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Other Issues

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Le Massif

76 cm x 102 cm oil on canvas
Vladimir Horik, Baie-St-Paul, Quebec.
"Le Massif" was painted as a poster to promote the ski resort at Le Massif de Petite-Rivière-Saint-François, Quebec

A passion for rural medicine

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CJRM 2007;12(1):4

Scanning the recently published SRPC *Manual of Rural Practice*, and reading the contributions of the myriad authors who participated, makes me realize that there are many of us with a passion for rural medicine.

Passion is however a coat of many colours. In a relationship it can be nurturing, supportive and affectionate, or it can turn to jealousy and possessiveness and become pathological and obsessive, leading to assault or worse. At work, and specifically in medical work, it can be an engine for high quality compassionate care, or it can blur the limits of competence and undermine the benefits of team work and collaboration.

In a recent French newspaper, "Hagar the Horrible" comic strip (not reproduced here for lack of the required permission), Hagar addresses a group of potential recruits:* "I'm looking for brave warriors who laugh at danger and death, and who aren't looking for huge salaries at any cost!" Needless to say the recruits all head for the hills. In the next panel his sidekick turns to him and says: "That was the worst recruitment speech I have ever heard!"

Hagar has passion, but clearly little media training. He sounds, however, remarkably like rural physicians do when they talk about their work. Is this passion healthy? Is the reaction of those Viking recruits actually sensible self-preservation? Is Hagar passionate about being a Viking, or is he obsessed?

I have other passions that I indulge when I can: sailing, old cars, motorcycles, history. They all share something that I hope distinguishes them from obsessions — respect. When I am afloat, and the wind is pushing my 7-ton wooden sloop into an Atlantic swell, I am acutely aware of the small dimple that we make on that great ocean's face, and the debt that I will owe this boat when the fog parts and I have reached port safely. When I struggle with a rusty bolt underneath my 30-year-old landrover, I marvel at the simplicity of its design, and the common sense of its designers, as I humbly try to keep her going.

Obsessions on the other hand are controlling, refusing to acknowledge the complexities to be faced and the limits of individuals. Obsessions have no room for respect.

A passion for rural medicine, in its best sense, is a respectful passion grounded in a desire to serve our communities. In spite of the difficulties and the complex environment within which we work, rural physicians must still navigate with whatever information their

compass and the weather allows. Sometimes it's clear sailing — sometimes the fog closes in. We must remain alert for the "cowboys" among us, whose obsessiveness could be dangerous, and try to teach a passionate practice to those who must come after. We may be tilting at windmills, but we do so with big heart. Hopefully our recruits will hang around long enough to hear the whole story, and will, in the end, be at our side when next we lay siege to the castle.

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Une passion pour la médecine rurale

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CJRM 2007;12(1) : 5

En parcourant rapidement le *Manual of Rural Practice* publié récemment par la SMRC et en lisant les contributions des multiples auteurs qui y ont participé, je me suis rendu compte que pour beaucoup d'entre nous, la médecine rurale est une passion.

La passion a cependant de multiples facettes. Dans une relation, elle peut être une source d'appui, de soutien et d'affection. Elle peut aussi se transformer en jalousie et en possessivité, devenir pathologique et obsessive et déclencher une agression ou pire. Au travail, et plus particulièrement en médecine, elle peut être l'élan qui nous fait dispenser avec compassion des soins de grande qualité, ou elle peut brouiller les limites de la compétence et miner les avantages du travail d'équipe et de la collaboration.

Dans la bande dessinée «Hagar dunor» que publiait récemment un journal de langue française (images non reproduites ici parce que nous n'en avons pas eu l'autorisation), Hagar s'adresse à un groupe de recrues éventuelles : «Je cherche quelques braves guerriers qui se moquent du danger et de la mort et qui ne cherchents pas le gros salaire à tout prix!!» Il va sans dire que les recrues prennent la poudre d'escampette. Dans le cadre suivant, le copain de Hagar lui dit : «C'était le pire discours de recrutement que j'aie entendu de toute ma vie.»

Hagar a la passion, mais il est clair qu'il s'y connaît peu en relations avec les médias. Il ressemble toutefois remarquablement aux médecins ruraux lorsqu'ils et elles parlent de leur travail. Cette passion est-elle saine? La réaction de ces recrues viking constitue-t-elle en réalité un moyen sensé d'autopréservation? Hagar est-il passionné ou obsédé par sa nature de Viking?

J'ai d'autres passions auxquelles je cède lorsque je le peux : voile, vieilles bagnoles, motocyclettes, histoire. Ces passions ont toutes un élément qui, je l'espère, les distingue des obsessions, c'est-à-dire le respect. Lorsque je suis sur l'eau et que le vent pousse mon sloop en bois de sept tonnes dans une grosse vague de l'Atlantique, je suis très conscient de la brindille que nous sommes dans ce grand océan et de ce que je devrai au bateau lorsque le brouillard se lèvera et que je serai parvenu à bon port en toute sécurité. Lorsque je me débats avec un boulon rouillé sous mon Land Rover de 30 ans, la simplicité de son concept et le gros bon sens de ses concepteurs m'émerveillent tandis que j'essaie humblement de maintenir le véhicule en état de fonctionner.

Les obsessions, par contre, sont contrôlantes et refusent de reconnaître les complexités à

surmonter et les limites de la personne. L'obsession ne laisse aucune place au respect.

À son meilleur, une passion pour la médecine rurale est une passion respectueuse reposant sur un désir de servir la communauté. En dépit des difficultés et de l'environnement complexe où nous œuvrons, les médecins ruraux doivent quand même naviguer avec l'information que leur boussole et la météo leur permettent de réunir. Parfois, c'est le beau temps — parfois, c'est le brouillard. Il faut demeurer à l'affût des «cowboys» parmi nous, dont l'obsession pourrait être dangereuse, et tenter d'inculquer la passion dans la pratique à ceux et celles qui nous succéderont. Nous nous battons peut-être contre des moulins à vent, mais nous le faisons avec beaucoup de cœur. Espérons que nos recrues resteront assez longtemps pour entendre tout ce que nous avons à leur dire et se retrouveront finalement à nos côtés la prochaine fois que nous assiégerons le château.

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President's message. Solutions and milestones

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The *Canadian Journal of Rural Medicine* has been a great success thanks to the nurturing and dedication of Suzanne Kingsmill as the Managing Editor and Dr. John Wootton as the Scientific Editor. Believe it or not *CJRM* celebrated its 10th birthday on June 1st 2006. This "child" has been brought up well. It is a child prodigy, being the only Canadian journal on rural medicine, and has earned its rightful place in *Index Medicus*.

The other literary achievement to be celebrated is the publication of the *Manual of Rural Practice*, This project began 4 years ago, and contributions came from experienced rural physicians from all over Canada. Many of the articles are newly revised versions of the popular Occasional pieces that first appeared in *CJRM*. The Editor-in-Chief, Dr. Peter Hutten-Czapski, in conjunction with his two coeditors, Drs. George Magee and John Wootton, did a tremendous job in pulling this together with the support of our Administrative Officer, Lee Teperman and Office Staff, cum graphic artist, Anna Kate Ledbetter. As of late December the SRPC had sold 1250 copies. We have also received enquiries on publication rights overseas.

The popularity of the *Manual of Rural Practice* and the *Canadian Journal of Rural Medicine* and the increasingly high attendance at our Rural and Remote conferences tells me that we need to do more to support the learning needs of rural physicians in their practice and to provide better opportunities for the training of medical students and residents of all specialties in rural medicine in rural and remote settings. To this end we have developed and have proposed Federal Solutions for rural health care to the Federal Minister of Health, Tony Clement, the House of Commons Finance Committee and the House of Commons Committee on Human Resource, Social Development and the Status of Persons with Disabilities. The solutions we proposed are:

- rural access scholarships to enhance rural medical student recruitment;
- rural access development grants to permit medical schools to increase rural representation to equitable levels with performance grants to help them meet set goals;
- enhanced training of residents in rural residency programs to ensure rural physicians are highly and broadly skilled and ready for practices generally carried out in relative isolation;
- a Rural Medicine Skill Enhancement Program to increase rural medicine skills training in current medical school training programs and allow existing rural doctors to

upgrade their skills and competencies;
- extension of medical school to rural communities to provide longitudinal training of medical students in rural communities;
- rural health research to support evidence-based decisions for the delivery of health care in rural and isolated communities; and
- a National Rural Medical Round Table to bring together Canada's licensing, teaching, accrediting and professional medical associations to identify collaborative strategies to improve rural health and health care.

In all likelihood, there will be a federal election in the Spring of 2007, and we need your help in lobbying your MPs to address rural health care needs.

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Message du président. Solutions et jalons

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CJRM 2007;12(1) : 7

Le *Journal canadien de la médecine rurale* a connu un grand succès grâce au soin et au dévouement de Suzanne Kingsmill, rédactrice administrative, et du Dr John Wootton, rédacteur scientifique. Croyez-le ou non, le *JCMR* a célébré son 10e anniversaire le 1er juin 2006. Cet «enfant» a été bien élevé. Il s'agit d'ailleurs d'un enfant prodige, car c'est le seul journal canadien de médecine rurale à avoir gagné sa place bien méritée dans l'*Index Medicus*.

La publication du *Manual of Rural Practice* constitue l'autre réalisation littéraire à célébrer. Ce projet lancé il y a quatre ans a attiré des contributions de médecins ruraux chevronnés de toutes les régions du Canada. Beaucoup des articles constituent des versions nouvellement révisées de la populaire série d'articles hors-série parus pour la première fois dans le *JCMR*. En collaboration avec ses deux corédacteurs, soit les Drs George Magee et John Wootton, le rédacteur en chef, le Dr Peter Hutten-Czapski, a abattu un travail énorme en réalisant le projet avec l'aide de notre agente administrative, Lee Teperman, et de notre employée de bureau et graphiste, Anna Kate Ledbetter. En fin décembre, la SMRC avait vendu 1250 exemplaires de l'ouvrage. Nous avons aussi reçu des demandes de renseignements au sujet des droits de publication à l'étranger.

La popularité du *Manual of Rural Practice* et du *Journal canadien de la médecine rurale*, ainsi que le nombre de plus en plus important de participants à nos conférences sur la médecine en milieu rural et éloigné, indiquent que nous devons faire davantage pour appuyer les besoins en apprentissage des médecins ruraux dans leur pratique et offrir de meilleures possibilités de formation des étudiants en médecine et des résidents de toutes les spécialités en médecine rurale en milieu rural et éloigné. À cette fin, nous avons mis au point des solutions fédérales pour les soins de santé en milieu rural et nous les avons proposées au ministre fédéral de la Santé, Tony Clement, au Comité des finances et au Comité des ressources humaines, du développement social et de la condition des personnes handicapées de la Chambre des communes. Nous avons proposé les solutions suivantes :

- bourses d'accès pour les étudiants ruraux afin d'améliorer le recrutement des étudiants en médecine d'origine rurale;
- subventions de développement de l'accès rural permettant aux facultés de médecine de hausser la représentation des étudiants ruraux à des niveaux équitables grâce à des bourses de rendement visant à les aider à atteindre des objectifs;
- meilleur formation dans les programmes de résidence en médecine rurale afin

d'assurer que les médecins ruraux soient dotés d'un grand éventail de compétences et soient prêts à pratiquer souvent dans un isolement relatif;
- programme d'amélioration des compétences en médecine rurale dans le contexte des programmes actuels de formation dans les facultés de médecine et possibilité pour les médecins ruraux déjà actifs d'améliorer leurs compétences et connaissances;
- prolongement des facultés de médecine dans les communautés rurales afin de donner aux étudiants en médecine une formation longitudinale dans des communautés rurales;
- recherche en santé rurale afin d'appuyer la prise de décision factuelle sur la prestation des soins de santé dans des communautés rurales et isolées;
- Table ronde nationale sur la médecine rurale afin de réunir les organismes d'autorisation, d'enseignement et d'agrément, ainsi que les associations professionnelles de la médecine, pour définir des stratégies de collaboration visant à améliorer la santé et les soins de santé en milieu rural.

