak to the various ways in which respondents felt that maternity care affects community sustainability. These relationships touch on economic, social and cultural capital, all of which are critical for community sustainability. The quotes used in this paper have been chosen because they typify a common view or theme.

### Theme 1: maternity care affects current and future potential for economic development

A number of studies have noted the relation between health care services and economic development, particularly for rural communities.<sup>18-22</sup> Although most respondents in this study felt that the lack of maternity care services would not cause long-established families to leave the area, it would have a potentially negative effect on the recruitment of young families to the region.

Health care is a major concern ... for young families. ... One of the things that we've targeted is not just retirees ... but also

"footloose entrepreneurs," people who can have their businesses anywhere. There are lots of people out there in the weeds like that in rural communities, as broadband telecommunications improve. ... Living here isn't for everybody, obviously, but it's very appealing to some people. So if health care gradually is ground away, then living here may not be as attractive to those people. — Community leader

In addition to difficulties in attracting new residents, the lack of maternity care services can have a negative effect on local businesses. Work absences would be predicted to increase if residents had to go out of town for appointments, which would affect the productivity of an operation. Finally, attracting young people to rural communities is particularly important as the existing population ages and the younger generation moves away.

The other part of [community sustainability] is people coming in, which is a future life blood for you in terms of your business, in terms of your community and some of the livelihood or identity for the community, [it] just doesn't exist anymore because people are going to be hesitant [to move here]. — Human resources manager

### Theme 2: maternity care affects other maternal and health care services and continuity of care

Labour and delivery services are embedded within much larger systems of health services and supports, including pre- and postnatal care. Having access to these services is held to be critical for the health of both the mothers and their babies. However, the availability of these services may also be reduced or eliminated when most births take place outside of the community. In addition, the loss of maternity care services to hospitals may affect the provision of other linked medical and surgical services.

Those in the health care field that we spoke with suggested that intrapartum maternity services were critical to the continuity of antenatal and postpartum services. However, in communities in which women were sent elsewhere to give birth, there was the feeling that continuity of care was lacking.

There was a huge disconnect on the continuity of the care because ... [the women were] taken on as an emergency case so that [the doctors at the referral hospital] really didn't develop the relationship with the mom. So the mom went there, she delivered and sometimes they would send her back within a couple of hours the next day and it was like "off we go." Then we would try and pick up the pieces here. I found that really disjointed and disconnected and I'm sure lots [of women] did too because we weren't sure what they were told there and what we needed to tell [them] here. — Nurse

For hospitals, having a full range of maternity care services, including capability for cesarean delivery, requires the maintenance of an operating room and trained staff. The skills and equipment necessary to provide cesarean deliveries benefit the community in other ways through supporting the maintenance of a functioning operating room in the hospital. The existence of an operating room available for general surgery helps maintain the anesthetic and surgical skill sets required but, alone, is not sufficient for maintaining cesarean delivery capability. Physicians from a hospital with full maternity services stressed the relationship between having an operating room on site and maintaining maternity care in the community. According to one physician,

We wouldn't have maternity care if we didn't have OR. If we didn't have the kind of backup and [other] stuff that we do. Likewise, we've always made the argument that we need the OR because we do maternity care. So I think it is almost foundational to what we have.

### **Theme 3: maternity care affects retention and recruitment of physicians and other health care providers**

The recruitment and retention of physicians and other medical staff is vital to the sustainable functioning of both hospitals and the wider community.<sup>23-26</sup> Within small communities, medical staff can play critical social roles within rural communities. They are often embedded within the larger social fabric and may participate in "organizing local events and arbitrate in disputes among neighbours; findings that infer a role in community 'leadership.'"<sup>27</sup> However, an unstable maternity care situation, decreasing birth volume and concerns about the safety of local maternity care without cesarean delivery can result in stress for providers of rural maternity care, and affect retention and recruitment.<sup>28</sup>

The loss of maternity care may result in some doctors leaving the area. In our study, physicians in stable maternity care situations enjoyed providing maternity care and stated that they would leave their current position if maternity care was reduced or eliminated. It was seen as "part of who we are and why we came here." A point mentioned by several participants was that a different type of physician would then arrive, one whose motivations were different and less committed to the community. One hospital administrator noted that,

I think that it is the provision of care through that continuum that is one of the reasons why GPs are GPs. If they wanted to focus on pathology they would become a specialist. They are a

GP because they have an interest in the delivery of service through the continuum of care from birth literally right through to palliative care or old age. If you pull out the maternity part in the middle, I don't see how stable the rest of it can actually be. I would think it would have an impact on your ability to attract and retain physicians.

In addition, general or family physicians providing anesthetic services (general practitioner anesthetists) would lose a significant proportion of their professional practice and ongoing experience. According to one nurse,

If maternity goes then you've lost half your docs and ... you're probably going to lose your GPs doing anesthesia along with those maternities. These docs are in their professions for certain reasons and they have these specialties they need to practise. And if they can't practise it in the community they're in, and they can go somewhere else and practise it, then they aren't going to stay in that community.

There were skeptics about the importance of maternity care to the retention of providers. Apart from an emotional attachment by the health care providers and the community at large, 2 interviewees (a hospital administrator and a health officer) felt that removing maternity services would not affect any other aspect of health service delivery:

If it was neutral, if emotions weren't involved, then notionally [removing maternity services from a community] shouldn't affect [any other aspect of health care]. Logically, it shouldn't affect anything. [However] it would because it would create a huge uproar in the community. Not just the community at large, but the health care community itself as well. — Hospital administrator

Though we did not find this in our study, the younger generation of family physicians in rural settings may be willing to give up the burdens of complete continuity for a system of "hard call," in which they attend births for all the family physicians in the group on a rota system and take care of needed pre- and postnatal care as well.<sup>9</sup>

### **Theme 4: maternity care affects the social fabric and sense of place within a community**

Health care facilities can also play an important role in how the community interacts with health care services. For many respondents, the ability of women to give birth in their community was an important part of creating and maintaining positive social ties within the community and between the community and the hospital. Having women give birth outside of the community was viewed as a major disruption.

---

Participants commented on the effect that requiring women to leave the community to give birth has on the community, the family and the woman.

I think it fragments the community when you take women and ship them out to give birth. It creates a big distance between the natural support that a woman and her partner need during that process, both with the bonding and with community acceptance of this new community member. As soon as you lose those services and start shipping these women out you really start fragmenting families and fragmenting communities. I think that we have to go back to that ability to attract and retain people in the communities and build the community bonds. — Hospital administrator

One community leader articulated the difference between the significance of birth compared with other hospital procedures, such as surgery. He said that he would be fine to have his appendix removed in Prince George, but he thought that his being born and his children giving birth in Quesnel was a whole other matter:

[If deliveries were not performed in the community anymore] I suppose that the community would still be here, but I think that there are certain aspects of health care, maternity is one of them and end of life is another one of them, where there's a need for family and friends to be around. That's particularly true with maternity and much more so with end of life care. So I think that those 2 elements are very important to the sustainability of the community. — City councillor

According to one community member, being able to provide maternity care may also be a source of pride to the community:

I think it strengthens the community and its growth. With death comes birth and the idea that you're getting new community members born and raised in our community, it may not have a real, [but] it has a very symbolic impact on the community in the sense that "Oh. That so and so, he was born and raised in our town." ... The thought of a child not being born here when 5 generations are, that could be very upsetting, and that is that strong sense of connection to the community which, with our town, they definitely have. Having to go away is significant — you break the chain.

Providing maternity services is also viewed as a positive function of hospitals:

I think [maternity care] is an important service from a general hospital vibrancy standpoint. Hospitals without maternity services, I think, sort of become elder care centres. It keeps us full spectrum and it keeps us vibrant. It keeps young people coming here. It gives people that initial good feeling about the organization so you don't start skewing toward [the perception that] it's the place to go when you are really sick and/or dying. In a community like this that kind of feel can start to become a spiral downwards. — Hospital administrator

## DISCUSSION

The purpose of this research was 3-fold. First, we sought to situate maternity care within the spectrum of goods and services that contribute to a healthy and sustainable community. Based on our research, we argue that maternity care can affect the physical, cultural, spiritual and economic makeup of a community. It is not a service that can be removed or altered without having some effect on a variety of other sectors of the community. This is particularly true for rural areas that depend heavily on available local resources.

What we found by examining communities with different levels of services for maternity care is that it is the lack of stability that creates the greatest impact. In Fraser Lake, which in recent history has never had services for maternity care, structures have been put in place to mitigate problems that might arise. For example, physicians in Fraser Lake have a set protocol for transferring their patients to Vanderhoof, mitigating continuity of care issues. In settings where the maternity care services are uncertain, it is difficult for staff and women to be fully prepared for what may come, though contingency plans are in place. For those communities with stable maternity care services, maternity care is considered an important or essential resource. Yet, even apparently stable systems can come under intermittent internal or external pressures.

Second, we argue that when maternity care decisions are made, based on legitimate safety issues or severe financial or funding constraints, they nevertheless need to be made with an appreciation of the broad context of community sustainability. Although communities may adapt to changes in maternity care services, the secondary effects of such changes should be taken into consideration. For women living in rural areas, and particularly for First Nation women, loss of control about where they give birth may have significant effects on their perceptions and feelings about birth.

Third, we suggest that when maternity care must change, policy-makers need to put systems or programs in place that buffer any losses. This is particularly true as the demographics of rural BC ages and the need for, or appropriateness of, local maternity care changes. At the same time that health policy must ensure that services meet the needs of an aging population, it is vital to also acknowledge the needs of younger generations. Although the existent system of maternity care may not be feasible or even desirable in some rural communities, ensuring that



the continuum of maternal and child health does not collapse is vital for community sustainability. This means developing creative alternatives that meet the specific needs of each community and ensuring that a continuum of care remains in place, even if some elements cannot be provided locally. New organizational models of care also need to be developed to support and preserve the precious resource of physicians providing maternity care.<sup>29</sup>

## CONCLUSION

The role of maternity care in community sustainability is a complex one, with various factors interacting. For example, a declining birth rate means that general practitioners may not be able to keep up their skills and, therefore, may be reluctant to include intrapartum maternity care because of difficulties in coverage schemes when fewer physicians are available to attend births. This would result in more women being referred outside of their communities. At the same time, a nonexistent or unstable system of maternity care may be a factor influencing where young families locate. The lack of a young workforce may affect decisions around potential for economic development and could be a factor contributing to the viability of other services, which further diminishes the social and economic life of a community. The relationship between medical services and population trends is an area that demands further study.

**Acknowledgements:** The authors thank Glen Hearn and William Trousdale for advice on rural decision-making; Lela Zimmer, Karen MacKinnon, Ronald Lindstrom and John Andruschak for advice and support; and Oralía Gómez-Ramírez for her interviewing and work as a research assistant.

**Competing interests:** None declared.

**Funding:** This research was supported by grants from the Vancouver Foundation and Michael Smith Foundation.

## REFERENCES

1. Klein M, Johnston S, Christilaw J, et al. Mothers, babies, and communities. Centralizing maternity care exposes mothers and babies to complications and endangers community sustainability. *Can Fam Physician* 2002;48:1177-9.
2. Lynch N, Thommasen H, Anderson N, et al. Does having cesarean section capability make a difference to a small rural maternity service? *Can Fam Physician* 2005;51:1238-9.
3. Iglesias S. The future of rural health: Comprehensive care of triage? *Can J Rural Med* 1999;4:32-3.
4. Leeman L, Leeman R. Do all hospitals need cesarean delivery capability? An outcomes study of maternity care in a rural hospital without on-site cesarean capability. *J Fam Pract* 2002;51:129-34.
5. Peddle LJ, Brown H, Buckley J, et al. Voluntary regionalization and associated trends in perinatal care: the Nova Scotia Reproductive Care Program. *Am J Obstet Gynecol* 1983;145:170-6.
6. Reynolds JL, Klein M. Recommendations for a sustainable model of maternity and newborn care in Canada. In: *Proceedings of the future of maternity care in Canada: crisis and opportunity*. London (ON): University of Western Ontario; 2000.
7. Walker DE. The obstetric care crisis facing Ontario's rural hospitals. *CMAJ* 1993;149:1541-5.
8. Nesbitt TS, Connell FA, Hart LG, et al. Access to obstetric care in rural areas: effect on birth outcomes. *Am J Public Health* 1990;80:814-8.
9. Larimore WL, Davis A. Relation of infant mortality to the availability of maternity care in rural Florida. *J Am Board Fam Pract* 1995;8:392-9.
10. Nesbitt TS, Larson EH, Rosenblatt RA, et al. Access to maternity care in rural Washington: its effect on neonatal outcomes and resource use. *Am J Public Health* 1997;87:85-90.
11. Samuels S, Cunningham JP, Choi C. The impact of hospital closures on travel time to hospitals. *Inquiry* 1991;28:194-9.
12. Black D, Fyfe I. The safety of obstetric services in small communities in northern Ontario. *CMAJ* 1984;130:571-6.
13. Chamberlain M, Barclay K. Psychosocial costs of transferring indigenous women from their community for birth. *Midwifery* 2000;16:116-22.
14. Frankenberg E, Thomas D. Women's health and pregnancy outcomes: Do services make a difference? *Demography* 2001;38:253-65.
15. Grzybowski SC, Cadesky A, Hogg W. Rural obstetrics: a 5-year prospective study of the outcomes of all pregnancies in a remote northern community. *CMAJ* 1991;144:987-94.
16. Ireland J, Bryers H, van Teijlingen E, et al. Competencies and skills for remote and rural maternity care: a review of the literature. *J Adv Nurs* 2007;58:105-15.
17. Strauss A, Corbin J. *Basics of qualitative research: techniques and procedures for developing grounded theory*. 2nd ed. Thousand Oaks (CA): Sage Publications; 1998.
18. Doeksen GA, Johnson T, Biard-Holmes D, et al. A healthy health sector is crucial for community economic development. *J Rural Health* 1998;14:66-72.
19. Holmes GM, Slifkin RT, Randolph RK, et al. The effect of rural hospital closures on community economic health. *Health Serv Res* 2006;41:467-85.
20. Thompson JG. Economic effects of the outmigration of obstetric services in a rural county. *J Rural Health* 1996;12:100-9.
21. McDermott RE, Parsons R, Cornia G. The role of community hospitals in the performance of local economies. *J Health Care Finance* 1994;21:55-65.
22. Christianson JB, Faulkner L. The contribution of rural hospitals to local economies. *Inquiry* 1981;18:46-60.
23. Pope A, Grams G, Whiteside C, et al. Retention of rural physicians: tipping the decision-making balance. *Can J Rural Med* 1998;3:209-16.
24. Morrisey MA, Kletke PR, Marder WD. The role of local hospitals in physician rural location decisions. *Inquiry* 1991;28:7-18.
25. Medves JM, Davies B. Sustaining rural maternity care — Don't forget the RNs. *Can J Rural Med* 2005;10:29-35.
26. Rourke JT. Politics of rural health care: recruitment and retention of physicians. *CMAJ* 1993;148:1281-4.
27. Farmer J, Lauder W, Richards H, et al. Dr John has gone: assessing health professionals' contribution to remote rural community sustainability in the UK. *Soc Sci Med* 2003;57:673-86.
28. Grzybowski S, Kornelsen J, Cooper E. Rural maternity services under stress: the experience of the providers. *Can J Rural Med* 2007;12:89-94.
29. Orrantia E, Poole H. Evaluation of a novel model for rural obstetric care. *Can J Rural Med* 2010;15:14-8.

