Canadian Journal of Rural Medicine
Journal canadien de la médecine rurale

Fall 2002 / Autumne 2002

Can J Rural Med 2002; 7(4)

Cover: "Thunderhead"

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If it's Québec, it must be Bill 114

John Wootton, MD, Shawville Que.

CJRM 2002;7(4):251-2

July was a banner month in Québec. Temperatures hit record levels, and the temperature in the medicopolitical cauldron boiled over! As is often the case when pots boil over, something gets burned, and in this case it was Québec's emergency physicians, defined as any physician who has billed for work in an emergency department (ED) in the last 4 years. The tinder that fed the fire was the death of a patient who was unable to get timely treatment at his local ED (which had closed) and died en route to the next closest facility. The match that lit it was a law (Bill 114)1 that provides a framework to oblige identified ED docs to work where they are needed, when they are needed, or face severe financial penalties.

Also specifically targetted were provincial bodies representing physician interests who were prevented from opposing the law or counselling any of their members to oppose it, again by the threat of severe financial pain. Sound draconian? Québec physicians thought so, but the public quite clearly didn't. Caller after caller to open-line shows and mail to journalists applauded the government's action in conscripting physicians to the province's EDs.2

What was lost in the general hullabaloo was the patent absurdity of the approach. By targetting only those physicians with recent ED work histories, 80% of the province's physicians were "off the hook." They could continue their comfortable 9-to-5 existence unperturbed by this unprecedented intrusion into physician civil rights. Rather, the government chose to target the 20% of the workforce that was already putting in the ED hours, and whose need for relief was at the root of the coverage crisis in the first place, a crisis (I might add) that only affected a very few of Quebec's hospitals with EDs. In addition, the law lacked nuance to the point that it was entirely possible that a physician, who was already doing several other kinds of call in his or her summer (e.g., obstetrics, anesthesia), might well find him/herself on the hook for even more call. In short, a mess!

By the time this issue of the Journal goes to press, several things may have happened. The various regional boards whose responsibility it is to invoke the law may realize that to do so is a

lose-lose proposition. Not only will it alienate the very people who are working hardest for them, but it will set back meaningful reform significantly and may even cause a number (perhaps a great number) of defections to other places. As we know, these days, insofar as physician services go, it is a seller's market.

Or perhaps some brave soul will choose to defy the law and expose its tyrannical underbelly, or, the law itself may be taken to court. This approach will be moot however, if, as expected, the law expires on Dec. 31, 2002.

Perhaps, however, something quite unexpected will occur. Perhaps this rather desperate and poorly formulated bureaucratic intervention will serve to focus attention on the pivotal role played by rural "full service" general practitioners, whose support and long hours of service are vital to communities. It may also be that the opinion of these communities is not fully represented by those who phone in to talk shows. Perhaps, since there is an election coming, energies at long last will be focussed not only at the service end of this complex issue, but also at the training end, at the incentive end, at the support end, at the research end. Perhaps, at long last, the SRPC will be heard!

Not only will it alienate the very people who are working hardest for them, but it will set back meaningful reform significantly and may even cause a number ... of defections.

Competing interests: None declared.

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Si c'est la Loi 114, ça doit être au Québec

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CJRM 2002;7(4):251-2

Juillet a été un mois record au Québec. Le thermomètre a enregistré des records et la température a fait exploser la marmite médicopolitique! Comme un débordement cause souvent des brûlures, ce sont en l'occurrence les urgentistes du Québec qui se sont fait échauder, c.-à-d. tout médecin qui a facturé pour des actes accomplis dans un service d'urgence depuis quatre ans. L'étincelle qui a mis le feu aux poudres a été la mort d'un patient incapable de se faire traiter rapidement à son service d'urgence local (qui était fermé) et qui est mort pendant qu'on le transportait vers l'établissement le plus proche suivant. L'élément déclencheur a été une loi (la Loi 114)1 qui établit un cadre afin d'obliger des urgentistes identifiés à travailler là où l'on a besoin d'eux, quand on en a besoin. Sinon, ils s'exposent à de sévères pénalités financières.

La Loi vise aussi spécifiquement les organismes provinciaux qui représentent les intérêts des médecins en les empêchant de s'opposer à la Loi ou de conseiller à leurs membres de s'y opposer, là encore sous la menace de graves sanctions financières. Mesure draconienne? C'est ce que pensent les médecins du Québec, mais il est très clair que le public n'est pas de cet avis. Les intervenants se sont succédés aux tribunes téléphoniques et dans le courrier des journalistes pour féliciter le gouvernement d'avoir obligé les médecins à travailler dans les salles d'urgence de la province.1

Ce qu'on a oublié dans le tohu-bohu général, c'est l'absurdité flagrante de la mesure. En ciblant seulement les médecins qui ont travaillé récemment à l'urgence, on a «oublié» 80 % des médecins de la province, qui pourraient poursuivre leur existence confortable de neuf à cinq sans être perturbés par cette ingérence sans précédent dans les droits civils des médecins. Le gouvernement a plutôt choisi de cibler les 20 % des effectifs médicaux déjà actifs dans les services d'urgence et dont le besoin de relève est à l'origine de la crise des heures de garde au départ, crise qui n'a affecté (si l'on me permet de le préciser) que quelques rares hôpitaux du Québec qui ont un service d'urgence. En outre, la Loi est tellement peu nuancée qu'il est tout à fait possible qu'un médecin qui répond déjà à plusieurs autres types d'appels pendant l'été (p. ex., obstétrique, anesthésie) se retrouve obligé d'en faire encore davantage. En deux mots, c'est le

fouillis!

Lorsque ce numéro du Journal ira sous presse, plusieurs choses auront pu se produire. Les régies régionales chargées d'appliquer la Loi pourront réaliser qu'il s'agit là d'une proposition perdante pour tous. Sans compter qu'elle aliénera les gens mêmes qui travaillent le plus fort, la Loi entraînera un recul important de toute réforme significative et pourra même causer des défections (dont le nombre pourrait être important). Comme nous le savons, le marché actuel des services médicaux est un marché de vendeur.

Il y aura peut-être un brave qui décidera de défier la Loi et d'exposer sa tyrannie sous-jacente. On pourrait même contester la Loi devant les tribunaux. Cette démarche ne servira toutefois à rien si la Loi prend fin comme prévu le 31 décembre 2002.

Il pourrait toutefois se produire quelque chose de très inattendu. Cette intervention administrative plutôt désespérée et mal formulée servira peut-être à attirer l'attention sur le rôle charnière que jouent les omnipraticiens ruraux «tous services» dont l'appui et les longues heures de service sont vitaux pour les communautés. En outre, ceux qui appellent aux tribunes téléphoniques ne représentent peut-être pas toute l'opinion des communautés en cause. Comme il y aura des élections avant longtemps, il se peut que l'on concentre enfin les énergies non seulement sur le volet service de ce grand dossier complexe, mais aussi sur ceux de la formation, des incitations, de l'appui et de la recherche. Il se pourrait peut-être qu'on entende enfin la SMRC!

Intérêts concurrents : aucune déclaré.