Il y aura fort probablement des élections fédérales au printemps de 2007 et nous avons besoin de votre aide pour exercer des pressions sur vos députés fédéraux afin qu'ils répondent aux besoins en soins de santé des milieux ruraux.

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Response of rural physicians in a non—fee-for-service environment to acute increases in demand due to physician shortages

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Rebecca I. Van Iersel, BSc

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Introduction: The Weeneebayko Health Ahtuskaywin (WHA) is an Aboriginal regional health authority serving a large remote region on the west coast of James Bay. The physicians are all paid on a non-fee-for-service basis. There are periods of acute shortage, periods of relative stability and periods when much of the care is provided by locum physicians. As a closed system, it is ideal for the investigation of physician response to periods of acute increases in demand for service.

Purpose: This study investigated the relationships between staffing levels and service provision to describe the response of physicians to increased demand due to an acute shortage of physicians. It also looked at whether payment options affected these relationships.

Methods: Using an existing administrative database from WHA for the period 1999 to 2002, relationships between staffing levels and service provision were investigated. We looked at the relationship between total physician levels and the number of patients seen per family medicine clinic. We also studied the relationships between total physician staffing levels and the number of patients seen in clinic, in the emergency department (ED), and per ED shift. We also looked at some proxy measures for the level of intensity of the work, including the number of hospital inpatients, the number of medevacs per ED shift and the number of ED shifts per physician. Exploratory graphical analysis was conducted and was followed by linear regression for associations of interest.

Results and Conclusion: During periods of decreased staffing, physicians saw more patients per clinic and ED shift, despite the lack of financial incentives. The study also clearly demonstrates the increased intensity of the workloads carried by rural physicians in times of staffing shortages as noted by increased numbers of ED shifts, increased numbers of medevacs per ED shift and the lack of a decline in inpatient numbers. This highlights the need for ongoing recruitment and retention efforts in rural and remote locations to ensure adequate physician staffing levels, if burnout is to be avoided.

Introduction : La Weeneebayko Health Ahtuskaywin (WHA) est une régie régionale de santé autochtone qui dessert une vaste région éloignée sur la côte ouest de la baie James. Tous les médecins y sont rémunérés autrement qu'à l'acte. Il y a des périodes de pénurie

aiguë, des périodes de stabilité relative, et d'autres pendant lesquelles des suppléant fournissent la majorité des soins. Comme système fermé, il est idéal pour étudier la réponse des médecins aux périodes de pointe de la demande de services.

Objet : Cette étude a porté sur les liens entre les effectifs et la prestation des services afin de décrire la réponse des médecins à une augmentation de la demande attribuable à une pénurie aiguë de médecins. Les chercheurs ont aussi essayé de déterminer si les modes de rémunération avaient un effet sur ces liens.

Méthodes : En nous fondant sur une base de données administratives existante de la WHA portant sur la période de 1999 à 2002, nous avons étudié les liens entre les effectifs et la prestation des services. Nous avons analysé le lien entre les effectifs médicaux totaux et le nombre de patients accueillis par clinique de médecine familiale. Nous avons aussi étudié les liens entre les effectifs médicaux totaux et le nombre de patients accueillis à la clinique, au service d'urgence et par quart de travail à l'urgence. Nous avons aussi analysé des variables substitutives de l'intensité du travail, y compris le nombre de patients hospitalisés, le nombre d'évacuations sanitaires par quart de travail à l'urgence et le nombre de quarts de travail à l'urgence par médecin. Nous avons procédé à une analyse graphique exploratoire suivie d'une analyse de régression linéaire portant sur les liens d'intérêt.

Résultats et conclusion : En période de réduction des effectifs, les médecins ont accueilli plus de patients par clinique et par quart à l'urgence, en dépit de l'absence d'incitations financières. L'étude démontre aussi clairement l'intensité accrue de la charge de travail des médecins ruraux en période de pénurie d'effectifs, comme l'indiquent le nombre accru de quarts à l'urgence, le nombre accru d'évacuations sanitaires par quart à l'urgence, et la non-diminution du nombre de patients hospitalisés. Ces résultats démontrent que des efforts continus de recrutement et de rétention s'imposent dans les régions rurales et éloignées afin d'y assurer suffisamment d'effectifs médicaux pour éviter l'épuisement.

Introduction

The role that physician payment systems play in physician behaviour has been the subject of debate for many years.[1] Some theorize that in the absence of economic incentives, the number of patients seen and the level of productivity decline.[2-4] Others suggest that moving away from fee-for-service (FFS) payments enhances quality of care.[3,5] On the whole, most studies have concluded that there are only small differences in physician behaviour that can be attributed to changes in payment systems.[1,3,6-9]

Alternative (non-fee-for-service) payment plans have become increasingly popular in rural and remote areas of Canada over the past decade. They have been seen as tools to attract physicians to underserviced areas where patient volumes may make FFS practice less financially attractive.[7,10,11] Some international literature has looked at this issue and suggested that non-FFS payment systems are the best option for some rural or remote settings.[12]

In Canada, there is a limited amount of published literature on the impact of such alternative payment plans on physician practice patterns.[11,13-15] One major study of an academic health sciences centre showed that payment systems had no impact on the number and variety of surgical procedures provided to patients.[13] The only published study from a rural or remote location was from the Northwest Territories and it found that, following the recruitment of salaried physicians into the area, FFS physicians increased their service intensity, billing intensity and propensity to recall patients. This may represent an effort to provide more preventive care, maintain incomes or redistribute clinical responsibilities.[16] There were no published studies in the Canadian or international literature on the response of non-FFS physicians to acute increases in demand. This study investigated the relationships between staffing levels and service provision to determine

what changes occur when there are acute shortages of physicians and whether payment method affects these relationships.

Methods

Setting

The Weeneebayko Health Ahtuskaywin (WHA) is an Aboriginal regional health authority that administers a regional hospital and all physician services in a large remote region on the west coast of James Bay. As in many remote communities, recruitment and retention of medical staff is an ongoing process. As a result, there are periods of acute shortage, periods of relative stability and periods when much of the care is provided by locum physicians. At the time of the study they had a designated complement of 10 full-time-equivalent (FTE) family physicians. The physicians were all paid on a non-FFS basis. In this alternate payment plan a block monthly fee was provided for a fixed set of clinical services. These included two 12-hour emergency department (ED) shifts and up to 6 family medicine or urgent care clinics per week (which could be either at the family medicine clinic located in the local hospital or in a number of outlying communities), inpatient care, obstetrics, participation in hospital administration and teaching of residents and medical students. Each half-day clinic would include approximately 3 hours of direct patient bookings and the associated time to complete paperwork.

The hospital board set priorities for staffing of the hospital such that maintaining services for inpatients and coverage of the ED took precedence over all other services when there were staffing shortages. Daytime ED shifts were counted as "clinics" for scheduling purposes, and physicians who had worked the previous 12-hour ED night shift were restricted from working in clinic or the ED the following day (but could work the next night). These limitations meant that the actual number of clinics (outside of acute care) provided per physician per week varied with staffing levels. Additional ED shifts were remunerated at an hourly sessional rate, and additional clinics were remunerated at a fixed dollar sessional rate per half day worked.

Patient population

The patient population served is predominantly Aboriginal and includes a significant proportion of patients whose first language is Cree. Many suffer from diabetes and its related complications, and are medically complex. Clinic bookings reflect the needs of the patient population; many patients require appointments of 30 minutes or longer. There were neither incentives for increased patient volumes nor disincentives for low patient volumes in any setting (clinic/ED/inpatients/obstetrics) in the service agreements assigned by physicians entering the alternate payment plan.

Data collection

The medical activity report database for the calendar period Jan. 1, 1999, to Dec. 31, 2002, was used to investigate relationships between staffing levels and service provision. The primary goal was to determine if, in the absence of financial incentives, there is an increase in activity when there is an acute increase in demand due to a shortage of physicians. As additional worked clinics/shifts are compensated, the unit of analysis will be patients seen per clinic scheduled. We also looked at the relationships between total physician staffing levels and the total number of patients seen in clinic, in the ED, and as hospital inpatients, the number of patients seen per ED shift, and the number of call shifts per physician over the 4-year period.

Data analysis

Data were transferred from the existing Excel format spreadsheet into Stata Version 8 statistical software using Stat-Transfer version 7. An exploratory graphical analysis of the data set was conducted first. Relationships of interest following this preliminary analysis

were examined by means of linear regression models. Only summary data were used in the analysis. No data specific to an individual doctor were provided or reviewed.

This project was reviewed and approved by the research ethics boards of Queen's University, Kingston, Ont., and the WHA. In keeping with Ownership, Control, Access and Possession (OCAP) principles,[17] data ownership remains with the WHA and all files will be transferred back to them for secure storage following the completion of the study and publication of results. Preliminary results and a draft copy of this publication were shared with the WHA for review and comment before submission.

Results

Figure 1 and Figure 2 describe the relationships between staffing levels and the number of patients seen in the family medicine clinic. As staffing levels fall, the number of patients seen per half-day family medicine clinic rises ($r^2 = 0.63$, $p = 0.0003$) and the total number of patients seen falls ($r^2 = 0.39$, $p = 0.01$). Figure 3 and Figure 4 describe activity levels in the ED. The ED patient data are an amalgamation of ED and urgent care clinics. Regardless of staffing levels, the number of emergency shifts remains constant (2 per day) but urgent care clinics are cancelled if staffing is not available. The total number of patients seen in the ED does not vary with staffing level ($r^2 = 0.02$, $p = 0.5$), but the number of patients seen per ED shift increases somewhat ($r^2 = 0.33$, $p = 0.02$) as physician numbers drop. This is because the urgent care clinic patients are now seen by the physician covering the ED. As expected, the number of call shifts per physician must increase as physician numbers fall (Fig. 5, $r^2 = 0.97$, $p = 0.00001$). During the study period, the number of inpatients at WHA did not show any relationship to physician staffing levels (Fig. 6, $r^2 = 0.05$, $p = 0.43$). Figure 7 shows the relationship between the number of medevacs in and out of WHA per ED shift and the total FTE physicians. It can be seen that total medevacs in and out of WHA per ED shift increased slightly with a decrease in physician staffing levels ($r^2 = 0.2848$, $p = 0.03$).

Discussion

This study describes physician response to acute increases in demand for service in the absence of financial incentives. The measures described previously can be grouped into 2 broad categories.

1. Measures for which there are financial incentives for additional work. That is to say, extra ED shifts/extra clinics are remunerated: the base agreement dictates that a certain number of ED shifts be done. Since ED shifts count as "clinics" and there is additional pay for additional ED shifts, there is, in effect, a "double payment" since there is no clawback for cancelled clinics replaced by ED shifts.
2. Measures for which there are no financial incentives, which can further be divided into measures of patient volume (patients per clinic/ED shift) and acuity (inpatient numbers, numbers of medevacs).

Although financial incentives were available to physicians for working additional clinics, as described above, this was generally not logistically possible when there were staffing shortages due to the scheduling protocols (board priorities, rules on working after a night shift) so this was rarely done, leaving the number of ED shifts worked as the primary measure for which incentives existed. This measure was the most tightly associated with staffing levels. This may not, however, be purely related to the fact that it is remunerated, but also due to the reality that ED coverage was considered essential and was always provided 24/7 regardless of staffing level.

For all of the measures of increased workload for which there were not financial incentives, increased outputs per physician were noted when staffing levels were decreased. The degree to which they increased varied, and the associations were not as strong as for the

number of ED shifts worked, but nonetheless were statistically significant. The increase in the number of medevacs per ED shift noted when staffing levels were decreased is likely attributable to the reduced access to physician clinics in the outlying communities served by the physicians based in Moose Factory, Ont.