# Medical school strategies to increase recruitment of rural-oriented physicians: the Canadian experience

*Ronak K. Kapadia, MD*  
Resident, Department of  
Clinical Neurosciences,  
University of Calgary,  
Calgary, Alta.

*Brent M. McGrath,*  
*MD, MSc, PhD*  
Resident, Department of  
Medicine, Dalhousie  
University, Halifax, NS

*Correspondence to:*  
*Dr. Ronak K. Kapadia,*  
*Department of Clinical*  
*Neurosciences, University of*  
*Calgary, Foothills Medical*  
*Centre, 1405 29 St. NW,*  
*Calgary AB T2N 2T9;*  
*rkapadia@dal.ca*

*This article has been peer*  
*reviewed.*

The decision of the physician to practise in a rural setting involves a multitude of personal and professional preferences, ideals and values. However, among these many factors, there is little dispute that Canadian medical schools, with the ability to directly influence the career choices of their graduating students, have an important societal responsibility to strive to address the issues facing rural medicine. The aim of this paper is to summarize the evidence for interventions that are feasible and that may be used by Canadian medical schools to increase the number of graduates who will become rurally oriented physicians. We outline several interventions and make recommendations to improve the recruitment of rurally minded medical students and the rural training of all medical students.

La décision du médecin de pratiquer dans un milieu rural repose sur une multitude de préférences, de valeurs et d'idéaux personnels et professionnels. Parmi ces nombreux facteurs, toutefois, il est généralement reconnu que les facultés de médecine du Canada, qui peuvent avoir un effet direct sur le choix de carrière de leurs étudiants finissants, ont une responsabilité sociale importante, soit celle de chercher à s'attaquer aux problèmes qui confrontent la médecine rurale. Ce document vise à résumer les données probantes au sujet d'interventions possibles et que les facultés de médecine du Canada peuvent utiliser pour augmenter le nombre de diplômés qui deviendront des médecins à orientation rurale. Nous décrivons plusieurs interventions et présentons des recommandations afin d'améliorer le recrutement d'étudiants en médecine à orientation rurale, ainsi que la formation en médecine rurale de tous les étudiants en médecine.

## INTRODUCTION

Central to any discussion about health care policy in Canada is a consideration of the disparities that exist in the delivery of services. One such major disparity exists in the rural communities of Canada, which is often attributed to a paucity of physicians in these areas. Although this physician shortage is widely recognized in the literature, often publicly debated and addressed through a myriad of programs and incentives, a satisfactory solution appears chronically out of reach for many of the affected communities. The decision of the physician to practise in a rural setting involves a multitude of personal and professional preferences, ideals and values. However, among these many factors, there is little dispute that Canadi-

an medical schools, with the ability to directly influence the career choices of their graduating students, have an important societal responsibility to strive to address the issues facing rural medicine.<sup>1-4</sup> As such, medical schools across Canada are beginning to consider adjusting their admission policies to recruit applicants with a demonstrated interest in rural medicine, increasing rural exposure during both the preclinical and clinical years and increasing the number of postgraduate training opportunities in rural medicine.<sup>1,3</sup> The purpose of this paper is to review evidence for interventions that may be used by all Canadian medical schools to increase the number of graduating physicians choosing to practise in rural communities and thus ameliorate deficits to the health of rural populations.

## METHODS

Fifty-seven relevant studies were identified by a MEDLINE and PubMed search covering 1966 to 2010. We used the keywords “medical school,” “rural population,” “rural health services,” “physicians,” “recruitment,” “admissions,” “undergraduate training,” “postgraduate training,” “medically underserved area” and “professional practice location.” We determined relevance and subsequent selection based on the title of the article and review of available abstracts. Additional articles were obtained from the reference lists of pertinent systematic reviews, studies and editorials identified in the initial search. We excluded articles that were not printed in English. We searched Canadian government websites (e.g., Statistics Canada and the Canadian Institute for Health Information) for demographic data on rural populations, physician distribution and rural population health status.

We preferred literature based on the experiences of Canadian institutions but also included international studies. Owing to the nature of the interventions evaluated and the general unfeasibility of randomized control trials, discrimination of articles based on type of trial was not a major selection factor. Deficits and limitations are pointed out as relevant.

## PHYSICIAN DISTRIBUTION AND RURAL POPULATION HEALTH

Studies on the geographic distribution of physicians in Canada over at least the past decade have consistently reported a shortage in rural areas. Data from 2004 show that 9.4% of Canadian physicians practised in rural communities, serving the 21.1% of the Canadian population that resided in rural areas.<sup>5</sup> These numbers show little improvement from the 1996 figures, which estimate that 9.8% of Canadian physicians served their respective rural communities, which, at the time, made up 22.2% of the total Canadian population.<sup>5</sup> The use of the “full-time equivalent” measure, which takes into account practice characteristics of physicians, likely provides a better indication of the geographic maldistribution of physicians compared with early studies that relied on counting absolute numbers of physicians only.<sup>5,6</sup> Irrespective of these methodological differences, both studies point out a substantial shortage of physicians in rural areas.

The data reported from 2004 show that about 16% of Canadian family physicians and 2.4% of

specialists were located in rural areas.<sup>5</sup> The especially small number of specialists confers additional challenges to rural medicine, such as the necessity for family physicians to engage and be trained in a broader scope of clinical practice (e.g., emergency medicine, obstetrics and gynecology) and to work longer hours, thus potentially taking away from their family medicine office hours, and also increases job stress.<sup>7</sup> As well, the lack of specialists practising in a rural area has implications for rural residents in terms of access to care, travel time, distance travelled, potential need for an escort and lost income.<sup>8-10</sup>

Compounding the issue of physician supply in rural areas is a migratory trend of physicians from rural to urban centres that has been consistently reported from 1986 to 2001. This has resulted in a net decrease of 20% of practising rural physicians over this period.<sup>11</sup> Rourke<sup>2</sup> recently reported data from 2001 to 2005 of an average annual emigration of 368 (8%) rural physicians to urban centres, compared with an average annual increase of 241 (0.5%) immigrating urban physicians. Given the evidence of an imbalance between physician–population ratios in rural regions, how has rural population health been affected?

In 2006, the Canadian Institute for Health Information undertook the first intensive pan-Canadian study on the health status of Canadians living in rural regions compared with urban populations.<sup>12</sup> This report concluded that rural populations had a higher overall mortality rate and performed worse on a number of health-related measures compared with their urban counterparts.<sup>12</sup> The distinction was particularly marked in instances of circulatory diseases, injury, occupational injury and suicide.<sup>12</sup> Furthermore, rural residents were more likely to have poorer health-related behaviours (e.g., smoking, poor dietary habits) and higher proportions of their population were of low income and had attained less than secondary education compared with urban populations.<sup>12</sup> Although these data are descriptive in nature and not meant to imply causal relationships, the assertion of many government officials and health care workers alike is that the health status of rural Canadians, although multifactorial, is negatively affected by a disparity in physician services.<sup>9</sup>

## ARE MEDICAL STUDENTS A REFLECTION OF CANADIAN DEMOGRAPHICS?

As publicly funded institutions, medical schools in Canada have as part of their mandate the goal of

representing and addressing the needs of the communities that they serve. Similar studies conducted in 1965<sup>13</sup> and more recently in 2001<sup>14</sup> on the demographics of first-year medical students reveal that this has not been a reality. The more recent survey, though limited by methodological difficulties that resulted in the exclusion of Quebec universities, but with a relatively high overall response rate of 80%, showed that medical students are not representative of the general Canadian population in terms of ethnic background, socio-economic status and rural background.<sup>14</sup> In 2001, only 10.8% of first-year medical students reported a rural background (i.e., had attended high school in a rural setting), although 22% of the Canadian population reported living in a rural area at that time.<sup>14,15</sup> The study of first-year medical students in 1965 reported a similar underrepresentation of 8.4% medical students with a rural background compared with the 30.4% rural population.<sup>13</sup> It appears that medical school classes do not include sufficient numbers of students from rural backgrounds to represent the Canadian rural population. The relevance of this to the shortage of rural physicians lies in the characteristics of rural physicians who are currently practising.

### **CHARACTERISTICS OF RURAL PHYSICIANS: WHY MEDICAL SCHOOLS MATTER**

When comparing physicians in rural practice with their urban counterparts, certain characteristics become readily apparent. Rural physicians are 2–4 times more likely to have been brought up or to have spent a substantial amount of time in a rural community and are 2–3 times more likely to have been exposed to rural training in their undergraduate medical curriculum, postgraduate training or both.<sup>2,16–20</sup> These widely reported associations present medical school administrators with the opportunity to increase the likelihood that a greater proportion of their graduating class will pursue a rural practice. Relating to these characteristics, 3 avenues for interventions that Canadian medical schools can potentially employ should be considered: selection and admissions, undergraduate medical school training and postgraduate training and recruiting. Successful strategies will likely include multiple interventions staggered throughout the cycle of students entering and graduating from medical school and residency programs.<sup>21</sup>

## **RURAL STUDENTS GETTING INTO MEDICAL SCHOOL**

### **Too few applicants or too few admission offers?**

The smaller proportion of matriculating Canadian medical students with a rural background raises questions about the cause of this disparity. Is this because of too few rural applicants to medical school or a bias of the medical school against accepting students from a rural background?

There has been speculation that because of the predominantly urban location of most Canadian medical schools and the composition of their respective admission committees,<sup>22–24</sup> rural applicants may be at a disadvantage in gaining admittance.<sup>24</sup> This concern was recently addressed in a retrospective study on a cohort of 4407 Albertan applicants to medical school over a period of 10 years.<sup>24</sup> The investigators found that the number of rural and urban applicants admitted to medical school was proportional to the number of rural and urban students in the applicant pool.<sup>24</sup> That said, the total proportion of the applicant pool from rural areas was below the expected proportion based on the rural population of Alberta. This suggests that the lack of rural representation in medical schools may be related to other issues that deter or prevent students from a rural background from progressing to the stage of applying to medical school.<sup>24</sup> A similar study focusing on medical school applicants in Ontario also reported fewer rural applicants in the total applicant pool, although rural applicants were equally likely to be admitted and had similar academic qualifications as their urban counterparts.<sup>17,25</sup>

Although beyond the scope of this paper, the issue of a smaller pool of rural applicants relative to the needs of the rural population suggests the potential for research into factors related to educational opportunity and career counselling that may be at play in the rural setting. A simple, early intervention such as educating rural high school students about a career in medicine may be a helpful strategy.<sup>3,25</sup> Furthermore, the notion that barriers play a substantial role in limiting educational opportunities in students from rural backgrounds is likely not limited to their premedical education.<sup>26</sup> Medical students from rural backgrounds tend to report higher amounts of debt, have greater concern about financing their medical education and have higher levels of financial stress compared with their urban counterparts.<sup>26</sup> This is particularly relevant in the face of rising tuition for medical education in Canada.<sup>27</sup> A recent study out of



the University of Calgary looked at this mechanism and found students from rural backgrounds to have higher levels of debt at entry to medical school, higher projected levels of debt at the end of medical school and lower mean parental incomes compared with their metropolitan counterparts.<sup>28</sup> The authors of this study postulated that with rising tuition costs, the diversity of medical school classes may be affected, and this may increasingly become a barrier for certain groups of students.<sup>28</sup>

### Increasing the numbers

Although there may be socio-economic and educational barriers that deter rural students from pursuing medicine, the role of selective admission for rural applicants remains an acute and viable option for medical schools to increase the number of students from a rural background. Selective admission can be accomplished through screening for rural applicants by simply collecting permanent addresses and addresses during high school and college for each applicant.<sup>29</sup> Screening for other factors that appear positively correlated with an interest in rural medicine, including family members currently living in a rural community, an expressed interest in family medicine and having volunteered in a developing nation, may further increase the yield of rural students.<sup>30,31</sup> Furthermore, in light of rising tuition and higher debt-loads for all medical students — particularly rural medical students — financial incentives and return-of-service agreements have become particularly attractive and effective.<sup>32</sup> The benefits, however, did not often persist over the long term in some of the studies examined, which indicates that other interventions may still be necessary.<sup>32</sup>

Selective admission strategies have been successfully implemented at several institutions — some with remarkable success — resulting in an increased proportion of students choosing rural-based family medicine.<sup>3,31,33–36</sup> A striking example is the Physician Shortage Area Program (PSAP) at Jefferson Medical College in Pennsylvania, reported by Rabinowitz and colleagues.<sup>33</sup> The PSAP recruits students who are admitted based on having grown up in a rural setting and who have the intention of practising rural family medicine.<sup>33</sup> Students in this program have advisors in family medicine, perform their family medicine rotation in a rural setting and are expected to complete a residency in family practice.<sup>33</sup> Although the above features are not formally enforced, graduates of the PSAP make up 21% of the rural physician workforce, despite making up

only 1% of the medical school classes.<sup>33</sup> Established in 1974, this program has produced durable results, as measured 22 years later by Rabinowitz and colleagues.<sup>33</sup> However, medical school administrators must keep in mind the possibility that such a selection policy may lower the standards of admission to medical schools.<sup>37</sup> The evidence, though generally consisting of the experience of individual institutions changing a single aspect of their admission policy (e.g., screening applicants for evidence of a rural background or implementing financial incentives), suggests that many approaches may be entertained by administrators to increase the likelihood — before even beginning medical training — of students choosing a career in rural medicine.