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President's message: A National Rural Health Strategy

Jill Konkin, MD, Jasper, AB

CJRM 2002;7(4):255

There is much to celebrate about rural medicine. The health care workforce is dedicated and skilled. Rural physicians actually provide the comprehensive care that our provincial governments say they are looking for from primary care physicans. The much vaunted "basket of services" for primary care is more affected by the limited resources available in rural communities than by the will of health professionals to provide the service. Often, though not always, there is much greater coordination and cooperation among various providers than exists in the cities. As well, rural physicians provide a much broader range of services. The Society of Rural Physicians of Canada continues to advocate at both the provincial and federal levels for policies that support this comprehensive approach to care for rural Canadians.

Many reforms have been detrimental to rural health care. For example, in some provinces, population-based funding formulae work against rural communities. This method of funding may at first sound democratic and egalitarian. However, it does not consider the differing needs of rural health care as opposed to urban. This has resulted in a decline in access to care and a deterioration in the range of services provided by rural physicians. What is happening in many parts of our country is a centralization of care, with the underlying assumption that travelling to obtain services is better than providing them locally. There is evidence that, at least in the area of obstetrics, this leads to worse outcomes. It is time to rethink the centralizing and urbanizing forces in health care and to determine the services that ought to be delivered locally and get on with providing them. If one looks at our country as a whole, there is a well established principle of equalization payments among provinces. Perhaps it is time that our provincial governments examine their own backyards and consider health care equalization payments for rural Canada.

Health human resources continues to be a major issue. Governments have finally acknowledged physician shortages and have instituted some measures (e.g., increasing medical school enrollment) to improve this situation. Some initiatives are aimed at improving the number of medical school graduates interested in and trained for rural practice. These include the Northern Ontario Medical School, the University of British Columbia's initiative to expand its medical

school campus into Prince George and Victoria, and rural residency training programs in a number of provinces. Our ministers of health have finally acknowledged the significant shortage of nurses in this country. Hopefully, they will now address issues of training and recruitment and retention for nurses in rural/remote communities.

We need an overall plan and a coordinated approach to Canada's rural health services. Although there is much to celebrate in rural health care, our numbers are diminishing; our workforce is aging; the resources available to us are decreasing. It is time for governments and policymakers to recognize that rural Canadians deserve the same timely access to quality health care services as do urban Canadians. We need long-term planning that realistically looks at the needs of and barriers to health care in rural Canada. It is time for a National Rural Health Strategy.

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Message de la présidente : Une stratégie nationale sur la santé rurale

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CJRM 2002;7(4):256

Il y a de nombreuses raisons de célébrer au sujet de la médecine rurale. Les travailleurs de la santé sont dévoués et qualifiés. Les médecins ruraux dispensent les soins intégrés que nos gouvernements provinciaux affirment attendre des médecins de premier recours. Les ressources limitées disponibles dans les communautés rurales affectent beaucoup plus le «panier de services» de soins primaires tant vanté que la volonté des professionnels de la santé de dispenser le service. Souvent, même si ce n'est pas toujours le cas, il y a beaucoup plus de coordination et de coopération entre les prestateurs que ce n'est le cas en milieu urbain. Les médecins ruraux offrent en outre une palette de services beaucoup plus vaste. La Société de la médecine rurale du Canada continue de préconiser, aux niveaux tant provincial que fédéral, des politiques qui appuient cette démarche intégrée de soins pour la population rurale du Canada.

De nombreuses réformes ont joué au détriment des soins de santé en milieu rural. Dans certaines provinces, par exemple, des formules de financement fondées sur la population jouent contre les communautés rurales. Ce mode de financement peut sembler à prime abord démocratique et égalitaire. Il ne tient toutefois pas compte des différences entre les soins de santé en milieu rural et en milieu urbain. Ce qui a entraîné une dégradation de l'accès aux soins et de l'éventail des services dispensés par les médecins ruraux. Dans beaucoup de régions, une centralisation des soins fondée sur l'hypothèse sous-jacente selon laquelle il est préférable d'obliger les gens à se déplacer pour obtenir des services au lieu de les dispenser sur la scène locale. Des données montrent que, du moins dans le domaine de l'obstétrique, les résultats se dégradent. Le moment est venu de repenser les forces de la centralisation et de l'urbanisation dans le secteur de la santé, de déterminer les services qu'il faut dispenser localement et de les offrir. Sur le plan national, les paiements de péréquation entre les provinces constituent un principe bien établi. Le moment est peut-être venu pour les gouvernements provinciaux de regarder dans leur propre cour et d'envisager des paiements de péréquation pour les soins de santé en milieu rural au Canada.

Les ressources humaines de la santé demeurent un enjeu majeur. Les gouvernements ont fini par reconnaître les pénuries de médecins et prendre des mesures (notamment en augmentant

l'inscription aux facultés de médecine) pour corriger le problème. Des initiatives visent à améliorer le nombre de diplômés de facultés de médecine formés pour pratiquer en milieu rural et intéressés à le faire. Ces mesures comprennent notamment la Faculté de médecine du nord de l'Ontario, l'initiative lancée par l'Université de la Colombie-Britannique pour étendre son campus de la Faculté de médecine à Prince George et Victoria, et des programmes de résidence en milieu rural dans de nombreuses provinces. Nos ministres de la Santé ont fini par reconnaître la pénurie importante qui sévit au Canada. Nous espérons qu'ils s'attaqueront maintenant aux problèmes que posent la formation des infirmières, le recrutement en milieu rural et éloigné et le maintien des effectifs.

Nous avons besoin d'un plan global et d'une stratégie coordonnée sur les services de santé en milieu rural au Canada. Même s'il y a de nombreuses raisons de célébrer dans le domaine des soins de santé ruraux, nos effectifs diminuent et vieillissent. Les ressources dont nous disposons s'amenuisent. Le moment est venu pour les gouvernements et les stratèges de reconnaître que la population rurale du Canada mérite le même accès rapide à des services de santé de qualité que celle des milieux urbains. Ils doivent planifier à long terme et tenir compte de façon réaliste des besoins et des obstacles dans le domaine des soins de santé en milieu rural au Canada. Le moment est venu d'adopter une Stratégie sur les soins de santé en milieu rural.

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Induction of labour in the third trimester: review of outcomes with intravaginal misoprostone gel at a rural hospital in British Columbia

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CJRM 2002;7(4):256-7

Objective: To evaluate the efficacy and safety of intravaginal misoprostol for induction of labour in the third trimester at a rural northern British Columbia community hospital where misoprostol was used for such purposes up until September 2001. The evaluation was done by examining the need for tocolysis, the need for oxytocin augmentation, the incidence of failed induction, the incidence of uterine rupture, and the neonatal Apgar score. Results were compared with those of an historical group that underwent induction of labour using dinoprostone gel.

Design: Retrospective chart audit of the method of induction of labour, the need for intervention, and outcomes.

Setting: A 64-bed community hospital where approximately 480 babies per year are delivered.

Patients: 162 women who had induction of labour with intravaginal misoprostol between Jan. 1 and Dec. 31, 1998, and 60 women who had induction of labour with dinoprostone gel between Jan. 1 and Dec. 31, 1995.

Outcome measurements: The need for tocolysis, the need for oxytocin augmentation, the incidence of failed induction (cesarean section) and neonatal Apgar scores.

Results: Tocolysis was required by one woman in the dinoprostone group and none in the misoprostol group. The percentage of women who required augmentation was the same in the 2 groups (11.7%). The incidence of failed induction was lower in the misoprostol group (12.3% v. 16.7%), but this was not statistically significant. The median neonatal Apgar score at 5 minutes was 10 in both groups.