This study also raises the issue of physician burn-out in rural and remote locations. The physicians increased their workload to meet the needs of the community by increasing patient volumes per unit time in both the clinic and the ED. The average level of intensity of work in their practice also increased, as they maintained care levels for hospital inpatients (which meant that each individual physician carried a larger inpatient load), worked more ED shifts and dealt with larger numbers of acutely ill patients requiring medevacs. If this becomes too much strain, it does not appear that decreasing patient load is a realistic option; the only options available are for the physician to leave the community or for the community to recruit more doctors. This further emphasizes the importance of ongoing efforts to recruit and retain physicians in these communities.

Limitations

The limitations of this study need to be acknowledged. First, WHA is an isolated community; the results of this study would apply only to a closed system where no neighbouring communities are available to provide service to patients. Second, it seems possible that over a short period of time physicians would be able to adapt and increase their workload. However, this could lead to burnout and decreased productivity over the long-term. Third, the personality traits of the physicians attracted to practising medicine in a remote location such as WHA may contribute to the altruism demonstrated by increasing workloads in the absence of financial incentives. This may not be a universal response of all personalities or specialties, but mirrors the experiences described anecdotally by other physicians working in similar settings.

Conclusion

During periods of acute increases in demand, physicians feel an obligation to increase patient load, both in terms of numbers and level of intensity, even in the absence of financial incentives. This is contrary to the criticism of non-FFS funding plans stating that financial incentives are essential if physicians are to respond to increases in demand for services. Our evidence suggests that this concern does not apply to short-term variations in demand due to variations in staffing levels, and should therefore not be considered an impediment to the implementation of non-FFS funding plans for rural and remote communities. This also highlights the need for ongoing recruitment and retention activities if burnout of existing physician staff is to be prevented.

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This article has been peer reviewed.

Potential conflict of interest: The principal investigator was the Chief of Staff of the Weeneebayko General Hospital and an ex-officio member of the Weeneebayko Health Ahtuskaywin (WHA) Board from 1999 to 2003. He was also one of the permanent full-time physicians included in the study. He is currently a paid consultant for First Nations and Inuit Health Branch, Ontario Region, one of the funders of the WHA.

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Survey of rural family physician—obstetricians in Southwestern Ontario

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Introduction: The objectives of this paper are 1) to analyze the characteristics of rural physicians who currently practise obstetrics, their training background and the environment in which they work and 2) to develop strategies to sustain rural obstetrical services.

Methods: Information was gathered using both a survey and brief individual interviews.

Participants: A survey was sent to 56 family physicians who currently practise obstetrics, as well as those who had stopped within the past 2 years, in the Southwestern Ontario communities of Clinton, Goderich, Hanover, Kincardine, Markdale, Mount Forest, Palmerston, Walkerton, Wiarton and Wingham.

Results: Forty-four physicians responded to the survey. Results indicate that current obstetrical training programs are lacking in the following areas: the provision of positive role models/mentors, rural placements, experience in complex decision-making, and instilling confidence in graduates. Physicians appear to be internally motivated to practise obstetrics, claiming it is important to their professional goals and personal values. Support systems of colleagues, nursing staff, administration, family and friends, were identified as vital components of a successful obstetrical program.

Conclusion: Educators are advised to identify students with an internal motivation to practise rural obstetrics early in their medical training and provide them with mentors, rural placements, confidence and experience in complex decision-making.

Introduction : Ce document vise à 1) analyser les caractéristiques des médecins ruraux qui pratiquent actuellement l'obstétrique, leur formation et leur environnement de travail et à 2) élaborer des stratégies afin de maintenir les services obstétriques en milieu rural.

Méthodes : On a réuni de l'information en distribuant un questionnaire et en procédant à de brèves entrevues individuelles.

Participants : On a envoyé un questionnaire à 56 médecins de famille qui pratiquent

actuellement l'obstétrique, ainsi qu'à ceux qui ont cessé de le faire depuis deux ans, dans les localités suivantes du sud-ouest de l'Ontario : Clinton, Goderich, Hanover, Kincardine, Markdale, Mount Forest, Palmerston, Walkerton, Wiarton et Wingham.

Résultats : Quarante-quatre médecins ont répondu au sondage. Les résultats indiquent que les programmes courants de formation en obstétrique présentent des lacunes dans les domaines suivants : prestation de services d'exemples ou de mentors positifs, stages en milieu rural, expérience de la prise de décisions complexes et instillation de la confiance chez les diplômés. Les médecins semblent avoir la motivation personnelle nécessaire pour pratiquer l'obstétrique, affirmant que c'est important pour leurs objectifs professionnels et leurs valeurs personnelles. Les systèmes d'entraide constitués de collègues, de membres du personnel infirmier, de l'administration, de la famille et des amis sont considérés comme des éléments vitaux d'un programme d'obstétrique couronné de succès.

Conclusion : On conseille aux éducateurs de repérer dès le début de leur formation en médecine les étudiants qui ont la motivation personnelle nécessaire pour pratiquer l'obstétrique en milieu rural et de leur fournir des mentors, de leur organiser des stages en milieu rural, de leur permettre de prendre confiance en eux et de leur apprendre à prendre des décisions complexes.

Introduction

In 2000—01, 88% of Canadian mothers surveyed confirmed that they had received prenatal care from physicians.[1] Although family physicians (FPs) reportedly attended an increased number of deliveries in 2000 (an average of 41 deliveries compared with 30 in 1986), data suggest that FPs' share of deliveries has fallen (attending 39% of vaginal births in 2000 compared with 44% in 1996).[1] This reflects the fact that fewer FPs are providing obstetrical services (OBS). For example, 31% of FPs billed for OBS in 1989 and only 19% in 1999.[1]

Rural access to OBS is important: in Canada, 9.5% (28 755) of deliveries and 6.9% (4292) of cesarean sections occurred in rural settings in 1995—96.[2] Unfortunately, few physicians provide OBS in rural areas: only 9.1% of physicians practised in rural communities in 2001 and, of these, only 35% provided intrapartum care.[3] In Ontario, that number is just 25%.[2] Two decades ago, the inclusion rate for obstetrics was 85%.[4] However, it is interesting to note that a 2001 study revealed that rural FPs were more likely to include obstetrics in their practice (27%) than urban FPs (11%).[1]

OBS are in continual decline in rural communities. A survey of northern Ontario community hospitals revealed that only 3 of 39 communities had no OBS in 1981; however, by 1999, 15 of the 39 communities studied did not provide OBS.[1] The decline in obstetric providers has been examined repeatedly, and, consistently, rural physicians are shown to lack support from a variety of levels.[5-12] These include anesthetic, surgical, and nursing backup, time off, skills training, practice structure, and financial compensation. Suggestions for sustaining rural OBS frequently call for changes in the above parameters. For example, a 2001 study revealed that physicians who are members of group practices are more apt to practise obstetrics in comparison to those working in individual practices (23% v. 11%).[1]

The consequences of inadequate rural obstetrical care have also been studied extensively. Communities that do not offer OBS have lower birth volumes and worse perinatal outcomes (measured by infant mortality, complication rate, cost, and satisfaction).[13-16] Rates of physician loss are also higher in these areas.[5,14,17] Canada's FPs are also getting older: a 2001 study revealed that 46% of all FPs in Canada are over the age of 45 and only 4% were under the age of 30.[1] Additionally, despite initial intentions to practise obstetrics, fewer graduates actually go on to do so. According to a 2002 study, 52% of residents surveyed initially planned to practise obstetrics, however, by the completion of their training the percentage had fallen to 17%.[1]

The present study seeks to understand the characteristics of rural physicians who currently practise obstetrics, their training background and the environment in which they work in the hope that it may help us understand how to anticipate and sustain the services required for successful obstetric care in rural areas.

Methods

Information for this study was gathered using 2 modes: a survey and brief individual interviews. Survey questions obtained demographic data and information on physicians' educational experiences, professional obstetrics experiences, personal attitudes toward practising obstetrics, and concerns regarding the future of obstetrics. There were 78 questions, including 1 short answer question, 2 questions in which respondents were asked to rank disadvantages and advantages associated with obstetrics, 7 fill-in-the-blank questions, 19 multiple-choice questions, and 49 questions to be answered using various adaptations of a 5-point Likert scale. A draft of the survey was pre-tested on physicians not involved in our study in order to examine the clarity and effectiveness of the survey's design and content.

Questions that used a Likert scale were examined by grouping the ends of the scale; that is, answers 1 and 2 in one group, answers 4 and 5 in another, and answer 3 in the third group. These 3 groups could then be compared. Due to the small sample size, we proposed that differences >75% among these 3 groups be considered highly significant.

In July 2002, surveys were sent to all FPs who currently practised obstetrics, as well as those who had stopped within the past 2 years, located in the following rural Southwestern Ontario communities: Clinton, Goderich, Hanover, Kincardine, Markdale, Mount Forest, Palmerston, Walkerton, Wiarton and Wingham. Fifty-six surveys were distributed. Before the survey was mailed, a letter was sent to all study participants; it notified them of the forthcoming survey, provided an explanation of the survey and information on response submission. Physicians were given 1 month to complete the survey; those who had not done so by this time received 2 subsequent letters in 2-week intervals requesting their survey results.

Data on the professional environment of each hospital were obtained from the Chief of Staff of Obstetrics at each hospital. Short, one-to-one telephone interviews were subsequently obtained by our research assistant (A.V.).

Results

Forty-four completed questionnaires were returned; this represented a 78% response rate.

Based on data from various sources,[3,18,19] our surveyed population is estimated to represent 20% of all rural physicians practising obstetrics in Ontario and therefore is responsible for approximately 14% of the deliveries performed by rural Ontario physicians in 2001. Between 2000—02, the total body of physicians providing OBS in the area surveyed reported a net gain of 1 physician (Fig. 1). As of July 2002, 49 (37%) of the surveyed physicians provided OBS and had performed 843 deliveries in 2001 (Fig. 2).

Hospital demographics

Thirty percent of the 10 hospitals surveyed reported they always had available cesarean section backup, 40% reported they did sometimes, and 30% had none at all. Fifty percent reported they always had available anesthesia backup, 30% sometimes, and 20% had none at all. Seventy percent used a shared on-call system for OBS and 10% reported they did sometimes. Fifty percent offered on-call stipends (Fig. 3). The majority of hospitals are within 1 hour's driving time of 24/7 obstetrical consultation facilities.

Overview of physician characteristics

Of the respondents, 32/44 (72.2%) were male. The average age of respondents was 44.3 years. Fifty-nine percent were age ≥46 (Fig. 4). The majority of those surveyed had a life partner (79.5%). Those who did not, were equally represented by both sexes. The career demands of respondents' life partners varied; 27.3% worked full time, 42.4% part time and 30.3% did not work outside the home. Sixty-one percent had an average of 2.6 children still living at home. It is noted that there were no significant differences between male and female survey responses.

Respondents reported an average of 17.7 years since the completion of residency training and an average of 3.1 months of Ob/Gyn training. Many had not received any rural obstetrical experience (57.9%), and those who had, reported an average of 2.2 months of training. Sixty-five percent had received CCFP training, 9.1% were trained in cesarean section and 75% had pursued additional obstetrics training such as ALSO (Advanced Life Support in Obstetrics), ALARM (Advances in Labour and Risk Management) or a 3rd-year residency.

Although respondents' training experiences were variable, only 25%—36% were very satisfied with their program, whether it was tertiary or community based. The same percentage were very satisfied with role modelling and/or their ability to have been involved in complex decision-making around obstetrical issues during their training program.

Respondents' level of confidence after training varied, as did their belief that their training program offered realistic experiences. Their opinions on whether medicolegal issues were well taught and whether they learned the art of balancing obstetrics with a full rural practice were variable.

In relation to their current obstetrical environment, 74% reported some experience with a shared-call system. Their opinions on the value of on-call stipends were not consistent. In order for their obstetrics program to continue, 92% reported that they will need between 3 and 6 doctors. In terms of their attitudes toward change in their professional environment, 48% reported that they had been involved in some form of a new obstetrical program in their own hospital over the past 5 years. All of the 48% felt the programs had been successful in one form or another, and 70% reported that the success was achieved with a reasonable amount of risk and commitment.