## MEDICAL SCHOOL CURRICULUM

### Increasing rural exposure

The role of the medical school curriculum in influencing students to choose rural medicine lies in creating opportunities for exposure to rural community practice, fostering a positive attitude toward family and rural medicine, and ensuring that these experiences are positive learning experiences.<sup>3,37</sup> These ideas have been shown in the literature to not only reinforce the interest of students who had a prior interest in rural medicine or who have a rural background, but also to potentially influence urban students or students who had not previously considered a career in rural medicine to pursue this field.<sup>1–3,37–39</sup>

Rural-based educational programs instituted at the University of Alberta report doubling of the number of students partaking in rural rotations and a 4-fold increase in the duration of rural experiences.<sup>39</sup> Mandatory rural rotations at Memorial University similarly have been met with favourable results in rural medicine training and recruiting.<sup>40–42</sup> Aside from mandatory exposure, offering electives in rural medicine that include travel stipends and arranged accommodations may further increase the likelihood of students exploring rural practice.<sup>43,44</sup> Facilitating and providing incentives may be helpful to encourage students to engage in longer rotations (up to 3–6 weeks) so the student can develop an appreciation for the rural lifestyle and the community.<sup>45</sup> A longer duration of rotation also allows the student and preceptor to become more familiar with one another and for the preceptor to appropriately delegate clinical experiences for the student's level of training.<sup>45</sup> Student evaluations of rural primary care clerkship rotations suggest that these experiences positively influence

their perceptions of rural primary care and of the workload demands of rural physicians.<sup>46</sup>

### **Rural rotations — A comparable education?**

Recent data from McMaster University suggest that students who participate in rural training perform at least equally to their urban counterparts in terms of academic and clinical performance.<sup>47</sup> Clerkship students in this study either participated in the McMaster Community and Rural Education (Mac-CARE) program or the regular urban clerkship program based in Hamilton, Ont. Students in the Mac-CARE program were found to achieve comparable scores on academic evaluations compared with their urban-trained counterparts and performed better in postclerkship Objective Structured Clinical Examinations.<sup>47</sup> Similar findings of comparable performances have been replicated at other North American centres.<sup>48,49</sup> This may be explained in part by a higher staff–student ratio in the rural community setting.<sup>21</sup> Integrating a rural experience into medical training and encouraging positive academic and clinical aspects of rural training may be helpful to students considering such a rotation in the future and can result in increasing numbers of rurally oriented graduates.

### **SPECIALTY TRAINING IN RURAL MEDICINE**

The practice of rural medicine involves a unique skill set, and it is being increasingly recognized that specific training is required.<sup>10,50</sup> Fewer consulting and technological resources translate into greater demands on the rural physician's time, a wider scope of practice and the need to be proficient in a wider range of procedures.<sup>50</sup> Indeed, although interest and exposure to rural medicine are definite prerequisites and factors involved in predicting which students will choose to practise in rural settings, appropriate and sufficient opportunity for postgraduate training specific to rural practice is essential.<sup>50</sup> The impact of the medical school in training physicians dedicated to rural practice becomes especially important in the postgraduate years, particularly with respect to influences on residents in family medicine, who are most likely to subsequently establish a rural practice. Additionally, it should be noted that preliminary data on efforts to involve specialty residency programs in rural practice rotations at the University of Western Ontario have been positive, recruiting 19 graduating specialist residents over 5 years.<sup>51</sup>

Location of postgraduate training plays a substantial role in determining where residents choose to practise after graduation. Within the last 5 years alone, Canadian medical education has seen the opening of the Northern Ontario School of Medicine, with its mandate exclusively dedicated to training rural physicians, as demonstrated by its admission policy, geographic location and curriculum focus.<sup>52,53</sup> Other schools have attempted to follow suit with the creation of satellite schools or campuses in smaller communities such as the University of British Columbia's Northern Medical Program in Prince George,<sup>54</sup> the University of Sherbrooke's campus in Moncton, NB, and the newly launched Dalhousie Medicine New Brunswick program in Saint John. The New Brunswick programs are innovative not only for their use of satellite campuses, but also for the fact that they require cooperation among 3 provinces. A 10-year Canadian study of graduates from the University of Ottawa's Northern Ontario Family Medicine residency program in Sudbury and McMaster University's Family Medicine Program in Thunder Bay found that two-thirds of person-years of medical practice by graduates of both programs occurred in either northern Ontario or a rural area outside of northern Ontario.<sup>55</sup> Recruiting efforts at Memorial University of Newfoundland, which provided incentives to medical graduates who chose to stay in the province, reported that more than 50% of students of rural origin who graduated from the university remained in the province.<sup>41</sup> In light of these findings, Canadian residency programs have responded accordingly. Estimates in 2002 of the availability of residency positions in rural family medicine in Canada found that the number of spots across Canada was proportional to the rural population of Canada, with most schools offering specific programs in rural medicine.<sup>56</sup> However, it was unclear in this study how many of these spots were subsequently filled.<sup>56</sup>

Although the training program and the origin of the trainee are key predictors of rural practice, family and personal factors also play a large role in the decision of graduates.<sup>57</sup> Resources and job opportunities for spouses and children are cited as particularly relevant and offer still more areas of consideration when creating strategies for recruiting residents and graduates of residency programs in family medicine.<sup>10,57</sup> Perhaps not surprisingly, survey results of rural physicians and residents identified other factors that may have an impact on the attractiveness of rural practice, such as remuneration for anesthesia and obstetric coverage, time off for continuing education, support for overhead funding, enhanced funding to

support allied health professionals and the placement of a stronger referral and support network.<sup>10</sup>

Most Canadian medical schools offer some degree of postgraduate exposure to rural medicine, recognizing the importance of place on physician retention.<sup>2</sup> Whether these spots are being accepted by Canadian graduates is not clear in the literature and will certainly need to be addressed in the future to delineate where interventions might be best directed. Furthermore, although outside the realm of medical school interventions, personal and practice factors need to be accounted for in designing a successful recruitment strategy.

Box 1 shows a summary of the evidence for interventions that are feasible and that may be used by Canadian medical schools to improve the number of graduates who will become rurally oriented physicians.

## LIMITATIONS AND FUTURE DIRECTION

Although there is abundant literature focusing on the recruitment and retention of physicians for rural practice, a large portion of the evidence relies heavily on surveys and questionnaires. This approach lends itself to variable response rates and is subject to nonresponse bias, voluntary bias and recall bias. Prospective (and also retrospective) studies monitoring an intervention (related to admission, clerkship or postgraduate training) that are organized by the medical

### Box 1. Summary of recommended interventions by medical schools to increase numbers of rurally oriented physicians

#### Selection and admission

- Screen for interest and experience in rural medicine, rural origins, family currently living in rural community<sup>29</sup>
- Return-of-service agreements, bursaries, scholarships and other financial incentives<sup>32</sup>
- Education and career counselling coordinated by medical students to increase awareness of a career in medicine among rural high school students<sup>25</sup>

#### Medical curriculum

- Integrate rotations in rural family medicine within clerkship years<sup>39</sup>
- Ensure adequate length of rotations (> 3 weeks)<sup>45</sup>
- Facilitation of rotations with regard to accommodation and travel (with stipends)<sup>44</sup>
- Promote personalized, enhanced clinical training in the rural setting<sup>40</sup>

#### Postgraduate training

- Establish residency training programs in rural areas<sup>50</sup>
- Improve practice facilities, allied health care teams and referral networks<sup>10</sup>
- Consider personalized approach regarding family and practice preferences<sup>10,57</sup>

school administration itself offer the strongest evidence because of its access to pertinent information such as student files and closer contact and communication with the student body being studied. However, only a minority of medical schools in Canada report on an intervention they have undertaken and the subsequent result. The publication of interventions and outcomes may be related to the importance of rural training as part of their mandate. Regardless, that there exists up to a 10-fold difference among Canadian medical schools in the production of graduates practising in rural areas<sup>4</sup> suggests the need for further research on a pan-Canadian scale.

## CONCLUSION

In addition to summarizing the evidence for interventions, we have also described a mechanism taking place well before the admissions process that may be used as a future intervention: targeting rural students earlier in their academic careers (i.e., high school) such that a career in medicine is presented as an option. Further program development and research is needed to determine whether this will have an effect on rural applicant pools and thus the number of medical students of rural origin. We also highlight the need for pan-Canadian data on types of interventions currently employed and the success had at various institutions. There appears to be a reporting bias among schools that prioritize rural training, because much of the literature on the topic of rural medicine recruitment in Canada is derived from only a handful of Canadian medical schools. In the coming years, results from program research initiatives as well as census data from the graduates of rural-based programs should provide a reliable estimate of the collective interventions of Canadian medical schools.

**Competing interests:** None declared.

## REFERENCES

1. Curran VR, Fleet L, Pong RW, et al. A survey of rural medical education strategies throughout the medical education continuum in Canada. *Can Sociol Demogr Med* 2007;47:445-68.
2. Rourke J. Increasing the number of rural physicians. *CMAJ* 2008; 178:322-5.
3. Curran V, Rourke J. The role of medical education in the recruitment and retention of rural physicians. *Med Teach* 2004;26:265-72.
4. Hutten-Czapski P. Who makes Canada's rural doctors? *Can J Rural Med* 2002;7:95-100.
5. Pong RW, Pitblado JR. *Geographic distribution of physicians in Canada: beyond how many and where*. Ottawa (ON): Canadian Institute for Health Information; 2005.
6. Pitblado JR, Pong RW. *Geographic distribution of physicians in Canada*