Conclusions: Experience at Fort St. John Hospital & Health Centre suggests that intravaginal administration of misoprostol is a reliable and safe method of induction of labour in the third trimester. The large body of supportive evidence could be used to promote the licensing of misoprostol for this indication.

Objet : Évaluer l'efficacité et l'innocuité du misoprostol intravaginal pour déclencher le travail au cours du troisième trimestre dans un hôpital communautaire rural du nord de la Colombie-Britannique où l'on a utilisé le misoprostol à ces fins jusqu'en septembre 2001. On a effectué l'évaluation en examinant le besoin de tocolyse, le besoin d'augmenter l'oxytocine, l'incidence d'inductions infructueuses, l'incidence de ruptures de l'utérus et l'indice d'Apgar des nouveau-nés. On a comparé les résultats à ceux d'un groupe historique de patientes chez lesquelles on a déclenché le travail au moyen d'un gel de dinoprostone.

Concept : Vérification rétrospective des dossiers portant sur la méthode d'induction du travail, le besoin d'intervention et les résultats.

Contexte : Hôpital communautaire de 64 lits où quelque 480 bébés naissent chaque année.

Patientes : Cent soixante-deux femmes chez lesquelles on a déclenché le travail au moyen de misoprostol intravaginal entre le 1er janvier et le 31 décembre 1998, et 60 femmes chez lesquelles on l'a provoqué au moyen de dinoprostone entre le 1er janvier et le 31 décembre 1995.

Mesures de résultats : Le besoin de tocolyse, le besoin d'augmenter l'oxytocine, l'incidence d'inductions infructueuses (césariennes) et les indices d'Apgar des nouveau-nés.

Résultats : Il a fallu une tocolyse chez une femme du groupe de celles qui ont reçu la dinoprostone et chez aucune de celles qui ont reçu le misoprostol. Le pourcentage des femmes chez lesquelles il a fallu augmenter la dose a été le même dans les deux groupes (11,7 %). L'incidence d'inductions infructueuses a été moins élevée chez celles qui ont reçu du misoprostol (12,3 % c. 16,7 %), mais elle n'était pas significative sur le plan statistique. L'indice d'Apgar médian des nouveau-nés à cinq minutes s'établissait à 10 dans les deux groupes.

Conclusions : L'expérience du Fort St. John Hospital & Health Centre indique que l'administration intravaginale de misoprostol constitue une façon fiable et sans danger de déclencher le travail au cours du troisième trimestre. La masse importante de données d'appui pourrait servir à promouvoir l'autorisation du misoprostol pour cette indication.

Introduction

Misoprostol, a synthetic analogue of prostaglandin E1, is approved in Canada only for the

prevention and treatment of nonsteroidal anti-inflammatory drug-induced gastroduodenal ulcers and the treatment of duodenal ulcers caused by peptic ulcer disease.1 However, because of its uterotonic and cervical-ripening activity it has gained widespread use in obstetrics, and clinical studies support this use.2 Using the US Preventive Services Task Force classification, misoprostol 25 μg intravaginally every 4–6 hours is graded as A for efficacy (good and consistent scientific evidence to support the recommendation) and C for safety (rare adverse outcomes).2 Indeed, the use of misoprostol for induction of labour had become so standard that in 1999 the Obstetric Practice Committee of the American College of Obstetricians and Gynecologists (ACOG) issued an opinion and a practice guideline regarding the appropriate use of misoprostol for this indication.3 Sanchez-Ramos and Kaunitz4 performed a meta-analysis of randomized, controlled trials of cervical ripening and induction of labour (5735 women in the misoprostol group and 2945 in the control group, who received placebo, oxytocin, dinoprostone gel, or other) and found that the mean time to delivery was shorter, augmentation was required less frequently, and the rate of cesarean section was lower in the misoprostol group.

Reports of adverse events, specifically uterine rupture, associated with the off-label use of misoprostol in pregnant women prompted discussions between the US Food and Drug Administration (FDA) and G.D. Searle, the manufacturer of Cytotec® (misoprostol) tablets; Searle subsequently issued a letter in August 2000 to obstetricians and other physicians stating that misoprostol should not be administered to any pregnant woman and, specifically, that it was not approved for the induction of labour or abortion.3 This raised great concern among administrators, doctors, nurses and pharmacists regarding litigation. In response, the ACOG reaffirmed to its members that use of misoprostol for cervical ripening and induction of labour is safe and effective when used appropriately. Searle has responded that it does "support the role of physicians, using their professional judgement, to prescribe an approved pharmaceutical product for a use outside of its FDA-approved indication in the best interest of their patients."5 The Society of Obstetricians and Gynaecologists of Canada (SOGC) currently has no position paper regarding induction of labour.

Misoprostol tablets have been used intravaginally for induction of labour in the third trimester for over 7 years at Fort St. John Hospital & Health Centre. Based on legal advice from the BC Health Care Risk Management Society, the Continuing Quality Improvement Committee at our hospital stopped the use of misoprostol for this indication in September 2001. The perception of the physicians who commonly prescribed misoprostol tablets intravaginally for induction of labour and the maternity nurses who monitored the patients, is that this method is more effective than dinoprostone gel (i.e., shorter time to delivery and less frequently requiring oxytocin augmentation) without additional adverse effects.

We performed a retrospective chart review of induction of labour in the third trimester using intravaginal misoprostol in 1998, focussing on the need for tocolysis, the need for oxytocin augmentation, the incidence of failed induction, the incidence of uterine rupture, and the neonatal Apgar scores. We compared the results with induction of labour using dinoprostone gel in 1995.

Methods

Study site

Fort St. John Hospital & Health Centre is a 64-bed community hospital. The city of Fort St. John, BC, has a population of approximately 16 000 and serves as the regional referral centre for the entire North Peace region of BC (pop. 31 000). There is a high birth rate per capita (15.9/1000), with approximately 480 babies delivered each year. Between 1995 and 1998 there was a turnover of the obstetrician and of 3 of the 10 family practitioners who practised obstetrics

Study population

Contraindications to induction through the use of misoprostol include transverse lie, absolute cephalopelvic disproportion, placenta previa, active genital herpes, presence of uterine scar, and vaginal birth after cesarean section (VBAC). Contraindications to dinoprostone gel include all of these except VBAC, although recent evidence raises concerns about even its use in the presence of a uterine scar.6

A retrospective chart review was performed to identify all women who had induction of labour in the third trimester by intravaginal use of misoprostol tablets between Jan. 1 and Dec. 31, 1998. Similarly, a retrospective chart review was conducted to identify all women who had induction through the use of dinoprostone gel between Jan. 1 and Dec. 31, 1995. The year 1998 was chosen because we initially decided in 1999 to look at our use of misoprostol, and 1995 was chosen as the historical control because it was the closest year chronologically during which dinoprostone was predominantly used. The need for tocolysis, the need for oxytocin augmentation, the incidence of failed induction, the incidence of uterine rupture, and the neonatal Apgar scores were noted for each woman.

Table 1 contains the standard procedures at Fort St. John Hospital & Health Centre for the use of misoprostol (instituted in 1996) and dinoprostone gel for induction of labour.

Statistics

The need for tocolysis was compared using Fisher's exact test, and the need for oxytocin augmentation was compared using the chi-squared test.

Results

Study population

There were a total of 481 deliveries in 1995 and 484 deliveries in 1998. During 1995, 133 women had induction of labour: 60 received dinoprostone gel, 22 received intravaginal misoprostol and 51 received intravenous oxytocin alone. During 1998, 188 women had induction of labour: 162 received intravaginal misoprostol and 26 received intravenous oxytocin alone.