In terms of personal support systems, 46% of respondents had a life partner or a colleague with whom they can share their problems and frustrations. However, 7.3% stated they have no one with whom to share problems or concerns. In general, the surveyed physicians were more worried about stress and malpractice issues than finances. The majority of respondents continue to practise obstetrics out of a desire to contribute to their community.

Significant findings

Of the 78 questions, 11 produced responses where 75% or more of respondents were in agreement and thus were considered highly significant. In the section pertaining to training, 88% identified the importance of role models (Fig. 5). Eighty-two percent said that training in community hospitals was very important (Fig. 5). Eighty-two percent also commented on the importance of being involved in complex decision-making during their residency training and not just being involved in the process of "catching a baby" (Fig. 5). Although respondents acknowledged the importance of these training features, many noted that their training program did not provide adequate experience in the aforementioned areas.

With respect to their actual practice experience, 4 issues were reported as being highly significant. Ninety-two percent agreed on the importance of well trained obstetrical nursing staff (Fig. 5). Eighty-six percent depended on understanding and supportive colleagues, and 80% supported some concept of shared call (Fig. 5). Finally, 78% reported that they have

supportive, understanding colleagues.

Why are respondents delivering babies?

Ninety-five percent reported that obstetrics remains very important to their professional goals. Additionally, 88% reported that practising obstetrics is very important to their own personal values and ethics.

What have they learned from the past and what do they project about the future?

Unfortunately, 78% of physicians surveyed reported that practice demands outside of obstetrics have increased over the last 5 years (Fig. 6). Sadly, 82% of respondents predict that the future of obstetrics in rural communities will be significantly worse in 5 years (Fig. 7).

Discussion

Data collected regarding respondents' age and gender did not reveal a significant trend. However, in comparison to national data collected in 2001, participants in the current study included a higher volume of physicians age ≥46 (59%) as well as a smaller number of physicians age ≤35 (13.7%). National data reported almost 30% of Canadian physicians were age ≥45, and almost 25% were age ≤35.[3] Also, data provided little correlation in relation to respondent's marital status, the professional demands of their partners, their number of children, and their practice of obstetrics.

The majority of respondents agreed that their obstetrical training was inadequate on many levels. Many of the educational shortcomings identified by respondents were consistent with those mentioned in Godwin and colleagues' 2002 study.[20] According to that study, physicians who have recently graduated are less likely to include obstetrics in their practice. This may be due to insufficient exposure and skill development because residents who receive their obstetrical training in tertiary care centres report their training as inadequate for independent practice in rural environments.[20]

Data collected regarding the availability and importance of positive role models during obstetrical training is unique to the present study. Although 88% of respondents noted that role models are important during obstetrical training, only 23%—36% were satisfied with the role models available during their training experience. Such data indicate that increased exposure to positive FP role models during obstetrical training would be beneficial to students.

More involvement in complex decisions and greater experience in rural environments may increase confidence levels and present rural medicine as a more attractive alternative. Finally, if recent studies suggest that many students are making decisions pertaining to obstetrics early in their medical training,[1] educators are advised to target this cohort of students early in order to offer them increased support, training and experience.

In terms of the current level of community commitment among FPs, it is interesting to consider that nearly 66% of FPs in the Yukon and Northwest Territories provided intrapartum care in comparison to only 12% of Ontario FPs in 2001.[3] Future research may serve to determine if such divergent percentiles are related to a differing sense of community, societal values, or lifestyle issues.

Factors associated with successful and sustainable obstetric care include reliable anesthetic, surgical, and nursing backup (correlates with higher birth volumes and lower rates of physician loss), and physician groups who share obstetric call or entire obstetric practices.[12]

Limitations

It is understood that this study has some inherent weaknesses. First, sample size will always be small as reflects the decline (query the demise) of the rural family physician—obstetrician. Second, this survey presents only a "point-in-time," and extrapolations to past and future are opinion only. No attempt was made to survey physicians in those communities whose doctors did not deliver babies. Finally, we acknowledge that this is a study of rural family physician—obstetricians, who may differ from their colleagues who practise in the remote communities of Canada.

Conclusion

Physicians are internally motivated to practise obstetrics and consider it to be in accordance with their personal values and professional goals. As a result, educators are advised to identify such students early in their medical training and provide them with mentors, rural placements, experience in complex decision-making, and to strive to instill confidence within their graduates.

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Competing interests: None declared.

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Shared geriatric mental health care in a rural community

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Introduction: A pilot project in shared mental health care was initiated to explore opportunities to increase the capacity of the rural primary care system as a resource for older people with mental health needs. This was done within a framework for the delivery of best practices in geriatric mental health outreach.

Methods: Shared-care strategies combining education and clinical consultation between mentor psychiatrists and family physicians were implemented and then evaluated after one year to identify key factors in the success of approaches to shared mental health care for older people in a rural setting.

Results: Results provided new insights into shared care between primary care and specialty geriatric mental health services, rural geriatric mental health service delivery, developmental phases in service learning approaches, and building knowledge networks to promote continuing best practices.

Conclusion: The results from the project's process evaluation have been integrated into the development of a permanent shared geriatric mental health care service for the rural setting. Preparation for an outcome evaluation that will focus on the impact on patient care has also been initiated.

Introduction : On a lancé un projet pilote de soins de santé mentale partagés afin d'explorer la possibilité d'accroître la capacité du système rural de soins primaires comme ressource pour les personnes âgées ayant besoin de services de santé mentale. Le projet s'est déroulé dans le contexte d'un cadre de pratiques exemplaires pour l'extension des services de santé mentale en gériatrie.

Méthodes : On a mis en œuvre des stratégies de soins partagés conjuguant l'éducation et la consultation clinique entre psychiatres mentors et médecins de famille; on a évalué les stratégies après un an pour déterminer les facteurs clés de la réussite d'une démarche de

soins de santé mentale partagés pour personnes âgées en milieu rural.

Résultats : Les résultats ont dégagé de nouvelles perspectives sur les soins partagés entre les soins primaires et les soins spécialisés en santé mentale gériatrique, la prestation de services de santé mentale gériatrique en milieu rural, les stades du développement des méthodes d'apprentissage du service et la création de réseaux de connaissances afin de promouvoir l'implantation suivie des pratiques exemplaires.

Conclusion : On a intégré les résultats de l'évaluation de la démarche du projet dans l'élaboration d'un service permanent de soins de santé mentale gériatriques partagés en milieu rural. On a aussi entrepris de préparer une évaluation des résultats qui portera principalement sur l'incidence sur les soins aux patients.

Introduction

The reform of mental health services in Ontario has been guided by *Putting People First*[1] and the *Policy Framework and Implementation Guidelines for Mental Health/Long Term Care*.[2] Specifications for geriatric mental health services include the requirement for a multi-level response to meet the needs of a diverse older population, as is more recently highlighted in *Specialized Geriatric Mental Health Outreach Teams: Program Policy and Accountability Framework*.[3] The Framework clearly identifies the roles of specialized teams in providing 3 major functions: (i) direct shared care; (ii) ed-ucation; and (iii) establishing service linkages. The long-term care and community care sectors at both local and regional levels are also expected to increase their service capacity with specialty outreach teams. These teams target high-risk individuals within the continuum of geriatric services. Although models can vary, they are typically interdisciplinary teams made up of geriatric psychiatry, nursing, social work and occupational therapy. Their work is outreach in that they are working with and working in other sectors of care — primary care, hospital care, nursing home care, community care — but funded by the mental health sector. Team members, other than psychiatrists, are sometimes referred to as case managers. These teams are considered an essential link within the continuum of care, as are clinicians authorized to assume these roles that are aimed at the promotion of effective shared mental health care.[4]

Recent literature on shared mental health care suggests that if care that is focused on the community is to be achieved, then increased collaboration between family physicians (FPs) and psychiatrists is paramount.[3,5,6] Draper[7] suggests the consultation-liaison versus consultation-only model is superior in terms of developing and maintaining shared-care working relationships between psychiatrists and FPs. According to Craven and Bland,[5] who have reviewed models of shared mental health care, consultation-liaison involves regular visits by the psychiatrist to the primary care physician's office, including direct patient assessment and opportunities for case discussions and advice about non-referred patients and other educational opportunities. They identify several advantages, such as enhanced face-to-face communication, skill transfer, collaborative treatment planning, integrated physical and mental health care, and increased continuity of care.[5] Similarly, an emphasis on implementing best practices within mental health care highlights the need for newer service and education delivery models that link FPs with mental health clinicians.[8,9] More recent studies indicate increased effectiveness in the mental health care for older people when specialty case managers, supported by geriatric psychiatrists, are working onsite at the FP's office or in his or her patient's home alongside family practitioners.[10] It can include patient assessment, consultation with FPs or even joint patient assessments.

Older people with mental health problems residing in rural communities pose unique challenges for community-based providers. Although there is a growing body of evidence demonstrating the effectiveness of outreach geriatric mental health services,[11–14] the literature rarely addresses the success of models of delivery in rural or remote communities. It has been identified, however, that the preferred model of geriatric mental health service delivery for underserviced areas is interdisciplinary outreach teams.[15]

Figures suggest that 1 in 5 individuals over the age of 65 have a mental health disorder.[16] In Canada, 8% of individuals aged 65 and older are affected by dementia,[17] and 2%–4% of those living in the community and 15%–20% of those living in institutions experience serious clinical depression.[18] Older people in rural communities are as likely to become mentally ill as their urban counterparts.[19] In rural settings, however, there is a significant gap between need and the utilization of mental health services.[20,21]

In terms of characterizing the rural context, the literature points to a number of issues that have an impact on mental health care. Notably, the social ecology in the rural setting is vastly different from that of the urban. The rural value system has been described as more individualistic or self-reliant.[22] Communities exist with limited access to health and social care or trained professionals.[21] Poverty, inadequate housing, and transportation problems are realities for many inhabitants.[22,23] Therefore, simply replicating an urban model of service delivery would not reflect adequately the rural culture.[21–24]

Methods

The project

A rural pilot project in shared geriatric mental health care was initiated with the aim of supporting and developing the capacity of a rural community health centre as a resource for older people with mental health needs. The pilot project was one arm of a larger initiative focusing on enhancing the capacity of the primary sector in meeting the needs of older people with complex problems, improving the service linkages between primary care and mental health sectors, and discovering new knowledge in shared mental health care for older people.

The model for this initiative was generated from the literature addressing consultation-liaison services, adult learning, and knowledge exchange. Conceptually, the project's development was underpinned by: (i) new information that must be relevant to a learner's values, experience and work context;[25–28] (ii) the effectiveness of using multiple strategies to communicate information;[27] (iii) a lack of knowledge regarding the experiences of specialists in a shared-care exchange;[29] (iv) the need for increased collaboration and timely communication between psychiatrists and FPs;[5,6,30,31] and (v) implementing best practices in geriatric mental health outreach as facilitated by a process consisting of (a) an *awareness* of emerging new knowledge, (b) the *accessibility* of effective methods of shared care, (c) education and systems development, (d) *action* based on methods and context, and (e) the *accumulation* of new knowledge through evaluation and dissemination.[4]

The implementation process was aimed to coincide with the development of a new rural specialty geriatric mental health outreach team. It was anticipated that the project would not only act as a vehicle to guide the team's development and inform its members, but also project outcomes could be sustained through new service activities.

The project was initiated during an educational day in geriatric psychiatry held for FPs in a region of southeastern Ontario. FPs who agreed to participate in the project were offered a menu of shared care services that could be tailored to their practice situation. Among the 30 physicians from across the region who participated in the educational day, 4 FPs from a rural community health centre agreed to take part. Their previous experience with regional geriatric psychiatric services was predominately referrals for inpatient assessment and treatment.