- [report prepared for Health Canada]. Sudbury (ON): Centre for Rural and Northern Health Research, Laurentian University; 1999.
7. Incitti F, Rourke J, Rourke LL, et al. Rural women family physicians. Are they unique? *Can Fam Physician* 2003;49:320-7.
  8. Rankin SL, Hughes-Anderson W, House AK, et al. Costs of accessing surgical specialists by rural and remote residents. *ANZ J Surg* 2001; 71:544-7.
  9. Nagarajan KV. Rural and remote community health care in Canada: beyond the Kirby Panel Report, the Romanow Report and the federal budget of 2003. *Can J Rural Med* 2004;9:245-51.
  10. Rourke JT, Incitti F, Rourke LL, et al. Keeping family physicians in rural practice. Solutions favoured by rural physicians and family medicine residents. *Can Fam Physician* 2003;49:1142-9.
  11. Pitblado JR. *Summary report. Distribution and internal migration of Canada's health care workforce*. Sudbury (ON): Canadian Institute for Health Information; 2007.
  12. DesMeules M, Pong R, editors. *How healthy are rural Canadians? An assessment of their health status and health determinants*. Ottawa (ON): Canadian Institute for Health Information; 2006.
  13. Fish DG, Farmer C, Nelson-Jones R. Some social characteristics of students in Canadian medical schools, 1965-66. *CMAJ* 1968;99:950-4.
  14. Dhalla IA, Kwong JC, Streiner DL, et al. Characteristics of first-year students in Canadian medical schools. *CMAJ* 2002;166:1029-35.
  15. Statistics Canada. *Population urban and rural, by province and territory*. Available: [www40.statcan.ca/01/cst01/demo62a-eng.htm](http://www40.statcan.ca/01/cst01/demo62a-eng.htm) (accessed 2008 March).
  16. Rourke J, Dewar D, Harris K, et al.; Task Force of the Society of Rural Physicians of Canada. Strategies to increase the enrollment of students of rural origin in medical school: recommendations from the Society of Rural Physicians of Canada. *CMAJ* 2005;172:62-5.
  17. Hutten-Czapski P, Pitblado R, Rourke J. Who gets into medical school? Comparison of students from rural and urban backgrounds. *Can Fam Physician* 2005;51:1240-1.
  18. Chan BT, Degani N, Crichton T, et al. Factors influencing family physicians to enter rural practice: Does rural or urban background make a difference? *Can Fam Physician* 2005;51:1246-7.
  19. Woloschuk W, Tarrant M. Do students from rural backgrounds engage in rural family practice more than their urban-raised peers? *Med Educ* 2004;38:259-61.
  20. Laven G, Wilkinson D. Rural doctors and rural backgrounds: How strong is the evidence? A systematic review. *Aust J Rural Health* 2003;11:277-84.
  21. Hsueh W, Wilkinson T, Bills J. What evidence-based undergraduate interventions promote rural health? *N Z Med J* 2004;117:U1117.
  22. Wallick M, Cambre K, McCluggage S. Does the admissions committee select medical students in its own image? *J La State Med Soc* 2000;152:393-7.
  23. Hensel JM SM, Redelmeier DA. Rural medical students at urban medical schools: Too few and far between? *Open Medicine* 2007;1(1).
  24. Wright B, Woloschuk W. Have rural background students been disadvantaged by the medical school admission process? *Med Educ* 2008;42:476-9.
  25. Bly J. What is medicine? Recruiting high-school students into family medicine. *Can Fam Physician* 2006;52:329-34.
  26. Kwong JC, Dhalla IA, Streiner DL, et al. A comparison of Canadian medical students from rural and non-rural backgrounds. *Can J Rural Med* 2005;10:36-42.
  27. Kwong JC, Dhalla IA, Streiner DL, et al. Effects of rising tuition fees on medical school class composition and financial outlook. *CMAJ* 2002;166:1023-8.
  28. Woloschuk W, Lemay JF, Wright B. What is the financial state of medical students from rural backgrounds during tuition fee deregulation? *Can J Rural Med* 2010;15:156-60.
  29. Owen JA, Conaway MR, Bailey BA, et al. Predicting rural practice using different definitions to classify medical school applicants as having a rural upbringing. *J Rural Health* 2007;23:133-40.
  30. Cullison S, Reid C, Colwill JM. Medical school admissions, specialty selection, and distribution of physicians. *JAMA* 1976;235:502-5.
  31. Matsumoto M, Inoue K, Kajii E. Characteristics of medical students with rural origin: implications for selective admission policies. *Health Policy* 2008;87:194-202.
  32. Sempowski IP. Effectiveness of financial incentives in exchange for rural and underserved area return-of-service commitments: systematic review of the literature. *Can J Rural Med* 2004;9:82-8.
  33. Rabinowitz HK, Diamond JJ, Markham FW, et al. A program to increase the number of family physicians in rural and underserved areas: impact after 22 years. *JAMA* 1999;281:255-60.
  34. Rabinowitz HK. The effects of a selective medical school admissions policy on increasing the number of family physicians in rural and physician shortage areas. *Res Med Educ* 1987;26:157-62.
  35. Rabinowitz HK. Relationship between US medical school admission policy and graduates entering family practice. *Fam Pract* 1988;5:142-4.
  36. Rabinowitz HK. Evaluation of a selective medical school admissions policy to increase the number of family physicians in rural and underserved areas. *N Engl J Med* 1988;319:480-6.
  37. Campos-Outcalt D, Senf J, Kutob R. A comparison of primary care graduates from schools with increasing production of family physicians to those from schools with decreasing production. *Fam Med* 2004;36:260-4.
  38. Woloschuk W, Tarrant M. Does a rural educational experience influence students' likelihood of rural practice? Impact of student background and gender. *Med Educ* 2002;36:241-7.
  39. Moores DG, Woodhead-Lyons SC, Wilson DR. Preparing for rural practice. Enhanced experience for medical students and residents. *Can Fam Physician* 1998;44:1045-50.
  40. Lewis J. Clerkship rotation in rural family practice. *Can Fam Physician* 1995;41:1041-4, 1047.
  41. Mathews M, Rourke JT, Park A. National and provincial retention of medical graduates of Memorial University of Newfoundland. *CMAJ* 2006;175:357-60.
  42. Mathews M, Rourke JT, Park A. The contribution of Memorial University's medical school to rural physician supply. *Can J Rural Med* 2008;13:15-21.
  43. Verby JE. The Minnesota Rural Physician Associate Program for medical students. *J Med Educ* 1988;63:427-37.
  44. MacRae M, van Diepen K, Paterson M. Use of clinical placements as a means of recruiting health care students to underserved areas in Southeastern Ontario: part 1 — student perspectives. *Aust J Rural Health* 2007;15:21-8.
  45. Denz-Penhey H, Shannon S, Murdoch CJ, et al. Do benefits accrue from longer rotations for students in rural clinical schools? *Rural Remote Health* 2005;5:414.
  46. Blue AV, Chessman AW, Geesey ME, et al. Medical students' perceptions of rural practice following a rural clerkship. *Fam Med* 2004;36:336-40.
  47. Bianchi F, Stobbe K, Eva K. Comparing academic performance of medical students in distributed learning sites: the McMaster experience. *Med Teach* 2008;30:67-71.
  48. Power DV, Harris IB, Swentko W, et al. Comparing rural-trained medical students with their peers: performance in a primary care OSCE. *Teach Learn Med* 2006;18:196-202.
  49. Margolis SA, Davies LM, Ypinazar V. Isolated rural general practice as the focus for teaching core clinical rotations to pre-registration medical students. *BMC Med Educ* 2005;5:22.
  50. Rourke JT. Postgraduate training for rural family practice. Goals and opportunities. *Can Fam Physician* 1996;42:1133-8.
  51. Rourke JT. A rural and regional community multi-specialty residency training network developed by the University of Western Ontario. *Teach Learn Med* 2005;17:376-81.
  52. Tamburri R. Northern Ontario School of Medicine opens. *CMAJ* 2005;173:473.
  53. Strasser S, Strasser RP. The Northern Ontario School of Medicine: a long-term strategy to enhance the rural medical workforce. *Cah Sociol Demogr Med* 2007;47:469-89.
  54. Snadden D, Bates J. Expanding undergraduate medical education in British Columbia: a distributed campus model. *CMAJ* 2005;173:589-90.
  55. Heng D, Pong RW, Chan BT, et al. Graduates of northern Ontario family medicine residency programs practise where they train. *Can J Rural Med* 2007;12:146-52.
  56. Krupa LK, Chan BT. Canadian rural family medicine training programs: growth and variation in recruitment. *Can Fam Physician* 2005; 51:852-3.
  57. Pong RW, Chan BT, Crichton T, et al. Big cities and bright lights: rural- and northern-trained physicians in urban practice. *Can J Rural Med* 2007;12:153-60.



## The occasional injection for trochanteric bursitis

*Len Kelly, MD*  
 Division of Clinical Sciences,  
 Northern Ontario School of  
 Medicine, Sioux Lookout, Ont.

*Lauren Minty*  
 Northern Ontario School of  
 Medicine, Sioux Lookout, Ont.

Correspondence to:  
 Dr. Len Kelly, lkelly@  
 univmail.cis.mcmaster.ca

*This article has been peer  
 reviewed.*

**O**ften a patient will arrive in the office stating that he or she has a sore hip. Because osteoarthritis of the hip is a common disorder, we may immediately order a radiograph of the hip. Before doing so, we should rule out trochanteric bursitis, which is easily diagnosed by a simple range of motion test and palpation of the hip and is treated in the office without the need for radiography.

### HISTORY

Screening questions will usually sort out the location and source of the pain: “Is it sore when you are lying in bed?”; “Is it sore when you lie on that side?”

Trochanteric bursitis occurs about 4 inches lateral to the hip joint and hurts when the patient lies on it. Soreness occurs with climbing ladders or hills, running or using elliptical trainers. In distinction to osteoarthritis of the hip, trochanteric bursitis does not cause much soreness with walking. Also, osteoarthritis of the hip is not generally

painful with lying in bed. Confirm with the patient that no pathological flags are present (e.g., history of cancer, night pain, constant pain).

Sometimes there is an obvious precipitant (e.g., the patient went camping with the kids and slept on a rock, was doing a lot of uphill hiking or training, or sleeps on a poor mattress). Often the pain is longstanding and increasingly bothersome. It is more common in women (4:1) and affects between 15% and 20% of the population.<sup>1</sup>

### PHYSICAL EXAMINATION

The simplicity of the history is followed by an equally circumscribed examination. It is done with the patient sitting on the examination table. Swing the affected leg side to side (external and internal hip rotation) (Figs. 1 and 2). A painful limitation of internal rotation is an early sign of osteoarthritis of the hip.

Compare the range of movement with that of the other leg. If reasonable rotation exists, there is no osteoarthritis



**Fig. 1.** External rotation of the hip is generally normal and painless with bursitis.



**Fig. 2.** Internal rotation is usually limited and painful in osteoarthritis, but not in bursitis.

of the hip and no need for radiography.

Steady the patient with the other hand and press firmly with your thumb over the area of the trochanteric bursa. If the pain is recreated, you have the diagnosis and can offer the patient a simple, relatively painless injection (Fig. 3).

## ANATOMY

Unlike the more commonly injected bursae of the shoulder and the knee, the trochanteric bursa is often not a discrete structure. This causes some authors to refer to pain in this area as “greater trochanteric pain syndrome,” a reference to the 5 or 6 bursae in that region.<sup>2</sup> Whereas some of these bursae are not universally present in autopsy studies, 2 commonly are (deep and superficial subgluteus maximus bursae) and are thought to be the location of the clinical pain<sup>3,4</sup> (Fig. 4).



Fig. 3. Firm palpation over the greater trochanter reproduces the pain of bursitis. This is your confirmatory test.

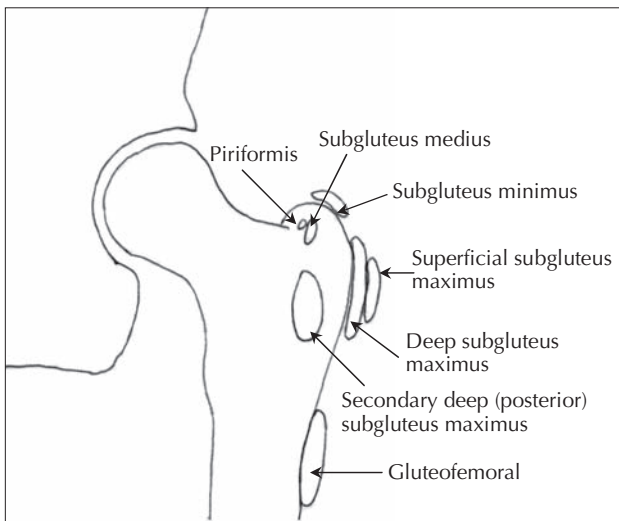


Fig. 4. The multiple bursae involved in trochanteric bursitis.

The trochanteric bursa decreases the friction around the insertion of the iliotibial band and hip abductor muscles into the greater trochanter. Repeated hip flexion (e.g., from climbing hills) and direct pressure (e.g., from lying on a poor mattress) lead to inflammation and pain in this area. Because the trochanteric bursa lacks a discrete anatomic structure, we use a large volume of steroid–lidocaine mixture spread over a larger area.

## TREATMENT

1. Have the patient lie on his or her good side with a patch of skin exposed over the hip region (the patient need not completely undress).
2. Palpate with the palm of your hand to find the top of the “bony dome,” which is the greater trochanter of the femur (Fig. 5).
3. Localize the painful area with a finger press. When the affected area is found, the patient will easily let you know (Fig. 6).
4. You are looking for a tender area of soft tissue.



Fig. 5. With the patient lying on his or her good side, palpate the dome of the hip to find the highest point.



Fig. 6. Locate the highest point with a finger press. Move your finger around until you find the most tender spot.

- Mark the most tender spot with the needle protector to give you a bull's eye for your injection.
- Alcohol swab the skin. Use a 25-gauge, 1.5-inch needle to inject 5–10 mL of 1% lidocaine without epinephrine and 40 mg of methylprednisolone acetate or equivalent. The objective is to pepper an area about the size of a golf ball or larger.
  - Dive deeply with the needle. Inject 1–2 mL, bring the needle back to near the skin and rediver into the adjacent tissue (Fig. 7). Do this 2–3 times and you are done. If the needle comes out when you are repositioning it, no problem. If you hit bone, simply inject as you slowly back the needle out.

A review of trochanteric bursitis studies using cortisone injections documents 60%–100% efficacy.<sup>2</sup>



**Fig. 7.** Bury the needle at the most tender spot and deposit part of the mixture at or near the bone. Bring the needle back to the skin and reinject at a slightly different angle, trying to eventually infiltrate an area the size of a tennis ball.

## AFTER CARE

Bandage. There is little else to do. Another injection can be done in a month if some of the pain remains. One injection may suffice, but sometimes 2 or 3 will be required. If the patient needs to replace his or her mattress, now is a good time. If the patient can avoid ladder and hill climbing for awhile, all the better.

## CONCLUSION

This is a simple manoeuvre that will usually resolve the pain, which may have been longstanding if the patient believed he or she was simply getting old and had a worn-out hip. The injection is almost painless, and patients derive excellent symptom relief from this simple office procedure. There are a group of patients who will return after 1–2 years or sooner, and they are candidates for repeat injection. Trochanteric bursitis is common and is easily diagnosed and treated.

## REFERENCES

- Segal NA, Felson D, Torner J, et al. Greater trochanteric pain syndrome: epidemiology and associated factors. *Arch Phys Med Rehabil* 2007;88:988-92.
- Williams BS, Cohen SP. Greater trochanteric pain syndrome: a review of the anatomy, diagnosis and treatment. *Anesth Analg* 2009; 108:1662-70.
- Cyriax J, Cyriax P. *Illustrated manual of orthopedic medicine*. London: Butterworths; 1985.
- Dunn T, Heller C, McCarthy S, et al. Anatomical study of the "trochanteric bursa." *Clin Anat* 2003;16:233-40.

## DOCTORS SPEAK OUT

Podium — Letters to the Editor — Editorials

We invite physicians to speak out on issues that concern them.  
Send your submissions to Suzanne Kingsmill, Managing Editor,  
*CJRM*, 45 Overlea Blvd., P.O. Box 22015, Toronto ON M4H 1N9; [cjrm@cjrm.net](mailto:cjrm@cjrm.net)

## LES MÉDECINS S'EXPRIMENT

La parole aux médecins — Lettres à la rédaction — Éditoriaux

Nous invitons les médecins à commenter les questions qui les intéressent.  
Faites parvenir vos textes à Suzanne Kingsmill, rédactrice administrative,  
*JCMR*, 45, boul. Overlea, C. P. 22015, Toronto (Ontario) M4H 1N9; [cjrm@cjrm.net](mailto:cjrm@cjrm.net)

## The occasional teacher. Part 2: the good teacher

*William Edward  
Osmun, MD, MClSc,  
CCFP*

*Julie Copeland, MD,  
CCFP*

*Department of Family  
Medicine, University of  
Western Ontario,  
London, Ont.*

*Correspondence to:  
Dr. William Edward  
Osmun, 22262 Mill Rd.,  
Mount Brydges ON  
N0L 1W0; ted@smbc.net*

*This article has been peer  
reviewed.*

**W**hat makes a good teacher? We all remember teachers we respected. They were good clinicians, enthusiastic and respectful. Research indicates that good teachers engage students by asking questions and having expectations.<sup>1</sup> These expectations will change with the learner's level of education. As doctors obtain more experience, they progress through stages of clinical performance: the novice, the competent practitioner and the expert. The novice will rigidly stick to "the script" with a similar approach to every patient, regardless of the patient's age, sex or situation. For example, chest pain in a 17-year-old boy will be seen as a cardiac event. The competent practitioner (e.g., a second-year resident) will be more realistic but is still heavily invested in guidelines and scripts. The expert will rely more on clinical experience, approaching situations based on past events, and will take into account the situation and patient characteristics.<sup>2</sup> Teachers need to be aware of this transition to understand why a student takes 45 minutes to sort out simple muscle pain in a 22-year-old shot putter.