The mean patient age was 27.1 years in the dinoprostone group (year studied, 1995) and 26.2 (range 35–42) years in the misoprostol group (year studied, 1998). The mean gestational age in both groups was 41 (range 36–42) weeks, and the most common reason for induction was because term had been exceeded. The median number of misoprostol tablets used was 1 (range 1 to 4). The total number of doses of dinoprostone gel was not captured. Results are summarized in Table 2. The need for tocolysis was not significantly different (Fisher's exact test, $p = 0.27$). The need for augmentation was the same in the 2 groups ($\chi^2 = 0.0$, $p = 0.99$). Although not statistically significant ($\chi^2 = 0.7$, $p = 0.040$), failed induction was less common in the misoprostol group (12.3% v. 16.7%) and 1- and 5-minute neonatal Apgar scores were similar in the 2 groups (median = 9 at 1 min, median = 10 at 5 min).

Discussion

A limitation of our study is its retrospective nature and the use of an historical control group. The misoprostol and dinoprostone populations were similar with respect to mean patient age and reason for induction. Other variables such as patient weight and Bishop's scores could not be compared because they were not consistently recorded.

For the total obstetric population, there was a higher rate of induction in 1998 compared to 1995. We suspected that this was because in March of 1997, the SOGC published a Clinical Practice Guideline recommending that women with an uncomplicated pregnancy who reach 41 to 42 weeks gestation should be offered elective delivery.7 However, the fact that the median gestational age was the same in the 2 groups does not support this.

The medical staff was similar between the 2 time periods so any differences in individual practices should not have influenced the outcome.

Our experience suggests a low incidence of adverse effects when misoprostol is used for induction of labour. In their 2000 review, Sanchez-Ramos and Kaunitz noted an incidence of uterine hyperstimulation in 5.8% of the misoprostol groups and 3.4% of controls.4 Thus we were expecting to see the number of cases of hyperstimulation in our groups to be in the vicinity of 9 for the misoprostol group and 2 for the dinoprostone group. Our numbers do not concur with reports of hyperstimulation associated with misoprostol and, in fact, our anecdotal experience locally is that the use of dinoprostone has required more tocolysis for hyperstimulation than misoprostol has.

Rowlands and coworkers conducted a multicentre, prospective, randomized, controlled trial comparing intravaginal dinoprostone (n = 63) with intravaginal misoprostol 100 µg (n = 63) and found a significantly shorter mean time from insertion of priming agent to vaginal delivery and shorter duration of active labour in the misoprostol group.8 Moreover, women who received misoprostol were less likely to need a second dose of prostaglandin or oxytocin for augmentation of labour. Neonatal outcome was similar in the 2 groups.

The main reason Searle elaborated its warning regarding off-label use of misoprostol was in response to reports of uterine rupture associated with its use. Uterine rupture appears to be a particular concern in cases where there is a uterine scar.9 Because previous cesarean section was a contraindication to its use in our hospital, this was not seen as a concern. The meta-analysis performed by Sanchez-Ramos and Kaunitz suggests that there is a higher incidence of hyperstimulation when using 50 µg as compared to 25 µg;4 however, we have found the 50-µg dose to be well tolerated. This may be because we practise relatively low-risk obstetrics and the patients selected for induction with misoprostol are generally low-risk patients being induced for post dates. We believe that our experience supports the usefulness of misoprostol in the rural setting, as this is predominantly the type of obstetrics being practised.

Cost is a concern with any treatment. Compared to dinoprostone gel, misoprostol tablets are cheaper in terms of drug acquisition price. The cost of half of a misoprostol 100-µg tablet is 13.6 cents versus $44.79 and $53.85 for the 1- and 2-mg doses of dinoprostone gel, respectively.

In our study, more women in the dinoprostone group required cesarean section. The meta-analysis by Sanchez-Ramos and Kaunitz supports this finding.4 Although only misoprostol and dinoprostone inductions were examined in the study, the number of inductions initiated solely with oxytocin was noted. In 1998, fewer women received oxytocin as the initial drug for induction (26/188 in 1998 v. 51/133). We speculate that this is because as physicians gained more experience with misoprostol they perceived it to be a more effective method of labour induction requiring less intensive nursing care. Thus, although the use of oxytocin augmentation was similar in the 2 groups, the overall use of oxytocin in 1998 was much lower than in 1995.

Conclusions

The warning by Searle and the subsequent advice from the BC Health Care Risk Management Society, while understandable, is disappointing and a concern to the staff of Fort St. John. It has been our experience that the use of intravaginal misoprostol has been a safe and useful method of induction of labour. The restriction of its use for this has significant implications for rural hospitals the size of ours, as it inevitably will lead to the use of more oxytocin and more failed inductions with the subsequent problems of decreased patient satisfaction and increased drug acquisition, staffing and operating room costs. There is a large body of evidence supporting the safe use of misoprostol for the induction of labour and this should be used to promote the licensing of misoprostol for this indication.

Competing interests: None declared.

Acknowledgments: The authors would like to thank Dee-Ann Stickel for assistance in data collection and Dr. Jim Jamieson for developing the protocol for use of intravaginal misoprostol

for induction of labour.

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Table 1. Protocol for induction of labour using misoprostol (in effect from 1996 to 2001) or dinoprostone gel