Community health centre

The rural Community Health Centre is located in a township covering 897 km^2 in central-eastern Ontario. The closest city (pop.<50 000) is located 35 km from the largest village in the township. According to Statistics Canada,[32] the mainly Canadian-born and English-

speaking population is 5612. The median age is 41.9 years, with 1605 individuals over the age of 55. The average household yearly income is $38 432, almost $15 000 less than the average across Ontario. The unemployment rate is 8.8% (6.7% across Ontario).

Mentors

The Community Health Centre was assigned 2 geriatric urban-based psychiatrists who would facilitate the project's implementation and act as mentors. The mentorship program involved linking each primary care physician with a geriatric psychiatrist. The mentor was available via telephone to provide indirect advice, as well as to identify particular resources that could assist the clinician in his or her daily practice. The intention here was to support clinical decision-making, and to enhance accessibility to, and positive interaction with, specialist services.

Critical to enabling the pilot activities to be implemented from the geriatric psychiatrists' point of view was an alternate funding formula provided to them (i.e., salary-based and not a fee-for-service arrangement). The mentors and an experienced specialist geriatric mental health case manager held 2 initial planning meetings at the Centre to further assess readiness to participate in the pilot project, establish learning and service needs, and to explore different approaches to shared mental health care. Links with other stakeholders in the local mental health services and services for older people were established to facilitate the identification of needs, and project implementation. It was eventually agreed that in addition to the mentorship program, monthly educational sessions would be held at the Centre, and FPs could access Timely Information for Primary Care Services (TIPS), shared patient visits between the psychiatrist and the FP, and on-site consultation services between the psychiatrist and the FP.

Evaluation methodology

A process evaluation was completed after 1 year to assess the delivery and efficiency of the project. The purpose of a process evaluation was to identify shared-care activities and other factors that were contributing to the project's aims, rather than looking at the impact or effectiveness more familiar in outcome evaluations. Similar to an outcome evaluation, the process evaluation involved the systematic collection and analysis of data to verify specific evaluation questions.[33] An outcome evaluation examining impact on quality of care was also developed to take place 2 years after the implementation of the project.

Project records were examined to capture concrete indicators of performance. Some of these documents included meeting minutes (e.g., issues discussed), attendance and evaluations for educational sessions, and consultation, TIPS and mentorship records (e.g., number of referrals, presenting problems, response times). Interviews were also conducted with the 2 psychiatrists and the 4 FPs. The aim of the interviews was to collect more in-depth knowledge about various shared care strategies and the complexities and/or successes of implementing shared mental health care. These data were analyzed using thematic content analysis, which is an articulated method of summarizing and classifying data within a thematic framework.[34]

Results

Consultation

Over an 8-month period, 24 referrals for direct on-site consultation were received. The majority (13) of the patients were female, and the average age 79 (2 <65; 10 >80). The large number of individuals over the age of 80 most likely reflected the growing number of very old people, and the increased likelihood of physical and mental health problems in that age group. The most frequent presenting problem was that of cognitive impairment with behavioural or co-morbid psychiatric disorders. These problems are consistent with the target population for specialty outreach geriatric mental health services as outlined by the Ontario Ministry of Health and Long-term Care.[3,35]

Reports from the specialty and primary care providers reflected, for the most part, the benefits of this model of consultation. The specialists stated that each patient consultation was an opportunity to discuss mental health problems and interventions. It was also reported to be common practice for the consultant to provide literature pertaining to a topic area relevant to a particular care, and to give feedback to the referring physician to reinforce effective clinical practice. The importance of the latter practice has been highlighted in the literature as important for changing long-held patterns of professional behaviour.[36] It also emerged that the nurse practitioner at the Community Health Centre had accompanied the specialists on home visit assessments for learning purposes. This was viewed as positive given the significant clinical role nurse practitioners may assume in underserviced rural areas.

The primary care clinicians concurred with the above statements and indicated they were pleased with these services, particularly because the responses were timely. For example, one individual said *"The psychiatric consultations are accessible; staff are approachable; advice is practical."*

One primary care clinician spoke of the importance of the consultee as the "situational expert,' thus reinforcing this consultation model as a bilateral exchange of knowledge. This individual spoke of how the "family practice' in the rural setting *"really knows the patient," "recognizes overall changes"* given their familiarity with them, and knows a patient's "*overall needs."* This clinician also said that it was important for the consultant to ask, for example, *"What do you think? What is your opinion?"* Similarly, he stated that the key to the success of the consultation process was to ensure that the consultee was recognized as an expert in his or her own right.

Mentorship

Project records indicated the average number of times each FP consulted with one of the psychiatrists was once per month. Advice was more frequently sought when the primary care physician was dealing with an older patient with multiple complex problems (e.g., physical, pharmacological, social, and legal). All physicians viewed mentoring as highly valuable and a preferred method to access advice. This direct method of contact was viewed by the primary care physicians as fostering an exchange sufficient in depth and length to allow them to confidently continue their own clinical interventions that they would not be able to support otherwise.

Primary care physicians stated that contact with a mentor only occurred following consultation with an on-site colleague. For example, when further specialist information was required contact would be initiated. This ensured that the mentor's time was spent on complex cases. Another primary care clinician suggested that this service was particularly helpful simply because they were comfortable making contact with their mentor. This same clinician said that this was not the case for many other specialty services, possibly preventing them from managing a patient and necessitating a more complicated process, such as a referral for direct consultation.

A specialist provider indicated that telephone contact was an efficient use of his time — the management of 1 to 2 calls per month was not unreasonable. He also felt that many FPs seemed able to practise more confidently knowing availability was ensured.

Educational sessions

Eight educational sessions were held at the rural practice by one or both of the specialists. Attendance at the sessions included the physicians and the nurse practitioner. On some occasions other local mental health providers were invited to foster service networking (mean attendance, 5). Topics for the sessions were either recommended by the specialist providers from analysis of those cases referred for clinical consultation, or requested from the primary care team. Topics included, for example, cognitive enhancers, depression, alcoholism, competency and interventions with high-risk patients, driving and dementia.

The sessions included a combination of formal lecturing and interactive discussion using case examples. Supplementary educational materials and job aids relevant to the sessions were also developed to ensure on-site literature and practical tools were available for easy reference and use. Periodic evaluations occurred to identify learning needs, preferred learning styles, and ratings to indicate new learning and its relevance to daily practice.

Without exception, primary care participants indicated that participation was contingent on the learning sessions being time that was well spent, given their heavy patient load. A matter such as the day of the week or the time of the day became critical to their success. The approach of presenting a topic area and combining a specific case for discussion was described as effective. The primary care group was particularly satisfied with the convenience of on-site learning, and they commented on the sessions as being both practical and open; the latter feature permitting the introduction of patient problems that might have presented that day or week. Additionally, the *"relaxed atmosphere"* was much appreciated and was indicated as having contributed to learning and sharing. Both a case-based approach to teaching and on-site learning have been highlighted as essential in the adult learning and knowledge exchange literature.

From a specialty perspective, the sessions were effective because the primary care providers were both *"receptive"* and *"interested in learning"*; perhaps confirming the readiness of the primary care group to engage with the project. One specialist remarked the importance of adopting a "*missionary approach — the first teacher is the host."* This not only reinforced the specialist as downplaying the role of expert psychiatrist who would impart knowledge on the less expert FP, but also reinforced a bilateral exchange of knowledge being central within shared care. This specialist also remarked that the sessions were effective and likened them to "*sitting around the kitchen table."* Sitting around the table appeared to capture the open relationship that had evolved between the geriatric mental health specialists and the FPs, and the comfort of learning from one another to improve the care for older people.

Although the expanded group membership in some of these sessions was thought beneficial in terms of community networking, it posed challenges according to both the specialty and primary care providers. The difficulties reported included: (i) tailoring the topic area and level of information to a multidisciplinary team; (ii) ease at which FPs would be open in front of other providers; and (iii) determining how effective a physician-led session for a multidiscipline audience was.

Timely Information for Primary Care Services (TIPS)

TIPS was a service whereby a physician could email or fax a clinical question to a specialist. Within an established period of one week, a response was either emailed or faxed back. The response given was not meant as a substitute for direct consultation, but rather to provide more general information on a topic area (i.e., similar to accessing a textbook reference).

The primary care group suggested they did not use TIPS because they were not prone to use their computers in this fashion. One physician commented that he would much rather access his mentor for advice as this was a quick and easy method of accessing timely information. Notably, these physicians indicated that it was sometimes difficult and time-consuming to write a question that was clear and concise for complex clinical issues. Rather, they wanted direct dialogue to assist in unravelling the patient's situation and in considering the various intervention options.

Shared visits

A shared visit is a service learning approach that involves the FP and psychiatrist jointly assessing a patient with challenging clinical presentations. It provides an opportunity for knowledge exchange and targeted skill development for the FP. It also offers an opportunity for psychiatrists to get "hands-on' experience consulting in the primary care setting, and learn what is required for relevant and effective consultation.

Shared visits were not implemented despite the fact that they were positively regarded from the outset of the project. For all practitioners the explanation for lack of use was the amount of time spent to successfully complete such a visit.

Two of the primary care physicians said that they viewed this as a good learning opportunity, but not a good use of their time. One physician suggested that when he contacted psychiatry for a consultation he was confident that a skilled specialist was required for a specific aspect of the patient's care. He added that he was not interested in learning specific specialist skills, and commented that "*By the time I have referred I have already spent considerable time with the patient and just want a consultation at that point.*" Further feedback identified a critical difference in need and expectation between the specialist and the FP. The specialist interview with the patient was usually 1 hour in length using a set of skills relevant to that time frame. Family practice realities often dictate a much shorter interaction using another set of interviewing and assessment skills. The skills required, therefore, were not specialist skills but those of a family practice approach.

Discussion

The model of consultation adopted for the project was a multilevel approach permitting shared care, education and systems development.[37] This model is also consistent with the more recent accountability framework for specialized geriatric mental health outreach teams developed by the Ministry of Health and Long-term Care.[3] The significant elements of this non-hierarchal model are that there is both an interactive engagement and bilateral exchange of knowledge between consultant and consultee. This bilateral exchange of knowledge is viewed as central in shared care as it recognizes the primary care physicians as situational experts and the consulting physicians as content experts. Complementing this type of consultation service was the model of geriatric mental health outreach services, which attaches a case manager to a consulting psychiatrist. Thus the case manager contributed to the collection of assessment data, as well as providing follow-up specific to intervention plans including engagement with other local resources.

Five strategies focusing on best practices in geriatric mental health outreach were implemented to achieve the shared-care goal. Each strategy is based on the premise of shared care and a bilateral exchange of knowledge between the psychiatrists and FPs in order to facilitate discussions and to access and use information appropriately.[4]

New insights into the following areas emerged from the process evaluation: (1) shared care and knowledge exchange between primary care and specialty geriatric psychiatry; (2) rural geriatric mental health service delivery; and (3) developmental phases in service learning implementation and building knowledge networks.

The use of multiple learning and development strategies was positively reinforced. Not only were different styles of learning among participants evident, but also the continuous process of knowledge exchange to knowledge utilization seemed to be facilitated by the link between various methods of educational development and direct clinical service. The specific strategies that were commonly highlighted as most pertinent for the FP in a rural setting were mentorship, case-based educational sessions and direct on-site consultation. Notably, the central feature of these strategies was the integration of the day-to-day challenges of physician care with ongoing educational opportunities. Despite broader developments in knowledge exchange that places reliance on computer technology, these physicians did not respond as anticipated with TIPS.

Although it was anticipated that the mentorship would be very popular and potentially time consuming for the specialist, project records indicated that average service use was once per month per doctor. There are little research data detailing mentorship utilization rates, however, Rockman and colleagues reported rates of 2–3 per year.[38] Interviews with participants suggested that the combination of clinical consultation with mentorship contributed to a significantly higher use of the service in the rural project.

For the consulting specialist, the importance of recognizing the primary care physician as a situational expert was strengthened. Indeed, the specialists appeared to begin to more fully understand their role as facilitators of dialogue, knowledge discovery and knowledge application. This strengthened the primary care sector's ability to meet the needs of older people with mental health problems as the agreed upon aim.