As we progress from student to graduate, we move beyond information gatherers to become information processors and decision-makers.<sup>3</sup> Be aware that students' approaches to medicine will reflect their previous clinical rotations. If they have just completed internal medicine, expect pages of history; if they have finished general surgery, their approach will be closer to that of a family doctor — short and to the point.

Goertzen and colleagues<sup>4</sup> interviewed

students and rural preceptors in Manitoba to define effective teaching. They found that an effective teacher blends supervision and independence, develops a supportive interpersonal relationship with the student, emphasizes problem-solving and medical knowledge, can balance teaching and clinical care, is competent and organized, and provides the student with appropriate feedback and evaluations.

Good teachers always attempt to hold students in positive regard. Fortunately, this is usually not difficult. If you are having difficulty, step back and ascertain where the problem is. After all, might it be you?<sup>5</sup> If there is a personality conflict, acknowledge it, at least to yourself, and take it into account when assessing the student. This does not mean you have to tolerate persistent attitudinal issues or behaviours. If there is a serious concern, call the university and discuss the situation with the undergraduate or postgraduate director. A plan of remediation may need to be instituted.

Doctors hold themselves and others to high standards. We can become irritated when these standards are not met. If students don't meet our expectations, it is important that we don't belittle them. Ongoing feedback is important but must be given respectfully.

Ask questions. Repeatedly.<sup>1</sup> When you reach the point where students exhaust their answers, engage them in a discussion that will lead to the answer, or direct the student to resources that provide the solution. Physicians learn from patient encounters,<sup>2</sup> so do your best to teach around these encounters.

The teacher should be clear in his or



her expectations. Educate the student if your expectations change (e.g., the need for increased efficiency in a busy emergency department). Asking students to pick up speed and putting them under a little “creative stress” will force them to focus their histories and examinations. Daily feedback is important but needs to be labelled as such; otherwise, the student may be unaware of your intent.<sup>1</sup> At the end of shift or a day in the clinic, thank the learner if he or she has been helpful. Students often feel they are an impediment to the smooth functioning of the team, and some of them are, but most of them are a benefit. Tell them if they are doing well.

Having a student should be fun. Students will benefit from your knowledge and experience, and you will benefit from their curiosity and enthusiasm. Your community may benefit if students return after graduation.

## REFERENCES

1. Irby DM. What clinical teachers in medicine need to know. *Acad Med* 1994;69:333-42.
2. Del Mar C, Joust J, Glasziou P. Principles of clinical problem solving. In: *Clinical thinking*. Oxford: BMJ Books; 2006. p. 1-11.
3. Paukert JL, Richards BF. How medical students and residents describe the roles and characteristics of their influential clinical teachers. *Acad Med* 2000;75:843-5.
4. Goertzen J, Stewart M, Weston W. Effective teaching behaviours of rural family medicine preceptors. *CMAJ* 1995;153:161-8.
5. Steinert Y. The “problem” junior: Whose problem is it? *BMJ* 2008; 336:150-3.

## FURTHER RESOURCE

Queen’s University: online resources for Ontario rural preceptors ([meds.queensu.ca/ruralpreceptors/](http://meds.queensu.ca/ruralpreceptors/))

## Country Cardiograms

Have you encountered a challenging ECG lately?

In most issues of *CJRM* an ECG is presented and questions are asked.

On another page, the case is discussed and the answer is provided.

Please submit cases, including a copy of the ECG, to Suzanne Kingsmill, Managing Editor, *CJRM*, 45 Overlea Blvd., P.O. Box 22015, Toronto ON M4H 1N9; [cjrm@cjrm.net](mailto:cjrm@cjrm.net)

## Cardiogrammes ruraux

Avez-vous eu à décrypter un ECG particulièrement difficile récemment?

Dans la plupart des numéros du *JCMR*, nous présentons un ECG assorti de questions. Les réponses et une discussion du cas sont affichées sur une autre page.

Veuillez présenter les cas, accompagnés d’une copie de l’ECG, à Suzanne Kingsmill, rédactrice administrative, *JCMR*, 45, boul. Overlea, C. P. 22015, Toronto (Ontario) M4H 1N9 ; [cjrm@cjrm.net](mailto:cjrm@cjrm.net)

# Fetal alcohol spectrum disorder in adults: diagnosis and assessment by a multidisciplinary team in a rural area

Audrey McFarlane,  
MBA (CED)  
Lakeland Centre for Fetal  
Alcohol Spectrum Disorder,  
Cold Lake, Alta.

Correspondence to:  
Ms. Audrey McFarlane,  
Box 479, Cold Lake AB  
T9M 1P1; audrey.  
mcfarlane@lcfasd.com

*This article has been peer  
reviewed.*

Access to diagnostic and assessment services for fetal alcohol spectrum disorder in adults is relatively rare in the world. Since 2002, the Lakeland Centre for Fetal Alcohol Spectrum Disorder (LCFASD) in northeastern Alberta has been providing community-based, mobile diagnostic and assessment services for adults prenatally exposed to alcohol. This article describes the community-based model developed by the LCFASD, the clinical findings of the diagnostic team and the successes and challenges experienced by the team.

L'accès à des services de diagnostic et d'évaluation des troubles du spectre de l'alcoolisation foetale chez les adultes est relativement rare dans le monde. Depuis 2002, le Lakeland Centre for Fetal Alcohol Spectrum Disorder (LCFASD), au nord-est de l'Alberta, fournit des services communautaires mobiles de diagnostic et de traitement des adultes qui ont été exposés à l'alcool avant la naissance. Cet article décrit le modèle communautaire créé par le LCFASD et les constatations cliniques de l'équipe de diagnostic, ses succès et les défis auxquels elle est confrontée.

## INTRODUCTION

The Lakeland Centre for Fetal Alcohol Spectrum Disorder (LCFASD) in Cold Lake, Alta., opened in 2001 to support a local group of hard-working and dedicated professionals who were contributing to a community-based diagnostic team to serve children. The team had been trained in Seattle at the Fetal Alcohol Syndrome Diagnostic and Prevention Network at the University of Washington.<sup>1</sup> The training prepared the team of local professionals to use the 4-digit code developed at the University of Washington to provide clear diagnoses for those prenatally exposed to alcohol. The local team worked together to adapt the diagnostic model to meet a rural need. They were able to develop and deliver this service with the support of the Lakeland Fetal Alcohol Syndrome Committee, which began in 1994.

The LCFASD provides services to

the Lakeland region, which is an area in northeastern Alberta that includes 1 small city, 25 small towns or villages, 7 First Nations communities, 4 Métis settlements (land-based Métis peoples, unique to Alberta) and 1 military base, with a total population of about 80 000. From Edmonton, the closest community is a 1-hour drive and the farthest is a 3.5-hour drive. All communities are accessible by road. The LCFASD is based in Cold Lake, Alta., but provides its services to the region's communities through mobile diagnostic and assessment teams and follow-up support personnel.

The LCFASD diagnostic team began with a community-based diagnostic and assessment team for children in 2000<sup>2</sup> and had always planned to serve adults. However, it became apparent that to serve adults, a different grouping of professionals was required for the clinical team. Adults who have

been prenatally exposed to alcohol are in desperate need of an accurate diagnosis and support; there are few diagnostic clinics that serve adults, and many adults with fetal alcohol spectrum disorder (FASD) have received treatment for symptoms and not the diagnosis, which has led to substantial maladaptations to life. In 2002, the FASD diagnostic team for adults was developed, team members were trained and the diagnostic service was implemented. To our knowledge, this was the first diagnostic service for adult FASD in Canada. Published literature for diagnosis in adults is minimal, as is the depth of literature on delivery of services or development of community-based programs in support of adults with FASD living in rural areas. The Lakeland Fetal Alcohol Syndrome Committee became the Lakeland FASD Society in 2003. The society operates the LCFASD and also oversees a variety of training and prevention programs, including mentorship programs for women at high risk of alcohol use during pregnancy, transition planning, employment coordination and a summer camp for children with FASD.

The diagnosis of what is now known as FASD was first recognized by Lemoine<sup>5</sup> and subsequently elaborated on by Jones and Smith.<sup>4</sup> The diagnosis was a “gestalt” diagnosis based on the presence of physical abnormalities involving facial formation, growth patterns and central nervous system or neurobehavioural disorders. In 1996, the Institute of Medicine<sup>5</sup> further delineated the spectrum of damage caused by alcohol to the growing fetus in its diagnostic criteria. The effects were further refined by Astley and Clarren,<sup>1</sup> leading to the introduction of the 4-digit code system of diagnostic management. The 4-digit code system is a formula used to assess the 4 key components of diagnosis: growth deficiencies, facial features, brain function and alcohol consumption. The diagnostic criteria highlighted the need for a multidisciplinary team to be involved in the diagnostic process. These professionals, each with their individual expertise, could provide a comprehensive assessment unique to the patient, providing the team with the necessary information to support that patient across the full spectrum of the disabilities identified. In 2005, Chudley and colleagues<sup>6</sup> reviewed the Canadian approach to the 4-digit code to develop the Canadian guidelines for diagnosing and assessing FASD.

## DESCRIPTION

The delivery model for diagnostic services used by the LCFASD is based on the model of the Universi-

ty of Washington Diagnostic Clinic<sup>1</sup> and uses the Canadian diagnostic guidelines for FASD.<sup>6</sup> The focus of the LCFASD model of service delivery is the diagnostic team of local service providers who come together from throughout the region on predetermined clinic days in a variety of communities for the purpose of assessment and diagnosis.

All information flows to and through a team coordinator. She ensures that the information is collected and the patient and site prepared. She controls the flow of the clinic day, engages and delegates all the team members in their various roles and manages the details of the day. The team coordinator also ensures that the participating agencies are satisfied with the outcomes, and she deals with any arising issues immediately.

This community-based multidisciplinary team is made up of a physician, neuropsychologist, mental health therapist, psychiatrist, career counsellor, addictions counsellor, cultural liaison, legal representative, disability services coordinator, team coordinator and postdiagnostic outreach worker. A specialized hospital or specialized services are often not available in rural communities, thus forcing patients and families to travel to larger centres for service. This creates many barriers to accessing services, including limited transportation, fear of cities, lack of financial resources and a feeling that one is ill if they must travel to see a specialist. Whether real or perceived, these barriers have prevented adults from accessing diagnostic services for FASD.

This model brings local professionals together once a month who have been specifically selected and trained to participate on the LCFASD diagnostic and assessment team. Their contributing agencies provide them with a salary to participate in the team. The Lakeland service area does not have a neuropsychologist that it can borrow for a day. A fee-for-service arrangement has been made with a neuropsychologist who provides service for other agencies in the region and so has some understanding of the rural area. The service area also does not have a psychiatrist to work on the team, and a special arrangement has been made with an interested psychiatrist from Saskatchewan, again on a fee-for-service arrangement. An honorarium is provided to the physician, who is in private practice, thus giving recognition to his commitment and loss of salary for the day. The team coordinator and postdiagnostic outreach workers are employed by the LCFASD. To prevent cancellations by the clinic, each team member has an identified and trained backup to address employee turnover, holidays and sick leave.

The team dedicated to adult patients is mobile and sees one adult per month, because the volume of information needed for adult patients is very extensive and the testing is all done in one day.

## SIX PHASES OF DIAGNOSIS

### Phase 0: preclinic

Referrals are received by the team coordinator, who determines eligibility (i.e., residence in the service area and confirmation of mothers' drinking habits during pregnancy). An advocate (e.g., community worker, public health nurse, women's shelter, parent, spouse) is identified to assist the patient in completing the application and consent forms. The team coordinator may assist the patient with this if the patient has no support system. Most referrals come from social workers, employment counsellors, families, employers, lawyers or the LCFASD itself. The LCFASD may find that parents of diagnosed children need diagnosis and assessment for FASD themselves, or the women within a mentorship program for those at high risk of alcohol use during pregnancy may need to be seen for diagnosis and are referred to the team coordinator.

On receiving the application package, the team coordinator reviews all information and collects any missing documentation. When the file is complete, a clinic date is selected, with an average wait of 3 months. The cultural liaison or the team coordinator may assist the patient and members of the support system in understanding the process of clinic day. The team coordinator also ensures that all team members have information about location, dates, times and a very brief overview of the patient for each clinic day. The team moves around to different communities in the region, so it is critical that everyone knows the correct location.

### Phase 1: clinic days

Most patients like the in-clinic process to occur in one day; they may have difficulty waiting for results or may have problems returning for a second clinic day. The neuropsychologist completes a battery of tests depending on what assessments have been completed in the past. This is the most time-consuming part of the clinic day and begins before the rest of the team arrives.

The team is provided with a history of the patient. Information gaps are identified and questions generated for the clinical interviews. The clinical interviews are conducted by a variety of team members

with the patient and members of the support system (e.g., parent, spouse, case worker). The interviews provide valuable information about the current situation, functional difficulties, areas of strengths and any heretofore undocumented information. This process helps the patient and family to identify what they want to get out of a diagnosis. Clinical interviews are followed by examination by the physician, which includes facial measurements, head circumference, height and weight, and a soft neurologic assessment.