Misoprostol			Dinoprostone gel		
Purpose: Ripen cervix for labour induction at post-maturity (41 to 42 weeks)			***Purpose:*** Promote uterine stimulation to ripen the cervix and to prepare for induction of labour in qualifying obstetrical patients		
Contraindications: Transverse lie; absolute cephalopelvic disproportion; placenta previa; active genital herpes; presence of uterine scar; vaginal birth after cesarean			***Contraindications:*** Transverse lie; absolute cephalopelvic disproportion; placenta previa; active genital herpes; and [possibly] presence of uterine scar		
Complications: Fetal distress, headache, diarrhea, abdominal pain, nausea, flatulence, dyspepsia, vomiting					
Equipment: Labour monitoring equipment; Oxygen administration equipment; Applicator with 50 μg misoprostol			***Equipment:*** Labour monitoring equipment; Oxygen administration equipment; Dinoprostone gel 1-mg/pk or 2-mg/pk (refrigerated)		
	Procedure	***Key points***		***Procedure***	***Key points***
1.	Monitor obstetrical assessment and vital signs and document on outpatient form	To provide a baseline for subsequent monitoring	1.	Monitor obstetrical assessment and vital signs and document on outpatient form	To provide a baseline for subsequent monitoring
2.	Have patient empty bladder	To ensure patient comfort	2.	Have patient empty bladder	To ensure patient comfort
3.	Fetal monitor strip, 20–30 min	Baseline information	3.	Fetal monitor strip, 20–30 min	Baseline information
4.	Insert 50 μg misoprostol vaginally into fornices under aseptic technique • Prepare immediately before use. Instill misoprostol tablet in applicator with lubricating gel, or physician may insert tablet with gel with fingertip	Performed by **physician**. N.B. If Bishop's score is already at 4, it may only be necessary to give 1 dose in evening	4.	Insert 1 mg dinoprostone gel vaginally into fornices under aseptic technique	Performed by **physician** in early morning. N.B. If Bishop's score is already at 4, it may only be necessary to give 1 dose in evening
5.	Fetal monitor strip for 1 h	Monitor reaction of fetus	5.	Fetal monitor strip for 1 h	Monitor reaction of fetus
6.	If no reaction, discharge patient, to return in 6 h		6.	If no reaction, discharge patient to return in 6 h	
7.	Fetal monitor strip, 20–30 min	To monitor fetal well-being and further induction of labour	7.	Fetal monitor strip, 20–30 min	To monitor fetal well-being and further induction of labour
8.	Repeat vaginal administration of misoprostil 50 μg	To further stimulate uterine contraction	8.	Repeat vaginal administration of 1 mg dinoprostone gel	To further stimulate uterine contraction
9.	Fetal monitor strip for 1 h while maintaining bedrest in low Fowler's position. Record on outpatient form	Monitor reaction of fetus	9.	Fetal monitor strip for 1 h. Record on outpatient form	Monitor reaction of fetus
10.	If no reaction, discharge patient, to return in morning	Ensure patient a comfortable night at home	10.	If no reaction, discharge patient, to return next morning	Ensure patient a comfortable night at home
11.	Reassess patient in morning to ascertain cervical changes	If Bishop's score is 7 or greater, proceed with induction	11.	Reassess patient in morning to ascertain cervical changes	If Bishop's score is 7 or greater, proceed with induction
12.	Fetal monitor strip for 30 min	To obtain baseline prior to further administration of misoprostol	12.	Fetal monitor strip for 30 min	To obtain baseline prior to further administration of dinoprostone gel
13.	If Bishop's score still inadequate, repeat vaginal administration of 50 μg misoprostol		13.	If Bishop's score still inadequate, repeat vaginal administration of 2 mg dinoprostone gel	
14.	Fetal monitor strip for 1 h while maintaining bedrest in low Fowler's position after insertion of misoprostol	Monitor reaction of fetus	14.	Fetal monitor strip for 1 h after insertion of gel	Monitor reaction of fetus
15.	If no change in cervical ripening and Bishop's score is less than 7, discontinue attempts to induce and try again in 3 to 4 days	Discontinue attempts only if Bishop's score is less than 7	15.	If no change in cervical ripening and Bishop's score is less than 7, discontinue attempts to induce and try again in 3 to 4 days	Discontinue attempts only if Bishop's score is less than 7
16.	If Bishop's score is 7 or more, artificial rupture of membranes and induction of labour with IV oxytocin can proceed	See "Induction of Labour with IV Oxytocic Drugs." **Do not start oxytocin within 4 hours of last dose of misoprostol.**	16.	If Bishop's score is 7 or more, artificial rupture of membranes and induction of labour with IV oxytocin can proceed	See "Induction of Labour with IV Oxytocic Drugs."

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Table 2. Comparison of results of labour induction with misoprostol (*n* = 162) and dinoprostone gel (*n* = 60)

Result	Misoprostol, no. of patients* (and %) (and 95% CI)	Dinoprostone, no. of patients* (and %) (and 95% CI)
Need for tocolysis	0 (0–0.018)	1 (1.6) (0.0004–0.089)
Need for augmentation with oxytocin	19 (11.7) (0.072–0.177)	7 (11.7) (0.048–0.266)
Need for cesarean section	20 (12.3) (0.077–0.184)	10 (16.7) (0.083–0.285)
Uterine rupture	0 (0–0.018)	0 (0–0.049)
Median neonatal Apgar score at 1 min	9	9
Median neonatal Apgar score at 5 min	10	10

*Except where indicated

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Use of epidural analgesia for labour and delivery in Alberta

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CJRM 2002;7(4):265-70

See responses from: D. O'Neil; D. Johnson

Purpose: To describe the use of epidural analgesia during vaginal deliveries in urban and rural hospitals in Alberta between Apr. 1, 1997, and Mar. 31, 2000. The influence of hospital organizational factors (i.e., the training of the physician who administers the analgesia and the number of deliveries per year per hospital) on the use of epidural anlagesia is also explored.

Methods: Using physician claims, hospital abstracts, vital statistics, birth registrations and the Alberta Health Care Insurance Plan registry, the pattern of epidural analgesia use in Alberta is explored.

Results: Use of epidural analgesia during labour for vaginal deliveries was 30% during the study period. In small, rural hospitals (up to 99 deliveries per year) the use was 3% to 4%. Use increased to 45% in specialized tertiary care hospitals in Edmonton and Calgary. The chance of receiving epidural analgesia during labour for vaginal delivery was 25 times greater in the largest versus smallest facilities, after controlling for previous live births, birthweight, prematurity, breech or cephalic presentation, and reproductive system comorbidity. Most epidural procedures for vaginal delivery provided by general practitioners (GPs) were in larger, rural hospitals (100 to 405 deliveries per year). Anesthetists provided most epidural procedures for vaginal deliveries in regional and Edmonton or Calgary area hospitals. The use of epidural analgesia in the larger, rural hospitals (9% of vaginal deliveries) and regional centres (10%) was similar despite any difference in the training of the physician who administered the analgesia (i.e., anesthetist or GP).

Conclusion: There exists a stark rural/urban geographical division in the use of epidural analgesia in Alberta. The use of epidural analgesia in the larger, rural hospitals and regional centres was similar despite any difference in the training of the physician who administered the analgesia. We

conclude that the training of the physician who administers the analgesia and the number of yearly deliveries per hospital are influential in determining the use of epidural analgesia during labour for vaginal delivery.

Objet : Décrire l'utilisation de l'analgésie péridurale pendant des accouchements par voie vaginale dans des hôpitaux urbains et ruraux de l'Alberta entre le 1er avril 1997 et le 31 mars 2000. On explore aussi l'effet des facteurs organisationnels de l'hôpital (c.-à-d. la formation du médecin qui administre l'analgésie et le nombre d'accouchements effectués par année dans l'hôpital) sur le recours à l'analgésie péridurale.

Méthodes : On étudie les tendances du recours à l'analgésie péridurale en Alberta en se fondant sur les demandes de paiement des médecins, des résumés d'hôpitaux, les statistiques démographiques, les naissances inscrites et le registre du régime d'assurance soins de santé de l'Alberta.

Résultats : Le recours à l'analgésie péridurale pendant le travail préparatoire à un accouchement par voie vaginale s'est établi à 30 % pendant la période d'étude. Dans les petits hôpitaux ruraux (jusqu'à 99 accouchements par année), l'utilisation a atteint 3 à 4 %. Elle a grimpé à 45 % dans les hôpitaux de soins tertiaires spécialisés d'Edmonton et de Calgary. Une patiente avait 25 fois plus de chances de recevoir une analgésie péridurale pendant le travail préparatoire à un accouchement par voie vaginale dans les gros établissements que dans les petits, compte tenu du contrôle des naissances vivantes antérieures, du poids à la naissance, de la prématurité, de la présentation par le siège ou le crâne et d'une comorbidité de l'appareil reproducteur. La plupart des injections péridurales administrées par des omnipraticiens (OP) en vue d'un accouchement par voie vaginale ont été administrées dans les grands hôpitaux ruraux (100 à 405 accouchements par année). Des anesthésistes ont administré la plupart des injections péridurales en vue d'un accouchement par voie vaginale dans les hôpitaux régionaux et ceux de la région d'Edmonton et de Calgary. Le recours à l'analgésie péridurale dans les grands hôpitaux ruraux (9 % des accouchements par voie vaginale) et les centres régionaux (10 %) était semblable en dépit de toute différence au niveau de la formation du médecin qui a administré l'analgésie (c.-à-d. anesthésiste ou OP).