The project evaluation also reinforced the rural catchment area as distinct from the urban setting. Three features of the rural setting stood out as key for geriatric mental health service development. The Community Health Centre was a "hub' within the community, and central to development and coordination among providers within new development initiatives. The primary care physician's relationship with his or her patient and family was also significant in terms of the extent to which the physician knew patients and was part of their lives. Developing supportive working relationships with this sector was critical if geriatric mental health care services were to achieve their aims. Although subtle, there was also a sense that the culture within the rural setting was more informal. This informal nature was thought to contribute to a sense of trust between individuals and services, ultimately benefiting patient care. This also features in the literature, which suggests the helping network and/or gatekeeper system within the rural setting comprises individuals such as postmen, pharmacists, neighbours, and other non-family members of the community.[20,24,39,40]

The project also offered some reflections regarding the developmental phases in building a geriatric mental health shared care network. Generally speaking, the 5 stages of group development as outlined by Tuckman and Jensen[41] were observed. An awareness of these phases appeared significant in terms of supporting a network's development, maintaining the momentum of project implementation, and maintaining the engagement of participants. In addition, the recognition of these developmental phases can inform project leaders of when to either strategically implement supports to maintain momentum, or when to reframe periods when activities have slowed down as normal group progression. For example, the following phases were identified.

- Early engagement — securing initial commitment to participate, and introducing strategies to implement shared mental health care.
- Maintaining interactive engagement — implementing and tailoring strategies relevant to each physician, developing relationships, and sustaining implementation in response to ongoing feedback.
- Participative evaluation and planning next steps — planning and implementing evaluation approaches to inform next steps in shared care development.
- Modifying and/or expanding shared care strategies — as per evaluation outcomes.

Limitations

The evaluation of this rural shared geriatric mental health care project aimed to provide information about the development of a permanent service for older people with mental health problems. The results are specific to this project only. They are being disseminated to exchange experiences in shared mental health care and service delivery to older people with mental health problems in rural areas, and to demonstrate the role of process evaluation in service development.

Conclusion

Within mental health reform guidelines and with a current emphasis on the delivery of best practices, geriatric shared mental health care services were initiated in a rural setting. Its success thus far has been achieved by the development of a respectful partnership between 2 different cultures of service providers, ease at which specialty services are accessible, the provision of alternative strategies to build capacity to provide geriatric mental health services in the primary care setting, and a continual exchange of knowledge underpinning clinical practice. These elements were developed and implemented within a broader framework to deliver best practices in geriatric mental health outreach. The results also

provide important insights into the development of shared care practices and the reform of primary care across Canada and elsewhere.

With the feedback from the process evaluation, the project has now been integrated into the new rural geriatric outreach team's service delivery plan and includes 1 salaried psychiatrist and 5.5 case managers. Further research on rural geriatric shared mental health care is planned for the near future to assess the impact on patient outcomes.

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The occasional shoulder dystocia

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Introduction

You are the only physician in a rural hospital on a Sunday afternoon when Mrs. Smith presents. She's a G5P4 with precipitous births, so it is going to be you who will be delivering. She's now crowning, but after the head is delivered it "turtles" and nothing else happens (Fig. 1). The shoulder is stuck!

Although cases of shoulder dystocia are associated with increased risk of fetal injury or death, reduction of the impacted shoulder can be effected calmly, by a series of manoeuvres, and with excellent outcomes.

If you are in a hurry, skip to the bolded parts.

In 1%–2% of pregnancies the delivery of the body is delayed for more than a minute after delivery of the head.[1,2] Risk factors for shoulder dystocia include previous shoulder dystocia, instrumental delivery, large babies, small mums, maternal diabetes, and increased parity. However, these risk factors are poor predictors since over 80% of "high risk" women deliver normally.[1] Many, if not most, shoulder dystocias occur in "low risk" pregnancies with normal sized babies.[3,4]

When the shoulder is stuck, time may be of the essence. If fetal blood flow is compromised pH will drop as much as 0.14 per minute.[5] However, there is usually plenty of time to do what needs to be done. In a series of 134 shoulder dystocias, all were delivered in under 8 minutes and less than 2% had a pH under 7.00.[2]

Shoulder Dystocia Procedure

Step 1

The first thing to do is to call for help. Most rural doctors should be able to get additional nursing or medical staff to help with the delivery of the infant.

Step 2

Don't apply traction to the fetal head as this will just jam the shoulders further and may increase the risk of fetal brachial plexus injury.[6] What you should do next is a matter of personal preference. The order of manoeuvres is not as important as the ability to recognize, in 30–60 seconds, that the manoeuvre is not working and to proceed to try something else.

Procedure Summary

- Call for help
- Don't pull
- Try something for 60 seconds and move on
- Hyperflex mum's thighs
- Suprapubic pressure on fetal scapula
- Mum on all fours
- Intravaginal pressure on fetal scapula
- Woods' screw
- Sweep posterior arm out
- Symphysiotomy or Zavanelli

Step 3

The McRoberts' manoeuvre is simple, and a good place to start (Fig. 2). Have your assistant(s) help the mother hyperflex her thighs onto her abdomen to rotate her pelvis. This improves the useful diameter of the pelvis. This manoeuvre alone may be effective in 42% of cases.[7]

Step 4

Simple addition of suprapubic pressure delivered laterally against the fetal scapula (Rubin I) can be done at the same time. This increases success rates to 58%[8] (Fig. 3).

Step 5

Some would advocate the Gaskin manoeuvre at this point. If the mother can move to all fours, up to 83% will deliver[9] (Fig. 4).

The vast majority of remaining women will deliver by 1 of the other 3 internal techniques (i.e., Steps 6 to 8) listed here.

Step 6

Rubin's second manoeuvre (i.e., Rubin II) is to place 2 fingers behind the occiput inside the vagina and try to rotate the anterior shoulder into the oblique (Fig. 5).

Step 7

Alternately, rotate the posterior shoulder by placing your fingers on the posterior scapula and rotating forward — the Woods' screw manoeuvre (Fig. 6).

Step 8

Delivery of the posterior arm can be done by sweeping the fetus's posterior forearm across the chest and out past the occiput. Although episiotomy does not reduce shoulder dystocia, this may be considered for this manoeuvre to ease entry of the operator's hand into the vagina. Delivery of the posterior arm can be associated with a fractured clavicle or humerus, which heal quickly in the newborn (Fig. 7).

Symphysiotomy and the Zavanelli manoeuvre

These remaining 2 techniques, symphysiotomy and the Zavanelli manoeuvre, are rarely used in North America. Because they are invasive they should be contemplated only when other techniques have failed, but when the fetus is still likely to be intact. Usually this would mean at about 4 to 8 minutes after the head delivers.

I have come across 2 rural doctors who have had experience with symphysiotomy, and only one who used it in Canada. The technique is used widely in the developing world where it is considered easy to do. It is associated with good fetal and maternal outcomes.[10]

Symphysiotomy

Equipment:

- 10% povidone-iodine prep
- 2% lidocaine and syringe
- 25 gauge needles 15 and 40 mm
- 20 gauge needle to draw up anesthetic
- Dressing tray and drapes
- #21 scalpel blade and #4 handle
- Sterile drapes
- Sterile gloves

Step A: The technique starts with freezing the supra pubic space.

Step B: Next, insert a foley and use your finger intravaginally to displace the foley and the urethra laterally to prevent urinary injury.

Step C: Using a scalpel (say a number 21 blade on a number 4 handle) incise through the supra pubic fat and divide the symphysis pubis until the pelvis falls open, releasing the fetal shoulder. The pelvis can be strapped with a wide belt until it heals or the symphysis can be reapproximated with internal fixation.

Zavanelli manoeuvre

The Zavanelli manoeuvre[11] involves replacing the fetus into the pelvis under tocolysis (say nitroglycerine patch) and proceeding to cesarean section. The literature describes its use in settings where a cesarean can be quickly effected.

Conclusion

In summary, shoulder dystocia is not reliably predictable, and any birth attendant should be prepared for it. The McRoberts' manoeuvre and suprapubic pressure will deliver the infant in most cases, and additional manoeuvres, if calmly and sequentially applied in a timely fashion, will also result in good outcomes.

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Country cardiograms case 32

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A 53-year-old man presents to the emergency department of a rural British Columbia hospital, complaining of palpitations. The palpitations have been present for the past 6 months, but have been worse recently. He has associated dizziness and vague chest discomfort. He virtually never visits doctors, is on no medications, smokes a pack of cigarettes a day, drinks alcohol "in moderation," and drinks large volumes of coffee daily. Results of his ECG, taken while asymptomatic, are shown in Figure 1. The computerized interpretation reads "probable inferior subepicardial injury." What is your ECG diagnosis?

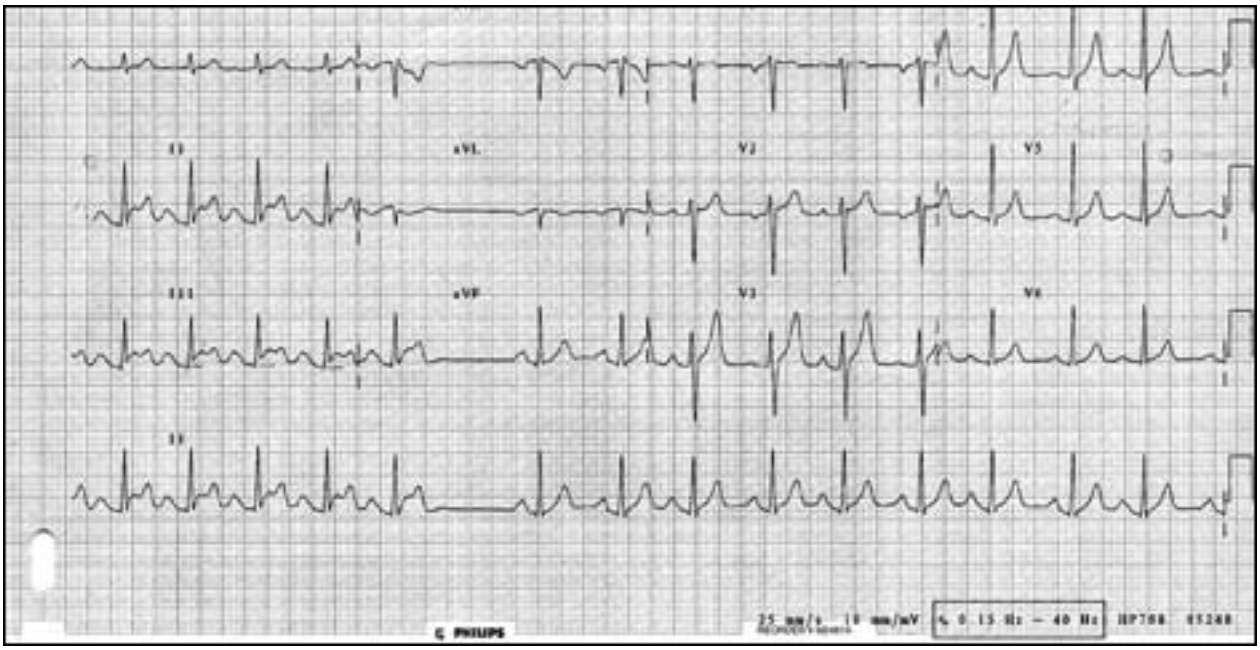

Fig. 1. Results of patient's ECG, which was taken when the patient was asymptomatic.

For the Answer, see page 47.

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A renaissance of sorts

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I recently had the pleasure of attending the international conference on "Knowledge, Culture, and Change in Organizations' in Prato, just outside Florence, Italy. The agenda was interesting given the ongoing changes in our provincial rural health services, the Northern Health Authority, and the local hospital and clinic, all of which I am obliged to deal with. The changing face of medicine, the growing flood of information coming at us as physicians, and the inevitable change by all to an electronic medical record system left me wondering whether I was really still in the Dark Ages and whether a renaissance in terms of my thinking was required. Florence, a leader in thinking during the Renaissance period, was a good place to ponder this over a fine glass of Chianti wine.