### Phase 2: diagnosis and recommendations

The team meets to review all of the gathered information and to make a determination of diagnosis and recommendations. Input from all members has equal consideration, and each member may contribute his or her ideas and thoughts to the process. Consensus must be reached in all areas (growth, face, brain and alcohol) by all members before conclusion. Using the 4-digit code and translating to language used by the Institute of Medicine, all diagnoses are listed (e.g., learning disabilities, language deficits, memory problems). Then the team formulates the recommendations, which will be given to the patient and family that day.

During this phase, the postdiagnostic outreach worker will meet with the patient and members of the support system to inform them about what will happen during the next phase, the case conference, and to tell them that they will meet in 1 or 2 weeks to begin working on the recommendations.

### Phase 3: case conference

A case conference held the same day with the patient and members of the support system provides the diagnostic information and recommendations. A written copy of the diagnosis and recommendations is provided, which helps the patient remember what was discussed and begin to address the recommendations. The patient and the people supporting him or her have an opportunity to ask the team questions and are given some resources to take home, such as *Rainy & Red*,<sup>7</sup> a story book developed by the LCFASD that is designed to assist adults in better understanding their disability.

### Phase 4: emotional support

The mental health therapist meets with the patient privately to again review diagnostic and recommendation information and to emotionally debrief the



patient. The psychiatrist will meet privately with the people supporting the patient for the same purpose. It is important to provide clear direction for patients and those supporting them to ensure that they know where to seek emotional support if needed. In most instances, the patient is relieved to have a reason for the way things have happened in their lives.

### Phase 5: team debriefing

Many community-based team members are not accustomed to the process of diagnosis and may have to emotionally debrief particularly difficult patient histories. This helps to keep team members healthy and able to continue their work.

### Phase 6: outreach support

The LCFASD believes that every family requires some form of additional support following a diagnosis. The centre employs postdiagnostic outreach workers to connect the patient to the local community supports and assist the patient with following through on recommendations. The outreach worker will remain involved with the patient as long as is required.

The team coordinator combines the completed

reports from the team members into one document. A copy of the report is sent to the referring organization, family physician, team physician and others as identified by the patient. The team of professionals is not required to provide any follow-up as part of their team involvement.

## CLINICAL OBSERVATIONS

Since 2002, the LCFASD team has attempted to diagnose one adult per month. This has not always occurred because of patients unexpectedly leaving the community, being incarcerated, being homeless or moving to stay with the next family member or friend, or team members being unavailable because of unscheduled events. Table 1 shows characteristics of the 57 assessed adults who were given diagnoses by the LCFASD team.

## DISCUSSION

### Model of service

Assessment and diagnosis of adults with FASD is a new practice in Canada, with only a handful of clinics attempting this work. The LCFASD has taken

**Table 1. Characteristics of 57 adults seen at the Lakeland Centre for Fetal Alcohol Spectrum Disorder from 2002 to 2010**

Characteristic	% of patients	Characteristic	% of patients
Diagnosis*		Living situation	
ARND	85	Independent	14
Partial FAS	12	With spouse	18
FAS	0	With biological parent	25
No diagnosis	3	With adoptive or foster parent	15
Sex		Homeless	2
Male	48	Jail	2
Female	52	Extended family	25
Ethnic background		Had children†	42
White	26	Had children who were in the care of others	29
Aboriginal	74	Legal involvement‡	40
Marital status		Employed at time of diagnosis	14
Single	70	Health concerns§	58
Married	11		
Common-law	16		
Separated or widowed	3		

ARND = alcohol-related neurodevelopmental disorder; FAS = fetal alcohol syndrome.

\*Fetal alcohol spectrum disorder is an umbrella term used to encompass all of the alcohol-related diagnoses, which include FAS, partial FAS and ARND. All of these diagnoses can include a range of maladaptation, intelligence and ability levels. In FAS, the patient presents with substantial growth deficiencies, characteristic facial features and brain dysfunction, whereas patients with partial FAS have a less severe expression of these characteristics and ARND patients present with only the brain dysfunction.

†Many of the patients' children were not in their care, so an accurate number was difficult to obtain.

‡Includes only charges against patients, not involvement with justice system (e.g., as a victim or involvement with child welfare).

§Important health issues that needed treatment, such as untreated diabetes, brain tumour, obesity, eating disorder, malnutrition and pregnancy.

the community-based model that it developed for children and expanded the application to serve adults. The use of in-kind donations from community agencies allows rural areas to deliver specialized services in a cost-effective and confident manner. Team members from community agencies have a unique perspective in being able to make recommendations regarding the services of their agency and from their knowledge of other local services. This allows patients and members of their support systems to receive practical and relevant recommendations.

With the use of this model, team members report a less stressful workload because they are a part of a team dealing with complex cases and they are not on their own, cross-training of various disciplines has proven very helpful in everyday work, agencies have a specialized service that they can refer patients to and agencies have confidence in the services being provided. The contributing agencies benefit from their involvement with LCFASD because they are able to use the expertise of their employee trained in FASD.

The use of mobile teams has reduced many real and perceived barriers for patients. The smallest of communities have been host to FASD diagnostic services, and it has been the clinic's experience that additional referrals will follow after a visit to a community.

In a postclinic survey,<sup>8</sup> families and patients indicated that postdiagnostic outreach support was the most useful aspect of the diagnostic process. The postdiagnostic outreach worker visits patients in their homes and provides support using philosophies in harm reduction and relational theory.

The LCFASD has a patient-focused approach rather than a research focus, like the FASD diagnostic clinic at the University of Washington,<sup>1</sup> and its patients provide data for FASD research. A patient-centred approach means that the needs of the patient and family come before the needs of the team or the need for research. This commitment to patient care and respect is likely the largest contributing factor to the overwhelmingly positive patient feedback the LCFASD receives.

### Successes

Several factors have been identified as critical to the LCFASD's success in providing diagnostic services for adults. These include selection, management and coordination of the team; patient focus; cultural connections; community readiness; and political visibility.

The conscious development of an effective team

is critical. Team members request to be part of the team (indicating an interest in FASD), work well together and are dedicated professionals. Team dynamics are critical to the success of the work. Every team member's input is considered equally important, and decisions are made through team consensus. Passion for the cause is critical. Team members are all trained in FASD, specifically its diagnostic components, and their role on the team by the LCFASD. Each team member also has an identified and trained backup who can substitute in the event of sickness, holidays or staff turnover so that clinic appointments can still proceed.

Establishing an effective network of regional and community partners with a broad, integrated view is a priority. Communities are prepared to support and participate with the diagnostic teams. A diagnostic clinic may not "parachute" as well into communities that are not prepared. A strong indicator of readiness would be if many community agencies were asking for FASD diagnostic service.

A commitment to patient-focused services ensures better services and more enthusiastic participation from staff.

Good working relationships, based on cultural knowledge and respect, are established with all communities. Aboriginal professionals are included as team members to advise the team and give clarification about cultural issues, and to support the families of patients when appropriate. People from many other cultures in our region are accessing services, and every effort is made to find a cultural liaison to the team.

Political visibility and partnerships with all levels of government are cultivated and are critical for funding and support. For example, the LCFASD organizes fundraisers, is visible at conferences and liaises with federal, provincial and local representatives to put forth the needs of people with FASD.

### Challenges

One of the major challenges in implementing this model has been the availability of rural professionals, both as primary team members and in filling backup positions. Finding the right person (i.e., someone with an interest and background in FASD, the ability to work effectively in a team and a good sense of humour) can be challenging. Having agency partners appoint employees to join the team is less effective than if employees request to be a part of the service. The LCFASD provides team training sessions annually to train new members, as well as

for communities who wish to train their own teams. This training has proven to be critical to the functioning of teams.

Adult patients present the challenge of not always having a stable support network. In the event that a scheduled patient is unavailable on the clinic day, every clinic must be prepared with 1 or 2 patients who can be called in to be assessed. This instability also presents many challenges to the provision of postdiagnostic support, because outreach workers often need to help patients meet basic needs before addressing more supportive or treatment options of the recommendations.

In the beginning, there was concern that the 4-digit code would not be effective in diagnosing adults; however, it has worked very well. The characteristic facial features are just as prominent in adults as they are in children when we specifically look for them. One challenge is measurement of the philtrum when the patient has a moustache or beard.

## CONCLUSION

The service delivery model developed by the LCFASD has turned out to be appropriate and effective for the rural areas in northeastern Alberta. It addresses the need for professional, timely assessment and diagnosis with an emphasis on patient support in a rural setting. The LCFASD believes that this service model can be adopted by other communities wishing to provide diagnostic services for FASD in adults.

## REFERENCES

1. Astley SJ, Clarren SK. *Diagnostic guide for fetal alcohol syndrome and related conditions: the 4-digit diagnostic code*. 2nd ed. Seattle (WA): University of Washington Publication Services; 1999.
2. McFarlane A, Rajani H. Rural FASD diagnostic services model: Lakeland

Centre for Fetal Alcohol Spectrum Disorder. *Can J Clin Pharmacol* 2007;14:e301-6.

3. Lemoine P. The history of alcoholic fetopathies. *J FAS Int* 2003;1:e2.
4. Jones KL, Smith DW. Recognition of the fetal alcohol syndrome in early infancy. *Lancet* 1973;302:999-1001.
5. Stratton K, Howe C, Battaglia FC, editors. *Fetal alcohol syndrome: diagnosis, epidemiology, prevention, and treatment*. Washington (DC): Institute of Medicine and National Academy Press; 1996.
6. Chudley AE, Conry J, Cook J, et al. Fetal alcohol spectrum disorder: Canadian guidelines for diagnosis. *CMAJ* 2005;172(5 Suppl):S1-S21.
7. McFarlane H. *Rainy & red*. Cold Lake (AB): Lakeland Centre for FASD; 2003.
8. Stonehocker D. *Evaluation of adult support program*. Cold Lake (AB): Lakeland Centre for FASD; 2007.

Introducing...

# SeeMore™

## Ultrasound Imaging Probe

**The first ultrasound probe that plugs directly into your laptop.**



- Abdominal, endocavity & vascular access probes available
- Affordable, portable ultrasound

SeeMore Imaging Canada

Tel: 604.922.0874 • 1.800.927.4687

www.seemore.ca • info@seemore.ca

# OUT BEHIND THE BARN DANS LE FEU DE L'ACTION

## Apple's new iPad – Tool or toy?

*Barrie McCombs, MD,  
FCFP*

*Medical Information Service  
Coordinator, Alberta Rural  
Physician Action Plan,  
Calgary, Alta.*

*Correspondence to:  
Dr. Barrie McCombs,  
5111 Utab Dr. NW,  
Calgary AB T2N 5Z9;  
barrie.mccombs@rpap.ab.ca;  
www.vlibrary.ab.ca*

To satisfy my recurring, relapsing techno-lust, I visited the Apple store to see the new iPad computer. It is impressive, but I didn't buy one because I already own at least one device that does what I would expect of the iPad. But it might be perfect for you, so let's talk about its major features.

The iPad is 7.5" wide, 9.5" high and 0.5" thick. The top is mostly a bright touch-sensitive display screen and looks like a large version of Apple's iPod Touch or iPhone devices. Its chief advantages are portability and ease of use, and its usefulness is somewhere between a smartphone and a small laptop computer.

### AVAILABLE MODELS

There are 2 models, each of which comes with 16, 32 or 64 GB of memory. The first connects to the Internet using only wireless (Wi-Fi) technology. The second can connect to both wireless and the newer 3G cellular networks offered by Telus, Rogers and Bell. To use a cellular network, you must also purchase a subscriber identity module ("SIM") card and a data service plan. The service providers may allow you to share the data plan from your smartphone for a monthly charge.

### HARDWARE

The iPad uses the touch-sensitive screen to display a full-sized keyboard, suitable for touch typing. It can also be combined with any Bluetooth keyboard. A cable is provided to connect to a USB 2.0 port on a desktop computer for synchronizing data and charging

the battery. Among other accessories, Apple sells an external keyboard and a protective case that can act as a viewing stand. Surprisingly, no earphones are provided and there are no USB ports for connecting external devices.

### OPERATING SYSTEM

The operating system is easy to use. Apple provides the free iTunes program for synchronizing files between the iPad and a desktop computer. iTunes also connects to an online store where users can purchase applications, music and videos.

### INTERNET BROWSER

The Safari browser application works whenever a wireless or cellular Internet connection is available. One limitation is that Safari cannot display the Flash Video format used on many websites.

### MAIL, CONTACTS AND CALENDAR

Applications are included for managing email messages, contacts and an events calendar. These applications will synchronize with Microsoft Outlook or the corresponding applications on an Apple Mac.

### MUSIC AND VIDEO

The iPod application plays music on the iPad's internal speakers. The Video application plays movies, TV shows and other videos. Both music and video files are available from the iTunes Store. These features make it attractive as a source of personalized entertainment during long trips.



## IBOOKS

The iBooks application provides competition for the Kindle and other book-reading devices and offers unique bookmarking and search features. Books can be downloaded only from iBooks, which is separate from the iTunes Store and can be accessed only from the device. However, books purchased from other sources can be transferred to the iPad through iTunes.

## PHOTOS

The Photos application allows the iPad to be used as a digital picture frame for storing and organizing photos. An adaptor is available to connect directly to a digital camera or SD card.

## CELLULAR PHONE

Although the iPad can connect to the Internet using cellphone networks, it has no built-in telephone capability. With the addition of a Bluetooth earpiece, it could be used to make calls through Internet-based telephone applications such as Skype.

## SOFTWARE APPLICATIONS

A wide variety of application programs are available, including many of those written for the iPhone. These include Apple's own Pages (word processor), Numbers (spreadsheet) and Keynote (presentations) which are similar to the Word, Excel and PowerPoint applications in Microsoft Office.

## MEDICAL APPLICATIONS

Many mobile medical software vendors have adapted

their programs to run on the iPhone. They will be easier to read on the larger iPad display, making it a useful quick-reference tool. Unfortunately, it is hard to find physician-oriented medical applications among the many consumer-oriented applications in the iTunes Store.

## THE BOTTOM LINE

For now, I'll stick with a basic cellphone, an iPod Touch for music and a PC desktop for serious computing. I might change my mind if I find more useful iPad applications. If you would like more information about the iPad, visit the websites mentioned below.