Conclusion : Il existe un clivage géographique frappant entre les milieux ruraux et urbains en ce qui concerne le recours à l'analgésie péridurale en Alberta. Le recours à cette technique dans les grands hôpitaux ruraux et les centre régionaux se ressemblait en dépit de toute différence au niveau de la formation du médecin qui a administré l'analgésie. Nous concluons que la formation du médecin qui administre l'analgésie et le nombre d'accouchements annuels pratiqués dans l'hôpital ont un effet sur l'administration d'une analgésie péridurale pendant le travail préparatoire à un accouchement par voie vaginale.

Introduction

Pain relief for labour may be provided effectively using a variety of techniques.1-3 The published medical literature supports using a local anesthetic delivered by epidural in order to provide greater quality of pain relief compared to parenteral narcotics.1 If appropriate physician and nursing staff are available, epidural analgesia should be one of the analgesic options offered by every hospital providing delivery services.1

The selected pain relief technique depends in part on patient-centred factors including patient/physician preferences, the medical status of the patient, and the progress of labour. Hospital organizational factors may also play a significant role in obstetrical pain relief. Over the last decade, obstetrical services have become more concentrated, with fewer small, rural hospitals providing care.4 Some studies note that the use of epidural analgesia increased with the number of births occurring at the specific hospital site.5,6 The influence of physician training (anesthesia specialist versus general practice) upon the use of epidural analgesia is not well described.

In this study the use of epidural analgesia for obstetrical labour in Alberta during the years 1997 to 2000 is described using administrative databases. The influence of the specialty of the physician who is providing the service and the number of yearly deliveries per hospital upon the use of epidural analgesia is explored.

Methods

Four administrative health service databases were used, and the analysis was done within the protected environment of Alberta Health and Wellness governed by provincial legislative guidelines on the confidentiality of health information:

- Canadian Institute for Health Information (CIHI) inpatient Discharge Abstract Database (DAD) for the province of Alberta for 1997/98 to 1999/00;
- Alberta Claims Assessment System Database for 1997/98 to 1999/00;
- Alberta Vital Statistics (VS) Birth Registry Database for 1997-1999; and
- Alberta Health Care Insurance Plan (AHCIP) Registry Database for 1997 to 2000.

Maternal deliveries were identified using the CIHI DAD. Ninety-nine point seven percent of births that occur in Alberta every year take place in acute care facilities. The obstetrics main patient service field for all hospital discharges from 1997/98, 1998/99 and 1999/00 were extracted and encompassed the last available 3 fiscal years. The decision to combine 3 years of data was made because the volume of deliveries in some facilities was small. No stillbirths were included. The use of forceps or vacuum for delivery (International Classification of Diseases [ICD-9-CM] 720, 721, 722x, 723x, 724, 725x, 726, 7271, 7279, 733) was extracted from any of the 10 CIHI DAD procedural codes fields. Medical or surgical induction (ICD-9-CM 734, 7301, 7309) was extracted from any of the 10 CIHI DAD procedural codes fields.

In order to obtain neonatal data (sex, birthweight, date and time of birth), the newborn main patient service field was extracted from CIHI DAD for 1997/98, 1998/99 and 1999/00. Using the AHCIP registry, we matched each neonate to each delivering mother. Average length of stay after delivery for the mothers was calculated using the neonatal admission time and date and the maternal discharge time and date.

Birth records for each delivery were obtained. Vital statistic birth records contain questions to be completed by the mother and family physician or pediatrician within 24 hours of delivery. Because the VS Birth Registry Database does not record a patient's unique AHCIP registry number, a linkage to maternal records for each of the 3 years was done by matching to neonatal birth date (365 unique values), birth weight (3007 unique values), delivery site (87 facilities), neonatal sex, and maternal age (39 unique values). Records from vital statistics are collated by calendar year, whereas all other administrative data are collated by fiscal year (April 1 to March 31). Vital statistics data from Jan. 1 to Mar. 31, 2000, were unavailable. Variables unique to vital statistics incorporated into this study were number of total maternal live births, breech or cephalic presentation, neonatal Apgar at 1, 5 and 10 min, and gestational weeks.

Physician claims were extracted from physician claims for identified maternal deliveries file using the Canadian Classification of Procedures (CCP) code.7 The anonymous maternal identifier for delivery hospital separations was used to identify specific billing records for these same mothers from physician claims. To account for time between the service date and a claim for reimbursement, all physician claims for at least 6 months after the delivery date were queried. These billing records included a range of anesthesia services, including epidural (CCP code 16.91C) for obstetrical procedures, the role of the provider (anesthesia), and the specialty of the provider (anesthesiology, general practice). The absence of an anesthetic claim for a vaginal delivery was verified using the in-hospital CIHI record in which the anesthetic type (none, epidural/spinal, general) was linked to the ICD-9-CM procedural code for vaginal delivery.

Defining facility size and service region

Facilities providing maternal delivery services were categorized by the average number of deliveries each had, per year, over the 3-year study period: size 1 (1-49 deliveries); size 2 (50-99 deliveries); size 3 (100-405 deliveries); size 4 (631-1691 deliveries); size 5 (any hospital located in the metropolitan health regions of Edmonton or Calgary); size 6 (hospital with a Level 3 [highest intensity of care] neonatal intensive care unit) (there was one size 6 hospital in each of Edmonton and Calgary health regions.

Statistics

Statistical modelling was done by forward stepwise logistic regression. The order of factor entry into the model was used to rank the magnitude of factor influence. The number of cases included in the models varied because data for each factor influencing outcomes were not available for all deliveries. Significance was defined as $p < 0.05$.

The model included the following factors influencing outcomes.

- Dependent variable: use of epidural (yes, no) for vaginal delivery
- Facility size, as defined above
- Preterm (less than 37 weeks)
- Low birthweight (less than 2500 grams)
- Breech or cephalic delivery
- Previous live births
- Any maternal comorbidity (any maternal reproductive system coexisting diagnosis associated with pregnancy, including multiple pregnancy, malposition or malpresentation, abnormalities of cervix or uterus, and cephalopelvic disproportion abstracted in any of the 15 CIHI DAD diagnosis codes [ICD-9-CM 651 to 654] or CIHI designation as previous cesarean sections 602, 603, 608, 610).

Results

There were 90 991 vaginal deliveries in Alberta between Apr. 1, 1997, and Mar. 31, 2000. Data from vital statistics were unavailable for the period Jan. 1, 2000, to Mar. 31, 2000; therefore, 7197 deliveries were not available for matching. Of the remaining 83 794 deliveries 67 181 (80%) were matched to the VS Birth Registry Database and were available for modelling using variables obtained from this source.

Table 1 illustrates the relationship between facility size (i.e., number of deliveries performed at the hospital site) and the use of epidural analgesia during labour for vaginal delivery. As shown in Table 2 these epidurals were performed by a large number of anesthetists and general practioners (GPs). All physicians who submitted a claim for at least 1 epidural anesthetic during a vaginal delivery at any time during the 3-year period were included (Table 2) The median number of claims for epidurals is 10-fold greater for anesthetists compared to GPs. The median number of epidural procedures for vaginal delivery claimed by GPs is less than 4 per annum, and the corresponding number for anesthetists is 33.