Two speakers, Dr. Michael Leiter (Centre for Organizational Research and Development, Acadia University, Canada) and Mr. David Snowden (Director, Cynefin Centre for Organizational Complexity, UK), presented issues that strongly aligned with sentiments I hear frequently among my rural colleagues.

Organizational changes

First, changes in an organization may initially lead to the improved outlook of those working in that setting; however, as the amount of change continually increases there is a measurable decline in the outlook (morale). In other words, it appears that incessant change leads to a kind of burn-out phenomenon as people continually attempt to adapt.

Although change is inevitable, we do have some ability to control its rate. To this end, I have strongly argued that unnecessary system change should be avoided whenever possible to help stabilize the provision of rural health care. People hesitate to commit to a moving target and they burn out trying to keep up with it. Job satisfaction, retention, and recruitment all decline.

Information overload

The second issue, discussed by Snowden, was also relevant in terms of the avalanche of information coming at physicians, covering treatment guidelines, medication updates, driver's test guidelines, cancer treatment recommendations, and other information that we are expected to have at our fingertips throughout the day as we see patients. Snowden asserts (as a result of observational research) that as you continue to give more and more information to people regarding their situation or work, their ability to respond successfully to new problems declines.

He also observes that people are unlikely to follow guidelines thrust upon them because, for the individual, "avoiding failure is more important than following patterns of best practice." In other words, if you have an existing system for solving problems with which you are comfortable, why make the additional effort (in our already overloaded life) of learning a new system and risking using information that 1) you have no previous outcomes by which to judge it and 2) in the medical world may have changed again by the time next year's guidelines come out?

One of the medical guideline authors with whom I spoke at the conference was dismayed to learn that some physicians subjected to information overload do not even open such large envelopes but simply trash them: "Don't they realize that some of these guidelines take up to two years of work to prepare?" Such authors do not understand at all the pressures that cause physicians to behave this way. A colleague of mine wisely observed that "we need to change the way we change."

Accessibility of knowledge

I suggest that we need to develop a single, unified system so that with one click of the mouse the physician can enter the guideline, recommendation, or information source needed and that with a second click, the specific area of interest is displayed. If the system involves much more, it is likely that Snowden's observation will take over and physicians will stick to the familiar and disregard the new information.

As I sit among the ageless beauty of the architecture and art of Florence that arose from an enlightened era, I wonder whether a similar renaissance of knowledge management will occur in the medical profession to improve our quality of life and our patients' care.

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Competing interests: None declared.

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Setting up your ideal rural elective

Ariana Murata, MD

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Aivuk!" The sled dogs lunged forward in fan formation. My *gamutiik* (sled) floated gracefully over the hard Arctic snow. The Inuit sped beside me on snowmobiles, buried in their sealskin suits. The temperature was –50C.

"*Auk*!" I shouted. The dogs wheeled to the right.

Dog sledding was exhilarating, as was most of my elective in Rankin Inlet (pop. 2300), Nunavut. Interesting cases included reactivation tuberculosis and severe postpartum hemorrhage from retained placenta. Combined with a preceptor who hunted musk oxen, this definitely made for a memorable and exciting experience. Which brings up the topic of this article — how to go about setting up the ideal rural elective.

Positive factors that are attributed to rural electives include exposure to breadth of practice, quality of life in a rural setting, and good mentor experiences.[1] And there's another positive factor I'll add: the opportunity to explore the pristine beauty of remote Canada.

The number of rural physicians has been steadily declining in Canada. In 1996, 9.8% of physicians practised in rural areas, compared with 14.9% in 1991. The ratio of rural physicians per 1000 population is projected to decrease from 0.79 (1999) to 0.53 (2021).[2]

A recent study showed that factors predictive of a physician's choice of rural practice included rural clinical training during medical school (55.4% rural physicians v. 35.2% urban physicians) and postgraduate rural training of more than 8 weeks duration (38.8% v. 20.2%).[3]

Countrywide programs have been developed to assist in setting up rural electives. Most provide free transportation and accommodation. Return to service agreements and bursaries are available.

Here's a listing of several of these programs. Good luck with setting up your ideal rural elective. You'll never regret it.

British Columbia, Yukon & NWT
Rural Experiences Access Program (REAP) North/West
www.srpc.ca/reapnort.htm

Experience remote Canada. Limited funding.
University of British Columbia
www.med.ubc.ca/education/md_ugrad/clerkship_electives.htm

www.med.ubc.ca/education/md_postgrad/Electives.htm

Visit Queen Charlotte Islands or the Okanagan Valley

Alberta, Saskatchewan & Manitoba
REAP Central
www.srpc.ca/reapcent.htm

Large $ bonuses for those planning to practise here

Manitoba & Nunavut
University of Manitoba J.A. Hildes Northern Medical Unit
www.umanitoba.ca/faculties/medicine/units/northern_medical_unit/

Experience First Nations or Inuit communities. Good funding.

Ontario
Northwestern Ontario Medical Programme (NOMP)
www.nomp.on.ca

Sioux Lookout to Thunder Bay. Experience First Nations culture.
Northeastern Ontario Medical Education Corporation (NOMEC)
www.nomec.on.ca

For those wanting to visit Timmins or Little Current
Rural Ontario Medical Program (ROMP)
www.romponline.com

Excellent summer program for medical students
Southwestern Ontario Medical Education Network (SWOMEN)
www.swomen.ca

Quebec
REAP Quebec
www.srpc.ca/reapqueb.htm

Good funding

Maritimes
REAP Atlantic
www.srpc.ca/reapatla.htm

Varied funding

Newfoundland & Labrador
Memorial University of Newfoundland
www.med.mun.ca/MED/medEducation2/medElectives.htm

Visit Goose Bay. Popular elective

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CMA Web site — Stat!Ref textbooks

Barrie McCombs, MD, FCFP

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The Canadian Medical Association has recently added 45 medical textbooks from Stat!Ref to the Clinical Resources section of their Web site (www.cma.ca). The subjects cover primary care, many specialties and basic medical sciences. This article gives a quick tour of the main features of this new resource.

If not already registered, CMA members can sign up by clicking the "Free Registration" link on the CMA home page. You will need your CMA ID number, which is usually printed on your provincial medical association card. If you cannot find your ID number, or have difficulty with the registration process, contact the CMA Member Service Centre at 800 457-4205.

Stat!Ref

Stat!Ref is located in the "Clinical Resources" section of the CMA home page. Select "Stat! Ref Textbooks" from the left-hand menu to open it in a new browser window. Users should be aware that if Stat!Ref is inactive for more than 10 minutes, it will automatically disconnect.

Basic search

Click on the Stat!Ref Textbooks link. Enter your search terms in the textbox on the Stat!Ref page. The default is to search all available textbooks. A search for a common term, such as "diabetes," may result in a slight delay, since there may be hundreds of items that match that term.

Advanced search

The Advanced Search page allows you to select which books are included in a search. Experienced searchers can also change the defaults for precision, proximity, related concepts and inclusion of suffixes.

Results page

The right-hand side of the Results page displays the first 10 items that match your search.

The next 90 are available (in groups of 10) from a menu at the top of the page under "Result Page." Click on the item's title to display the full text. Your search terms will be highlighted in red wherever they appear in the text. At any time, you can return to the result of your last search by clicking the Results tab at the top of the page.

The left-hand side displays the total number of matches and how many are in the categories of Patient Information, Point of Care (quick reference texts) or Titles By Discipline (specialties). Click on each link to see a further breakdown by textbook or specialty.

Stedman's Dictionary

While reading textbook pages, the "Stedman's Lookup" feature lets you look up unfamiliar words. Double-click on a word in the text to highlight it, and then click on the "Stedman's Lookup" link at the top of the page. A pop-up window will display the definition of the highlighted word.

Table of contents page

This page provides a list of all textbooks available in Stat!Ref. Click on a book title to display its table of contents. Click on a section heading to see any additional subheadings. A "Collapse All" link allows you to close all subheadings and return to the main book list.

Resources page

This link connects to several additional resources. The StatStudy link provides resources for medical students and residents. The PubMed link connects to the US National Library of Medicine MEDLINE medical literature database. The National Guideline Clearing House link connects to a database of US clinical guidelines. For Canadian guidelines, visit the Guidelines link on the CMA Clinical Resources page.

Anatomy.tv

Anatomy.tv provides interactive anatomy drawings suitable for patient education. Select a section of the body and then click on any part of the diagram to see a description. You can also select what layer of the body part you wish to view.

MedCalc 3000

MedCalc 3000 provides a number of interactive medical calculators. At the time of writing, the CMA subscription only provides a few of these calculators. In future, perhaps the CMA will consider adding the full calculator package.

User assistance

At the top of every Stat!Ref page are 4 small links labelled "Home," "Preferences," "Help" and "Logoff." The Home link returns you to the Stat!Ref home page if you wish to conduct a new search. The search terms of your last search will still be displayed. The Preferences link allows experienced users to save their preferences for how searches are conducted. The Help link provides detailed information about Stat!Ref. To view the Help table of contents, click on "User Help" in the left-hand column. The Logoff link disconnects you from Stat!Ref and frees the CMA subscription for use by other members.

Other CMA resources

As well as Stat!Ref, the CMA Clinical Resources section contains links to other useful clinical resources such as the Lexi-Drugs drug information database, the MD Consult collection of medical textbooks and the InfoPoems summaries of the best clinical evidence.

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Competing interests: None declared.

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Telehealth and the recruitment and retention of physicians in rural and remote regions: a Delphi study

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Introduction: The availability of a medical workforce is a growing concern for rural and remote communities across Canada. In the last decade, various telehealth experiences have highlighted the potential impact of this technology on professional as well as organizational practices. But could telehealth be a strategy to attract and maintain physicians in rural and remote communities? The objective of this study was to identify a reliable list of recruitment and retention factors on which telehealth could have an impact.

Methods: We conducted 2 literature reviews and a Delphi study among 12 telehealth experts across Canada.

Results: The literature reviews identified 7 categories of recruitment and retention factors on which telehealth could have an impact: 1) individual, 2) familial, 3) contextual, 4) professional, 5) organizational, 6) educational, and 7) economic.

Conclusions: Experts consulted through the Delphi study reached consensus on 31 out of 34 of the proposed statements about the impact of telehealth. This consensus can now be used as a conceptual model for further studies on the topic.

Introduction : La disponibilité des effectifs médicaux préoccupe de plus en plus les communautés rurales et éloignées du Canada. Au cours de la dernière décennie, diverses expériences en télésanté ont mis en évidence l'effet que cette technologie pourrait avoir sur les dimensions professionnelles et organisationnelles de la pratique. La télésanté pourrait-elle toutefois constituer une stratégie à suivre pour attirer et garder des médecins en milieu rural et éloigné? Cette étude visait à établir une liste fiable de facteurs de recrutement et de maintien en poste sur lesquels la télésanté pourrait avoir une influence.

Méthodes : Nous avons procédé à deux recensions d'écrits et à une étude Delphi auprès de 12 experts en télésanté du Canada.

Résultats : Les recensions d'écrits ont dégagé sept catégories de facteurs de recrutement et de maintien en poste sur lesquels la télésanté pourrait avoir une influence : 1) individuels, 2) familiaux, 3) contextuels, 4) professionnels, 5) organisationnels, 6) éducationnels et 7) financiers.

Conclusions : Les experts consultés dans le contexte de l'étude Delphi se sont entendus sur 31 des 34 énoncés proposés au sujet de l'influence de la télésanté. On peut maintenant utiliser ce consensus comme modèle conceptuel pour effectuer des études plus poussées sur la question.