**Acknowledgement:** The author thanks Jesse Wootton, President, Age of the Geek Computer Solutions, who acted as a consultant for this paper.

**Competing interests:** None declared.

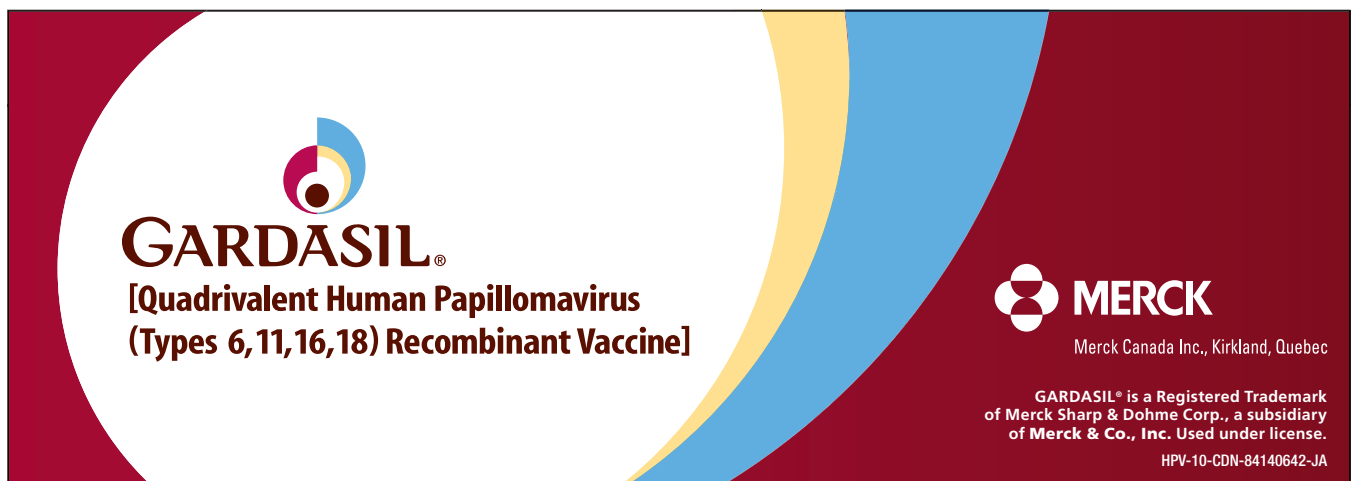
## USEFUL WEBSITES

### Apple

- The main Apple website provides detailed information about the iPad and its features: [www.apple.com/ca](http://www.apple.com/ca)
- The complete user manual can be found at [support.apple.com/manuals/#](http://support.apple.com/manuals/#)

### iPad in Canada

- This website offers useful up-to-date information about the iPad, including a comparison of the data plans available from the Telus, Rogers and Bell networks: [www.ipadincanada.ca](http://www.ipadincanada.ca)



**GARDASIL®**  
[Quadrivalent Human Papillomavirus  
(Types 6, 11, 16, 18) Recombinant Vaccine]

**MERCK**  
Merck Canada Inc., Kirkland, Quebec

GARDASIL® is a Registered Trademark of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc. Used under license.  
HPV-10-CDN-84140642-JA

### How did I end up in rural medicine?

*Roderick Cheung, MD  
Rural Hanover Site Chief  
Resident, Department  
of Family Medicine,  
University of Western  
Ontario, London, Ont.  
Chair, Resident Committee,  
Society of Rural Physicians  
of Canada, Shawville, Que.*

*Correspondence to:  
Dr. Roderick Cheung,  
Hanover Medical Associates,  
118 7th Ave., Hanover ON  
N4N 2G9; rcheun22@uwo.ca*

I have been told by quite a few people that I am not the typical rural resident. I was not born nor did I grow up in a rural area. As Hong Kong was my birthplace and I was raised in the Greater Toronto Area, I had no ties with rural Canada. I also did all of my undergraduate medical training at one of the most urban academic centres in Canada, the University of Toronto. So how did I end up in rural medicine?

It turns out I was able to get an opportunity to experience what rural medicine is early in my medical training. I remember how we had 14 weeks off in the summers of the preclerkship years. Being a keen medical student, I was working hard to fill the weeks up with activities that would prepare me to become a competent physician later on. I managed to get a grant to do 12 weeks of research at Sunnybrook Health Sciences Centre in Toronto. But I had 2 weeks left. I thought that 1 week off would be enough. So what could I do with the extra week?

Around that time, I had received an email about the chance to participate in Rural Medicine Week in Orangeville, organized by the Rural Ontario Medical Program (ROMP). I immediately signed up. This gave me an opportunity to see how rewarding rural family medicine is. I really liked the variety of practice opportunities available. Your practice can involve shifts in the emergency department, doing obstetrics, giving anesthesia in the operating room, nursing home visits, having a family practice in the office and admitting your own patients into the hospital. I then realized

that I did not have to become a subspecialist. You can have an interesting and challenging career being a rural generalist. This triggered my interest in rural medicine. I started going to Google Maps and learning about the different rural areas in Canada. I was able to organize further rural electives with ROMP. I also started getting involved with the student committee of the Society of Rural Physicians of Canada (SRPC). With funding provided by ROMP, I was able to participate in Annual Rural and Remote Medicine Courses organized by the SRPC.

There has been much talk about how the way to produce more rural physicians is by accepting more students from rural areas. I think it is equally important to implement early exposure of rural medicine into undergraduate medical programs. Otherwise, there will not be enough time for medical students to explore this field through their undergraduate medical training. One great example of mandatory early exposure to rural medicine is Discovery Week, a program organized by the Southwestern Ontario Medical Education Network. This involves a 1-week placement in rural clinical settings at the end of first year for all undergraduate medical students at the Schulich School of Medicine & Dentistry at the University of Western Ontario. I hope that similar programs can be established in all of the other Canadian medical schools. Because without them, I would not have become a rural resident.

**Competing interests:** None declared.

Please send us your comments and opinions. / Nous serons heureux de recevoir vos commentaires et opinions. Letters to the editor should be addressed to: / Prière de faire parvenir les lettres à la rédaction à l'adresse suivante : *CJRM*, 45 Overlea Blvd., P.O. Box 22015, Toronto ON M4H 1N9; fax 416 961-8271; [cjrm@cjrm.net](mailto:cjrm@cjrm.net)

## THE BENEFITS OF MAMMOGRAPHY ARE MARGINAL

I read with interest McDonald and Sherman's paper on determinants of mammography use<sup>1</sup> and Dr. McRae's related letter to the editor.<sup>2</sup> As McDonald and Sherman point out, virtually all related practice guidelines recommend screening mammography for low-risk asymptomatic women after they reach a certain age. However, Dr. McRae correctly highlights the increasing evidence that the benefit of mammography in this population is marginal.<sup>3</sup>

Dr. McDonald suggests in his reply to Dr. McRae's letter that "efforts to communicate information on the importance of regular screening may have been relatively less effective in reaching rural women." Although this is one possible interpretation of the authors' results, it is also possible that rural physicians are in fact more successful at conveying to patients that the benefits of mammography are marginal, and that fewer of their patients elect to pursue mammography as a result.

It is also possible that rural populations differ systematically from urban populations in their response to a perceived health risk.

The observation that rates of

mammography screening are lower in rural populations is an interesting one and warrants further study,<sup>1</sup> but I would side with Dr. McRae in her suggestion that efforts to increase mammography use are premature.

**Kris Aubrey-Bassler, MD, MSc, CCFP**

Memorial University of Newfoundland, St. John's, NL

## REFERENCES

1. McDonald JT, Sherman A. Determinants of mammography use in rural and urban regions of Canada. *Can J Rural Med* 2010; 15:52-60.
2. McRae S. Screening mammography [letter]. *Can J Rural Med* 2010;15:167; author reply 168.
3. Welch HG. Overdiagnosis and mammography screening. *BMJ* 2009;339:b1425.

## [One of the authors replies:]

I agree with Dr. Aubrey-Bassler that it is possible that rural physicians may be relatively more successful at conveying certain information to patients, perhaps including the possibly marginal benefits of mammography screening. However, such an explanation is not likely to be what underpins the results in our paper, because our analysis is based on survey data collected in the years 2002–2005, a period during

which the debate about mammography in the literature was just beginning to heat up.<sup>1-3</sup>

Regarding Dr. Aubrey-Bassler's second point, it may well be the case that rural populations differ systematically from urban populations in their response to a perceived health risk, but it is not obvious a priori whether such differences in responses would lead to better or worse outcomes.

Generally speaking, cancer screening that is not consistent with established guidelines may not be optimal. The possible revision of recommended guidelines for mammography screening would provide an interesting opportunity to assess the extent to which the future incidence of screening in urban and rural areas would reflect such changes.

**James Ted McDonald, PhD**

Department of Economics, University of New Brunswick, Fredericton, NB

## REFERENCES

1. Gotzsche PC, Olsen O. Is screening for breast cancer with mammography justifiable? *Lancet* 2000;355:129-34.
2. Duffy SW, Tabár L, Smith RA. The mammographic screening trials: commentary on the recent work by Olsen and Gotzsche. *CA Cancer J Clin* 2002;52:68-71.
3. Freedman DA, Petitti DB, Robins JM. On the efficacy of screening for breast cancer. *Int J Epidemiol* 2004;33:43-55.

## SERVICE INFORMATION

---

**Society of Rural Physicians of Canada (SRPC) members:** Subscription price included in membership fee.

**Nonmembers (2011 rates):** *Individuals:* Canada, \$109 (single copy, \$22); United States and elsewhere, US\$139. *Institutions:* Canada, \$176 (single copy, \$22); United States and elsewhere, US\$225 (single copy, US\$22). *Students/residents:* \$35 Can/US\$. Please contact the CMA Member Service Centre (see next paragraph) for other information. These rates include surface postage. Canadian subscribers please add applicable taxes.

All subscriptions are payable in advance. Payment should be made to the Canadian Medical Association (CMA) in the funds specified. MasterCard, VISA and American Express are accepted. Orders or requests for information should be addressed to *CJRM*, CMA Member Service Centre, 1867 Alta Vista Dr., Ottawa ON K1G 6R7; 888 855-2555 x2307 (Canada/US) or 613 731-8610 x2307; fax 613 236-8864; [cmsamsc@cma.ca](mailto:cmsamsc@cma.ca).

**Missing issues:** Claims for missing issues must be made within 3 months of publication date (subject to availability).

**Change of address:** Send one month before effective date to the CMA Member Service Centre (see above).

**Reprints:** Commercial and author reprints can be purchased through our partner Sheridan Press. To purchase commercial article reprints and ePrints, or to request a quote, please contact Matt Neiderer, Content Sales, Sheridan Content Services; 800 635-7181 x8265; [matt.neiderer@sheridan.com](mailto:matt.neiderer@sheridan.com). Authors can order their reprints by submitting an author reprint order form available at the Sheridan Press Electronic Order Centre at [www.sheridan.com/cma/eoc](http://www.sheridan.com/cma/eoc) or by contacting Lori Laughman,

Customer Service Representative, Sheridan Reprints Services; [lori.laughman@sheridan.com](mailto:lori.laughman@sheridan.com).

**Copyright and Permissions:** Copyright for all material is held by the SRPC or its licensors, unless otherwise indicated. You may reproduce or otherwise use material from this journal only in accordance with Canadian copyright law and provided that credit is given to the original source. In the case of photocopying or other reprographic copying, please contact the Canadian Copyright Licensing Agency (Access Copyright): 800 893-5777; [accesscopyright.ca](http://accesscopyright.ca). For any other use, including republishing, redistribution, storage in a retrieval system or transmission in any form or by any means, please contact Permissions Coordinator, CMA Publications, 1867 Alta Vista Dr., Ottawa ON K1G 5W8; fax 613 565-7704; [permissions@cma.ca](mailto:permissions@cma.ca).

**Indexing and Abstracting:** *CJRM* is available through the following services: MEDLINE/*Index Medicus*, Ovid Technologies, EbscoHost EJS, ProQuest Information and Learning Company, CAB Abstracts, Global Health and *Ulrich's International Periodicals Directory*. All articles published in *CJRM* are available free at the time of publication at [cma.ca/cjrm](http://cma.ca/cjrm).

**RuralMed:** Information on RuralMed (the SRPC Listserv) is available online at [srpc.ca](http://srpc.ca).

**Advertising:** *Classified ads:* Contact Journal Advertising, *CJRM*, 1867 Alta Vista Dr., Ottawa ON K1G 5W8; 800 665-7336 or 613 731-8610 x2107/2041; fax 613 565-7488; [advertising@cma.ca](mailto:advertising@cma.ca). See Classified Advertising section of *CJRM* for information on rates. *Display ads:* Contact Journal Advertising (see preceding information), x2159.



The Ontario Human Rights Code prohibits discriminatory employment advertising.

Le Code des droits de la personne de l'Ontario interdit la discrimination dans la publicité relative à l'emploi.

The *Canadian Journal of Rural Medicine (CJRM)* is pleased to accept classified advertisements. The deadline is 1 month before issue date. Classified rates: 1 page \$1020; 2/3 page \$975; 1/2 page \$830; 1/3 page \$635; 1/4 page \$530; 1/8 page \$450. For a *CJRM* confidential-reply box number there is a \$20 charge (first insertion only). VISA, MASTERCARD AND AMERICAN EXPRESS ACCEPTED.

Le *Journal canadien de la médecine rurale* accepte volontiers les annonces classées. Celles-ci doivent être reçues au Journal au plus tard 1 mois avant la date de parution. Tarif des annonces classées : 1 page, 1020 \$; 2/3 page, 975 \$; 1/2 page, 830 \$; 1/3 page, 635 \$; 1/4 page, 530 \$; 1/8 page, 450 \$. L'emploi d'une boîte-réponse confidentielle au *JCMR* donne lieu à la perception d'un supplément de 20 \$ (pour la première insertion seulement). VISA, MASTERCARD ET AMERICAN EXPRESS ACCEPTÉS.