Table 2 also illustrates the relationship between facility size and the type of physician submitting a claim for an epidural analgesia during vaginal delivery. Most epidural procedures for vaginal delivery are provided by GPs in facility sizes 1 to 3 (i.e., hospitals that performed up to 405 deliveries during the 3-year period). Anesthetists provide most epidural procedures for vaginal deliveries in regional and Edmonton or Calgary area hospitals (facility sizes 4 to 6). The epidural rate for vaginal deliveries is similar in facility sizes 3 and 4 (9% and 10% respectively) despite the fact that the majority of procedures are performed by GPs (93%) in facility size 3 and by anesthetists in facility size 4 (72%). The median number of epidural procedures claimed by individual GPs by facility size type is greater than that for individual anesthetists in facility sizes 1 to 4. Only in facility sizes 5 and 6 do individual anesthetists perform a higher number of

epidurals for vaginal delivery.

Table 3 illustrates the effect of facility size upon the use of epidural analgesia for vaginal delivery after controlling for other factors influencing outcomes. The odds of receiving an epidural during labour for vaginal delivery increases from 3 times to 25 times as the size of the facility increases. The order of entry into the model and the listing of variables indicate the relative strength of the factors influencing outcomes. Again, facility size has the greatest influence when compared to other maternal factors such as first live birth or reproductive system comorbidity. Category totals in Tables 1 to 3 vary due to a variation in database source and completeness.

Discussion

We found that the overall provincial use of epidural analgesia during labour for vaginal delivery was 30% in this retrospective study for the time period Apr. 1, 1997, to Mar. 31, 2000. The epidural rate for Alberta was similar to that from other industrialized countries.5,8 However, within Alberta, there was a stark geographical division in the use of epidurals. The high rate of epidural use was predominately found in hospitals located in the 2 metropolitan health regions (Edmonton and Calgary), with decreasing frequencies in both designated regional hospitals and the lowest use in small, rural hospitals. The importance of hospital geographic location was greater than the patient factors influencing outcomes that were available from administrative databases. As well, the use of epidural analgesia in the larger rural hospitals and regional centres was similar despite the difference in the type of physician that predominantly performs the service (anesthetist or GP). We conclude that the organizational factors of physician specialty providing the service and the number of yearly deliveries per hospital are influential in determining the use of epidural analgesia for vaginal delivery.

The availability of choice concerning labour analgesia and an increased demand for epidural analgesia in urban centres has resulted in an inequitable distribution in the province. Since the introduction of epidural analgesia 30 years ago there is now a greater demand for this procedure. This could be due to improvements with the procedure and could also be due to the fact that physicians and health organizations are being lobbied by a population that now has higher expectations for pain relief and an increased familiarity with the procedure.9 In studies published in the early 90s, the rate of epidural analgesia was shown to be lower in rural hospitals.5,10 For example, the rate of epidurals during labour for vaginal deliveries in a rural Saskatchewan hospital with 1224 deliveries between 1984 to 1988 was 4.6%.10 We attempted to simultaneously assess the effect of patient factors that may alter the use of epidurals along with the facility size. We found that previous births, reproductive system comorbidity, prematurity and low birthweight were less influential than small facility size in influencing the use of epidurals.

A high epidural rate may be considered beneficial because it affords superior obstetrical pain relief.11 Opposing the desirability of a greater epidural rate is the generally unwanted

connotation that childbirth is being medicalized. As well, epidurals may have risks.12-18 If increasing the use of epidural analgesia is the desired goal, then a number of factors must be considered. Continuous infusion of low-dose epidural analgesia negates the need for physicians to stay and watch. Physician reimbursement for epidural procedures has been demonstrated to be one factor in determining use.11 In the US,19 insurance companies have tried to deny epidural analgesia on the basis of increased costs. The number of rural Ontario hospitals providing epidural analgesia decreased between 1988 and 1995;4 this is similar to the US trend of fewer small, rural hospitals performing deliveries.20 In the absence of an enabling organization, the resources required to facilitate epidural analgesia are unlikely to be provided. As a result, patients may choose to give birth in a hospital other than the one closest to their home. Metropolitan hospitals are within a few hours travelling time for the majority of Albertans. Twenty percent of mothers who are carrying only one child (which is known to weigh at least 2500 g) and who plan to have a vaginal delivery, bypass the nearest facility that performs deliveries.21 The reasons are unknown, but we can speculate that patients may desire services not locally available.

In smaller hospitals, the number of epidurals per facility performed by GPs was greater than for anesthetists. In the largest rural hospitals, GPs provided epidural analgesia as frequently as anesthetists working in regional hospitals. We provide no new data on the advantages or disadvantages of epidurals performed by specialists versus nonspecialists. Nor do we make any inferences from our data concerning outcomes by high- or low-volume epidural providers. However, any organization attempting to increase its use of epidurals does not need to be constrained in only considering anesthetists nor assume that a high rate for the procedure is ensured by the mere presence of anesthesia specialists.

Our analysis divided hospitals into categories according to the number of deliveries per year for each. However, within hospitals with similar delivery volumes, variation in the use of epidurals still existed. Most striking is that one of the highest uses of epidurals is in a medium-sized rural hospital22 staffed by 2 GP/anesthetists. This high rate was compared to other similar-sized hospitals and to the largest metropolitan hospitals with a dedicated epidural service. A survey of Alberta hospitals that provided delivery services in 1994 reported that maternity units with high epidural rates had developed a consensus among all clinicians that epidural analgesia was an important and helpful method of pain relief.22 In maternity units with lower epidural rates this consensus did not exist. These lower-rate maternity units also reported that their patients would not take advantage of the epidural service. However, both patients and physicians stated that pain issues were only discussed in relation to direct patient questions.22

Limitations

Population-based administrative database research is highly generalizable although limited in clinical detail. We were able to verify both deliveries and performance of epidurals by comparing 2 independent databases. However, category totals (by provider type or facility size) vary due to this variation in data source and completeness (Tables 1 to 3). We are reliant on those completing

other data fields for non-verifiable data. Anesthetist or GP identification relate to the College of Physicians and Surgeons of Alberta (CPSA) classification. GPs may have specialist training not recognized by the CPSA. The link to the VS Birth Registry Database captured 80% of cases. We did not detect a systematic bias between matched and non-matched cases; however, this possibility exists.

Conclusion

In Alberta between Apr. 1, 1997, and Mar. 31, 2000, the use of epidural analgesia was highest in the 2 metropolitan health regions (Edmonton and Calgary), with decreasing frequencies in regional hospitals and the lowest use being in small, rural hospitals. The use of epidural analgesia in the larger rural hospitals and regional centres was similar despite the difference in the specialist physician that predominantly performs the service.

This article has been peer reviewed.

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Competing interests: None declared.

Acknowledgements: This work was partially supported by the Alberta Centre for Health Services Utilization Research. The opinions and conclusions expressed in this paper are those of the authors and no endorsement by the Alberta Ministry of Health and Wellness is implied.

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Table 1. Number of deliveries in which the patient received epidural analgesia, by facility size

Facility size* (no. of sites)	Total no. of deliveries	No. of epidural procedures (% of total no. of deliveries)
1 (12)	1 761	45 (2.6)
2 (12)	2 319	92 (4.0)
3 (30)	14 007	1 285 (9.0)
4 (5)	14 308	1 474 (10.0)
5 (5)	37 667	14 875 (39.0)
6 (2)	20 929	9 363 (45.0)
Total	90 991	27 134 (30.0)

* Size defined as follows: size 1 (1–49 deliveries); size 2 (50–99); size 3 (100–405); size 4 (631–1691); size 5 (any hospital in the metropolitan health regions of Edmonton or Calgary); size 6 (hospital with a highest intensity of neonatal intensive care unit).