Introduction

In Canada, issues regarding availability of, and access to, the health sector workforce are of increasing concern. Between 1993 and 2000 the number of physicians per 100 000 capita has diminished from about 195 to 189.[1] The situation is even more worrying in remote regions, where 22% of Canadians live, but where only 10% of Canada's physicians practise.[2] Moreover, shortages of both general practitioners (GPs) and specialists are expected to increase in the forthcoming years.[3] This situation is of major concern for decision-makers as well as the general population.[4] The Quebec Ministry of Health and Social Services is actually looking for different innovative strategies to favour the attraction and retention of physicians in remote regions. In its annual report, the Ministry identified telehealth as an effective strategy for contributing to improving the accessibility of health services in remote regions.[5] Innovative strategies have to be developed to improve medical workforce recruitment and retention in remote regions. New information and communication technologies (ICT) could play an important role.[6]

In Quebec, as in other Canadian provinces, the last decade has seen many successful telehealth projects.[7] Although the literature regards telehealth as a tool that can have a positive impact on several dimensions influencing recruitment and retention of the medical workforce in remote areas,[8] it also criticizes the scarcity of convincing data related to this phenomenon.[9] A recent study by Sargeant and coworkers[10] found that telemedicine was not reported by GPs and specialists to be an important consideration in their choice of practice location, relative to other factors. The purpose of this study was to identify a reliable list of recruitment and retention factors on which telehealth could have an impact.

Methods

Review of the literature

To meet this objective, 2 literature reviews were conducted. The first was to document factors related to the recruitment and retention of physicians in rural and remote regions. The second was aimed at determining upon which of these factors telehealth could have an impact. Several strategies were used for both reviews. First, various scientific databases were used to locate literature, including: ISI Web of Knowledge; MEDLINE, PubMed, CINAHL, ProQuest, WebSpire and HealthSTAR. The many key words used were determined by the research team and validated by a group of experts on medical workforce recruitment and retention and by telehealth collaborators to the project. The key words were related to the health care workforce in a rural and remote setting. Hand searches of the tables of contents were then performed in specialized scientific journals as well as in professional journals, ministry reports, among others. The articles included in the 2 reviews spanned the years from 1992 to 2004, and were written in French or English.

Results

Literature review on recruitment and retention of health professionals

Seven categories of recruitment and retention factors were identified through the 109 articles and reports consulted for the first literature review: individual, familial, contextual, professional, organizational, educational and economic. These categories are briefly presented below.

Individual factors

Individual factors are personal characteristics that influence recruitment and retention of physicians in remote areas. This category deals with factors such as being born and raised in a remote area;[11] personal values such as liking challenges;[12] career plans;[13] and, finally, the proximity of family and friends.[14] Even if sex and age have an unspecified influence on recruitment and retention, they need to be looked at more closely, since a feminization of the medical practice has been observed over the last years.[15]

Familial factors

Various factors of recruitment and retention are related to family. The possibilities of recruitment and retention increase if the remote region offers opportunities of employment or activities for the spouse, and educational opportunities for the children.[16,17] Likely, conditions facilitating conciliation between work and family support the retention of physicians.[16] Last, the preferences and needs of the spouse will improve recruitment and retention, if they are met.[12,18,19]

Contextual factors

Different characteristics of the community can also influence the decision of physicians to work and stay in a remote region. For instance, the type and size of the population can influence recruitment and retention of physicians.[13,14,20] Access to social and recreational activities also encourages their recruitment and retention.[11,14,21] A healthier and less stressful lifestyle positively influences recruitment.[18] Retention can be encouraged by the feelings of closeness to the community.[22]

Professional factors

On the professional side, factors such as feelings of isolation, fatigue and stress impede retention of professionals in rural and remote regions. Opportunities for professional advancement, development and growth improve the likelihood of retention,[14,21,23] as well as a good relationship with patients.[16] Availability of support from the medical community encourages both physician recruitment and retention.[11,19,24] Finally, professional isolation can have a negative impact on retention.[25]

Organizational factors

Quality of work conditions, access to specialized services, possibility of working in a team, and the reputation of the institution are some of the organizational factors that encourage recruitment of physicians.[11,23] However, limited access to resources, equipment and facilities can severely affect their retention.[18,24]

Educational factors

Some recruitment and retention factors can be grouped in the educational category. Exposure to practice in rural and remote regions during the academic years encourages recruitment of physicians.[26,27] In addition, access to continuing medical education[28] and the possibility of teaching students[11,17] positively influence recruitment and retention.

Economic factors

The remuneration of professionals has a positive influence on recruitment.[14,18] Additionally, the payment of loans, benefits, compensations and social advantages encourage recruitment and retention.[17]

Literature review on telehealth's impact

Forty articles and reports were consulted for the second literature review. They identified 34 factors of telehealth that could be related to medical workforce recruitment and retention. These factors have been grouped into the individual, professional, organizational and educational categories presented previously. Though most of the consulted literature was based on hypotheses rather than empirical data, it gave us the possibility to establish a first list of statements on which experts could make a judgment.

Methods

Delphi study

In order to propose a set of factors related to telehealth that could potentially influence recruitment and retention of physicians, a Delphi study was conducted. This technique compared the degree of written agreement among experts, who were not in contact at any time.[29] A minimum of 2 questionnaires was used to get a consensus from the experts. This type of study is excellent for obtaining opinions from experts who live and work in different geographic regions and settings. It also encourages open dialogue among experts.

Choice of experts

The aim of the Delphi study was to obtain opinions from a group of experts representing a variety of experiences and expertises. Selected experts included academic researchers in the field of telehealth, health care professionals who have been using telehealth for at least 3 years, and medical directors who have implemented telehealth in their institution for at least 3 years or more. Experts were drawn from 4 provinces: Alberta, Nova Scotia, Ontario and Quebec. A list of potential members was developed using a purposive sampling method. A purposive method is an iterative process, requiring multiple contacts with organizations (e.g., telehealth projects) to identify and successfully recruit appropriate key informants to participate in the study. Names of experts were selected from known telehealth projects and proceedings of telehealth conferences. They were chosen for their participation in telehealth projects as managers, users and researchers/evaluators.

Validation of the instrument

The 2 literature reviews were fine-tuned by a discussion of the findings with the group of experts collaborating on the project. The result was a total of 34 items to be included in the Delphi questionnaire. The questionnaire was pilot tested with 6 experts from Quebec (excluded from the Delphi study) to assess the clarity of the questions, the clarity of instructions, and adequacy of the format.

Following the pilot test, 3 items were added to the questionnaire, clarifications were brought to 15 items, and 2 items were deleted because of redundancy. Finally, participants mentioned the need to have a definition of telehealth, which we added in the instructions based on the one provided by the Table ministérielle en télésanté.[29] There was no suggestion for improving the presentation format. After making the required modifications, the questionnaire was translated into English and then translated back into French by an external translator, in order to ensure the validity of the translation.

Description of the study process

A first questionnaire, comprising 35 statements, was sent out by email to our targetted group of experts. The responses to this questionnaire were analyzed by team collaboration. A second questionnaire was devised that adjusted the questions with the feedback obtained. Three questions were discarded from the first questionnaire — for the similarity they had with others — and 2 were added. The final questionnaire had 34 statements (4 educational factors, 13 professional factors, 10 organizational factors, 7 individual traits) and included the degree of agreement obtained. This questionnaire was sent to the experts who answered the first one.

Analysis

Analysis of the 2 questionnaires was done together by the research team and team collaborators as a workshop. To reach consensus, a given proposition had to be approved by at least 60%, but we classified the question as having a significant impact when a consensus of 75% was obtained of the consulted experts.

Results

Twelve experts were sent the first questionnaire, a sample size that is consistent with the 10–18 recommended for a Delphi study.[30] Nine (75%) sent back their questionnaire. Six of the experts also completed the second questionnaire.

Our analysis of the completed questionnaires showed that a consensus was obtained for 31/34 questions.

As shown in Table 1, consensus was reached for 3 of 4 educational factors as related to recruitment. As for retention, consensus was reached in 1 of the 4 factors: allowing knowledge update will favour retention. As such, none of the educational factors reached consensus for either recruitment or retention.

As presented in Table 2, experts agreed on all of the proposed statements with respect to professional factors as related to retention effects (13/13). There was consensus in 7/13 of the factors as related to recruitment effects.

A consensus was obtained that telehealth could favour both recruitment and retention by giving rural and remote specialists the opportunity to transmit more information to their colleagues in order to discuss complex cases. Experts argued about the potential telehealth effect on this factor of recruitment and retention, since it gives physicians more support, which helps keep them in the community. However, according to some of the experts, it might have more impact on family physicians than on specialists.

Similarly, the experts agreed that telehealth could favour recruitment and retention by facilitating contact with peers. Experts argued that this peer reinforcement is critical, but that it requires a system that is interoperable, easy to use, with human interfaces and connectivity for all. Experts disagreed with the statement that telehealth impedes retention, by allowing specialists to be consulted remotely. The reason given for this disagreement was that telehealth could be a real danger if it was promoted as a substitution for specialists in remote regions. Also, experts disagreed with the statement that telehealth, by increasing work complexity, impedes recruitment and retention. This disagreement is explained by the fact that if telehealth increases work complexity, physicians would not use it and would prefer using the telephone.

Table 3 shows that consensus was reached for 7/10 organisational factors for both recruitment and retention effects. Some of the highlights are as follows: experts agreed that telehealth, by creating a stimulating work environment, favours recruitment and retention of physicians; experts mentioned that this was particularly true for the educational aspects, the professional support and the expertise given by telehealth; and

experts also disagreed that telehealth favours recruitment by increasing a physician's opportunity to integrate into a team and by a stimulating practice with more complex cases due to avoided transfers.

On this last statement, experts argued that to care for more complex cases, infrastructure and human resources were needed, all that making the practice more interesting.

Finally, individual factors are those personality traits that could be related to both rural practice and telehealth utilization. According to the panel of experts, all individual traits presented as characteristics of remote physicians were also deemed important for telehealth users (Table 4). Traits for which there was the highest consensus were: liking challenges, the capacity to work in collaboration, being helpful for the community and having a facility of adaptation. Even though these results are positive, some experts noted the need for additional reflection on this aspect.

Factors for which a consensus of 75% or more was reached were classified as being more likely to have a significant impact. Then, a prioritization of importance of educational, professional and organisational factors was done (Table 5). According to this prioritization, only one factor related to telehealth could have a significant negative impact on physician recruitment and retention: increasing the complexity of cases because of avoided patient transfers. Conversely, 10 factors related to telehealth are likely to have a significant positive impact on recruitment and retention of physicians in rural and remote regions.

Discussion

From this Delphi study, it is likely that telehealth could have an impact on a set of individual, professional, organizational and educational factors related to recruitment and retention of physicians in rural and remote regions. Nevertheless, this analysis has shown that even if telehealth can be seen as an asset for recruitment and retention of physicians, this technology alone cannot solve workforce shortages. With the increasing presence of information technologies in the health care system, it would be important to conduct more focused surveys on the effects of telehealth on the different dimensions of the work of physicians. To do so, theoretical and empirical foundations are needed. Hence, the elements of consensus that have emerged from this Delphi study could provide a basis to investigate the actual impact of telehealth on professional practice in the health care sector.

Limitations

The response rate was good in the first round of the consultation: 9/12 solicited experts (75%) responded to the questionnaire. However, only 6 responded to the second round. A plausible explanation for this lower response rate could be the lack of major divergences between experts' opinions, making both questionnaires rather similar. Although the number of participants was small, it can be justified by the specificity of the topic and the limited diversity of opinions on that subject. Moreover, we performed a second analysis with a focus group of 5 experts from diverse backgrounds (academic, clinical, health management) who collaborated on the research project. This gave us a broader comprehension of the observed results.

According to the commentaries given by experts in the questionnaire and during the focus group, the main ambiguity came from the extent to which the stated factors could play an important role on a physician's decision to choose to work in rural and remote regions and/ or to stay there.

Conclusion

The consensus reached by experts consulted through the Delphi study shows the potential that telehealth could have on a set of individual, professional, organizational and educational factors related to recruitment and retention of physicians in rural and remote

regions. The results from this study can now be used as a conceptual model for further studies on the topic.

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