Advertisements should be sent to: Journal Advertising, *CJRM*, 1867 Alta Vista Dr., Ottawa ON K1G 5W8; tel 800 663-7336 or 613 731-8610 x2107/2041; fax 613 565-7488; advertising@ema.ca

Send all box number replies to: Box \_\_\_\_\_, *CJRM*, 1867 Alta Vista Dr., Ottawa ON K1G 5W8.

Le texte des annonces doit être adressé à : Annonces classées, *Journal canadien de la médecine rurale*, 1867, prom. Alta Vista, Ottawa ON K1G 5W8; tél. 800 663-7336 ou 613 731-8610 x2107/2041; fax 613 565-7488; advertising@ema.ca

Veillez faire parvenir les réponses aux numéros de boîtes à l'adresse suivante : Boîte \_\_\_\_\_, *CJRM*, 1867, prom. Alta Vista, Ottawa ON K1G 5W8.



*It's the Island calling*

## Family Practice Opportunities

### Vancouver Island, B.C.

Your career can be a demanding one...so why not consider a location where the benefits are naturally distracting?

Offering a temperate climate, expansive natural beauty, abundant attractions and cultural activities such as theatre and concert productions, as well as year-round recreation ranging from golf to hiking, kayaking, fishing, boating and winter skiing...Vancouver Island has it all.

Current full-time Family Practice opportunities are available on Galiano and Gabriola Islands, and in Ucluelet and Port Hardy. Each community provides its own unique characteristics and a quality of life on Canada's West Coast second to none.

Rural incentives may include: \$10,000 - \$20,000 recruitment incentive, \$5,000 relocation, fee-for-service premiums, annual flat fee retention payments, rural CME and a Rural GP Locum Program. Port Hardy and Ucluelet are designated Family Physicians for BC (FPs4BC) communities. This program offers up to a maximum \$100,000 in funding for a range of options including debt repayment, practice start up and new practice supplement.

View all our current opportunities at: [www.viha.ca](http://www.viha.ca) or contact us directly for more information.  
Sheila Leversidge, Coordinator Physician Recruitment  
Tel: 250-740-6972 / Fax: 250-716-7747 / Email: [physicians@viha.ca](mailto:physicians@viha.ca)

Discover Vancouver Island—with unlimited possibilities for your career, family and future.



VANCOUVER ISLAND  
health authority  
viha.ca

## Rural Emergency Continuum of Care Conference

Please Save the Dates!

The Rural Team:  
A Collective Responsibility

June 15-18, 2011  
Delta Grand Okanagan Hotel  
Kelowna, BC

### Programme Highlights:

- Interactive Small Groups and Interprofessional Learning with Physicians, Nurses and First Responders
- Hands-on Workshops, Case Presentations, Interactive Talks and Lectures
- Pre-Course - The CARE Course
- Courses such as SHOCK, Simulator, ACLS-EP, AIME
- Acute Stroke, Interventional Cardiology, Anaphylaxis, CHF, Trauma, OB Emergencies and Much More
- Faculty Development, GP Anesthesia and Obstetrics
- Policy Discussion Forums
- Full programme and registration package to follow at [www.rccbc.ca](http://www.rccbc.ca)



RSVP at  
[conference@rccbc.ca](mailto:conference@rccbc.ca)



PHM-2019

[betterhere.ca](http://betterhere.ca)



### Wanted: Family Physicians to Join Us Here

Feel the Small Town difference! Creston is a vibrant community in southeast Beautiful British Columbia. Come practice medicine with a collegial call-group, and enjoy four season recreational opportunities at your doorstep!

Opportunities for solo or group turn-key practices await!

It's Better Here!

Visit [www.betterhere.ca](http://www.betterhere.ca) to find out why.

Creston



1-877-522-9722

[physicianrecruitment@interiorhealth.ca](mailto:physicianrecruitment@interiorhealth.ca)

PHM-2019

## Explore New Frontiers

Dynamic, challenging family practice in scenic Northern Manitoba & Ontario

- experience First Nations healthcare and culture
- flexible and attractive contract arrangements - full or part-time
- annual package starting at \$360,000 for full-time positions
- must be licensed or eligible for licensure with CPSM or CPSO
- no overhead
- signing & retention bonuses; CME allowance
- relocation & travel assistance
- 7+ weeks vacation plus statutory holidays
- furnished accommodations & meal allowance provided
- challenging medicine; dynamic & supportive colleagues
- gratifying work

Amdocs is changing the face of medicine in the north one physician at a time - Join our team and be a part of this exciting adventure!

If you are interested in finding out more about available practice opportunities with Amdocs, please contact **Liz Bilton, Manager, Recruitment** at:

[lbilton@amdocshealth.com](mailto:lbilton@amdocshealth.com)  
1.888.934.1556

**AMDOCS**<sup>+</sup>  
WE CARE WITH CARE  
[www.amdocshealth.com](http://www.amdocshealth.com)

THE  
**NORTH WEST**  
COMPANY

PHM-2019

# Rural Generalists

[for Queensland, Australia]

**If you have the skills, we have the settings ...**

Queensland Health, Australia is seeking experienced rural **medical officers** with **advanced skills** in **obstetrics, emergency or anaesthetics** to work in regional and rural locations across the beautiful state of Queensland.

Lodge an expression of interest at: [www.health.qld.gov.au/medical](http://www.health.qld.gov.au/medical)  
or for enquiries email [ruralmedicalcareers@health.qld.gov.au](mailto:ruralmedicalcareers@health.qld.gov.au)  
or telephone +61 1800 000 093



Outstanding packages can include\*:

- highly competitive remuneration packages
- opportunities for recognition of advanced practice
- professional development assistance and leave arrangements
- private practice loading (35 - 50 per cent)
- motor vehicle and communication packages.

PHM-275

CO.210910-CRM



## Central Community Health Centre PHYSICIAN

At the Central Community Health Centre we are dedicated to wellness for all. This means we take a holistic view of our clients' health with a unique model of care. It also means we offer a great lifestyle for our physicians – salaried positions, support of an interdisciplinary team, office management and reasonable office hours, comprehensive benefit package including pension.

If you are interested in client-centred healthcare, working with a dedicated and energetic interdisciplinary team; if you want to make your mark through innovative approaches to healthcare, disease prevention and health promotion, we invite you to take a closer look.

The Central Community Health Centre (CCHC) is located in the city of St. Thomas in the heart of Southwestern Ontario. This area of Ontario, Canada is known for its wide-open spaces, streams, lakes, hiking and bicycle trails, and friendly people who operate family farms, run small businesses and work in a variety of industries. We are easy to get to – just minutes from 401 Highway, within minutes to London, and very close to Kitchener-Waterloo, Toronto, Hamilton or Windsor. Elgin County has a network of social service agencies and community hospitals all of which are enthusiastic supporters of the CCHC.

You will work with a committed team of professionals – nurse practitioners, registered nurses, dietitian, social worker, health promoter, community outreach worker and a dynamic administrative team. Our physicians have the support of the primary health care team so together we can address the complex needs of our clients. Community services and educational programs (e.g. diabetes management, smoking cessation, nutrition and pre-natal) are all designed to help clients take charge of their health.

CCHC offers a most generous compensation package including salary, signing bonus, benefits including pension, support for continuing education, assistance with spousal employment, and moving assistance. We are open to flexible hours, including part-time hours.

For more information contact [jwiley@centralchc.com](mailto:jwiley@centralchc.com)  
or call 519 633-7989, ext. 403 to speak to Judith

PHM-275



## Family Physicians

**Opportunity with a Difference.....**

Northern Medical Services has full-time, itinerant contract, and locum positions available in northern Saskatchewan. NMS physicians are active participants in health care delivery to predominantly Aboriginal communities. They work closely with nurse practitioners and other primary care providers to meet the specific needs of each community.

**Projected Income - \$245,000 to \$312,000 per annum.**

Relocation assistance, annual CME allowance, furnished housing, vacation/CME leave and additional benefits too numerous to mention. NMS Physicians also qualify for rural establishment grants.

**Locum rate: \$1141-\$1478 per day plus on-call stipend.**

For further information please contact:

**Kerri Balon, Recruitment Coordinator**

Northern Medical Services  
#404, 333 – 25th Street East  
Saskatoon, SK S7K 0L4  
Toll Free 1-866-NMS-DOCS  
Tel 306 665-2898  
Fax 306 665-6077  
Email [balon.nms@sasktel.net](mailto:balon.nms@sasktel.net)



[www.northerndocs.com](http://www.northerndocs.com)

PHM-197





Life's better here

[betterhere.ca](http://betterhere.ca)

## Life is better for Family Physicians in BC's sunny Southern Interior

### *Here's why...*

Whether you are searching for perfect powder, looking to improve your golf game or wanting more time with your family, you can work and enjoy our exceptional four-season recreational playground all in the same day.

We are seeking Family Physicians for several communities in the BC Southern Interior

where you can have a less hurried lifestyle and still enjoy all the amenities of an urban centre.


Visit [betterhere.ca](http://betterhere.ca) to find out more about the opportunities in these communities. Funded recruitment visits and generous relocation allowance provided.

Contact us today and find out why it's better here.



ASHCROFT CHASE CLEARWATER CRESTON FERNIE  
KASLO LYTTON NAKUSP PRINCETON SORRENTO WILLIAMS LAKE

[betterhere.ca](http://betterhere.ca) 1-877-522-9722 [physicianrecruitment@interiorhealth.ca](mailto:physicianrecruitment@interiorhealth.ca)

 Interior Health



There's MORE to HPV  
than cervical cancer.

**GARDASIL®:**  
The **QUADRIVALENT HPV** vaccine.  
Designed to help protect against  
infection from HPV types 6, 11, 16  
and 18, and the diseases they cause:

- CERVICAL CANCER
- VULVAR CANCER
- VAGINAL CANCER
- GENITAL WARTS IN MALES AND FEMALES  
(only those caused by HPV types 6 and 11 in males)

The **ONLY HPV**  
vaccine indicated  
for **GENITAL**  
**WARTS** in females  
and males.\*

#### INDICATIONS AND CLINICAL USE

GARDASIL® is a vaccine indicated in girls and women 9-26 years of age, for the prevention of infection caused by the Human Papillomavirus (HPV) types 6, 11, 16 and 18, and the following diseases associated with these HPV types: cervical, vulvar and vaginal cancers, genital warts, cervical adenocarcinoma in situ (AIS), cervical intraepithelial neoplasia (CIN) grades 1, 2 and 3, and vulvar and vaginal intraepithelial neoplasia (VIN/VaIN) grades 2 and 3. GARDASIL® is indicated in boys and men 9-26 years of age for the prevention of infection caused by HPV types 6, 11, 16 and 18, and genital warts caused by HPV types 6 and 11.

#### SELECTED IMPORTANT SAFETY INFORMATION

The most commonly reported vaccine-related injection-site adverse experiences in clinical trials with GARDASIL® in females (n = 5,088), amorphous aluminum hydroxyphosphate sulfate (AAHS) adjuvant-containing placebo (n = 3,470) and saline placebo (n = 320), respectively, were pain (83.9%, 75.4%, 48.6%), swelling (25.4%, 15.8%, 7.3%), erythema (24.7%, 18.4%, 12.1%), and pruritus (3.2%, 2.8%, 0.6%). The most commonly reported vaccine-related systemic adverse experience in females was fever: 10.3% for GARDASIL® (n = 5,088) vs 8.6% for AAHS adjuvant- and non-AAHS adjuvant-containing placebo (n = 3,790). The most commonly reported vaccine-related injection-site adverse experiences in clinical trials with GARDASIL® in males (n = 3,092), AAHS adjuvant-containing placebo (n = 2,029) and saline placebo (n = 274), respectively, were pain (61.5%, 50.8%, 41.6%), erythema (16.7%, 14.1%, 14.5%) and swelling (13.9%, 9.6%, 8.2%). The most commonly reported vaccine-related systemic adverse experience in males was headache: 7.5% for GARDASIL® (n = 3,092) vs 6.7% for AAHS adjuvant- and non-AAHS adjuvant-containing placebo (n = 2,303).

This vaccine is not intended to be used for treatment of active external genital lesions; cervical, vulvar or vaginal cancers; CIN, VIN, or VaIN. This vaccine will not protect against diseases that are not caused by HPV. Routine monitoring and Pap test should continue to be performed as indicated, regardless of GARDASIL® administration. Pregnancy should be avoided during the vaccination regimen for GARDASIL®. As for any vaccine, vaccination with GARDASIL® may not result in protection in all vaccine recipients. Syncope (fainting) may follow any vaccination, especially in adolescents and young adults. Syncope, sometimes associated with falling, has occurred after vaccination with GARDASIL®. Therefore, vaccinees should be carefully observed for approximately 15 minutes after administration of GARDASIL®.

PLEASE CONSULT THE ENCLOSED PRESCRIBING INFORMATION FOR INDICATIONS, CONTRAINDICATIONS, WARNINGS, PRECAUTIONS AND DOSING GUIDELINES.

\*Comparative clinical significance has not been established.

When you talk  
to your patients  
about

**HPV**

SELECT GARDASIL® TO HELP PROTECT AGAINST HPV types 6, 11, 16 and 18,  
and the diseases they cause:

- CERVICAL CANCER
- VULVAR CANCER
- VAGINAL CANCER
- GENITAL WARTS IN MALES AND FEMALES  
(only those caused by HPV types 6 and 11 in males)



Merck Canada Inc., Kirkland, Québec

Gardasil® is a Registered Trademark of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.  
Used under license. Please visit our website at [www.merck.ca](http://www.merck.ca) 15-11-HPV-10 (026) 84140542-JA

**GARDASIL®**

(Quadrivalent Human Papillomavirus  
(Types 6, 11, 16, 18) Recombinant Vaccine)

The **QUADRIVALENT HPV** vaccine

See prescribing summary on page 38