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Table 2. Type and number of physicians providing epidural analgesia during the study period

Facility size*	No. of epidural procedures, by physician training	
	Anesthetist (*n* = 188)	General practitioner (*n* = 95)
1	8	44
2	12	81
3	92	1 208
4	1 056	411
5	13 285	1 604
6	9 268	15
Total	23 719	3 363

* See Table 1 for definitions of size.

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Table 3. Modeling the use of epidural analgesia during labour for vaginal delivery by facility size, controlling for other factors influencing outcomes

Factors influencing outcomes (Model *n* = 67 539)	No. for each factor influencing outcomes	Odds ratio (and 95% CI)
Facility size 3	11 086	3.01 (2.22–4.08)
Facility size 4	11 779	3.19 (2.36–4.31)
First live birth	26 613	3.01 (2.90–3.12)
Maternal reproductive system comorbidity	6 261	2.33 (2.19–2.48)
Facility size 6	17 248	25.64 (19.05–34.51)
Facility size 5	24 232	21.25 (15.79–28.58)
Gestation < 37 wk	3 718	0.79 (0.72–0.86)
Birthweight < 2500 g	2 694	0.77 (0.70–0.86)
Breech delivery	631	0.79 (0.65–0.95)

Note: rank order listing of factors influencing outcomes indicates relative strength.

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Canadian Emergency Department Triage and Acuity Scale (CTAS): Rural Implementation Statement

SRPC-ER Working Group members: Karl Stobbe, MD, CCFP(EM), (Chair), Beamsville, Ont.; Dale Dewar, MD, CCFP, Wynyard, Sask.; Christine Thornton, Hamilton, Ont.; Sylvain Duchaine, MD, Trenton, Ont.; Pierre-Michel Tremblay, MD, Moncton, NB; and David Howe, MB, CCFP, Parrsboro, NS.

CJRM 2002;7(4):271-4

Background
The Canadian Emergency Department Triage and Acuity Scale (CTAS) has been recognized as a significant improvement in standardizing triage in Canadian emergency departments (EDs), both urban and rural. Since its publication an increasing number of Canadian EDs have implemented the CTAS. It was intended to improve patient care through more appropriate triaging of patients, but a number of adverse effects from its implementation have been encountered in rural EDs.

In many rural communities, family physicians or general practitioners (GP/FP) provide all care, emergency or otherwise. In general, these communities have a small number of physicians who spend many hours on-call, often providing care in the emergency department (ED), but also caring for hospital in-patients, doing obstetrical deliveries and visiting patients in nursing homes. Some of the same physicians also function as GP anesthetists, or GP surgeons in their communities. Night call is often provided from home.

Nursing staff in the rural ED is similarly not specialized. In many communities the same nurses provide care on the medical-surgical ward, obstetrical ward, recovery room and the intensive care unit.

While the volume of patients in the rural ED is generally lower than in the urban setting, the range of pathology is the same as that seen in tertiary care centres.

In 1999 the Society of Rural Physicians of Canada's Emergency committee (SRPC-ER) began

discussions on the issues raised by the implementaion of the Canadian Emergency Department Triage and Acuity Scale (CTAS) in rural communities. By 2000, the CTAS became the major issue before the committee, and work began to develop a rural implementation process. A focus group was held at the SRPC annual meeting to delineate the issues faced in various rural communities using the CTAS.

Various rural physicians reported some combination of the following.

- Inappropriate categorization of patients.
- Delays in triage due to inadequate staffing of nurses.
- Delayed initial resuscitation (CPR, IV access, defibrillation) while waiting for physician arrival.
- Inappropriate triage of pediatric cases.
- Ambulance using a different triage scale resulting in an ED unprepared for seriously ill patients.
- No communication between ambulance and ED, resulting in unnecessary delays in care after arrival in hospital.
- Physicians not called to the ED until after patient arrival, resulting in unnecessary delays in patient care.
- No reference to obstetrical patients in the CTAS.
- Strict adherence to the time frames in the CTAS resulting in physicians being called in at night for non-urgent cases. This was increasing the already difficult on-call burden on physicians, with several expressing intent to leave. This posed a threat to access to emergency care in a number of communities and proved to be the most prevalent issue.

The SRPC-ER volunteer working group wrote a draft statement to address these issues, which was revised with input from another focus group of rural physicians at the SRPC conference in April 2001. Further revision based on input from Dr. Michael Murray, chair of the National CTAS Working Group, took place in the summer of 2001.

It was approved in principle by the National CTAS Working Group in April 2002 and further revision, with input from the Canadian Association of Emergency Physicians (CAEP), L'Association des médecins d'urgence du Québec (AMUQ) and the National Emergency Nurses Affiliation (NENA), took place from April to August 2002.

The statement was then approved by CAEP, AMUQ, NENA, and SRPC.

The Statement

Introduction
The Canadian Emergency Department Triage and Acuity Scale (CTAS) was developed by CAEP in 1998.1 The objectives of CTAS were to "more accurately define patients' needs for timely care

and to allow emergency departments to evaluate their acuity level, resource needs and performance against certain operating 'objectives.' "1 The National CTAS Working Group believes that Canadians living in rural communities are entitled to the same level of emergency medical care as urban residents.

Since the publication of the document, many Canadian EDs, both urban and rural, have adopted its recommendations. Patient flow has been altered to allow patients to be seen by a triage nurse upon first entering the ED. Nursing staff have been trained in its application.

Triage by nursing staff, when applied as per the CTAS document, can be very helpful in sorting patients waiting for care.

Problems have arisen in sparsely staffed rural EDs when trying to implement this system. Some institutions have provided inadequate training to their nursing staff for proper implementation. Physician resources have been strained when trying to accommodate the time frames suggested in the document for non-urgent problems. This has led to friction between physicians and ED nursing staff, and increased job dissatisfaction among rural physicians, many of whom balance ED work with family practice, hospital in-patient care, obstetrical deliveries and more. In some communities, the demand for strict adherence to quick response times could result in a loss of medical services: physicians may leave town. The CTAS document states, "The time responses are ideals (objectives) not established care standards." However, hospital administrators in many rural communities have demanded physician response within the time frames indicated by the document, despite the lack of evidence to support any "time-to-physician" recommendations. Hopefully research will uncover such data.

In order to address these issues, the following recommendations are intended to assist in the implementation of the CTAS guidelines in rural health care facilities.

Recommendations

1. The CTAS definitions and descriptions of triage Levels I to V should be accepted by rural as well as urban EDs. See section 6 of the CTAS:1 "Rural Emergency Health Care Facilities."

2a. Nursing staff should be trained in the use of the CTAS.

2b. Nursing staff should be involved in the implementation and monitoring of protocols and medical directives.

2c. Rural hospitals must have adequate RN staffing to ensure timely triage for all patients.

3. ED nursing staff should be trained to provide initial resuscitation, including CPR, starting IVs and defibrillation and be familiar with ACLS standards. A pediatric assessment course such as ENPC is desirable.

4a. Ambulance services and EDs should use a common triage scale to reduce the risk of misunderstandings leading to inadequate mobilization of personnel.

4b. Ambulance services should notify receiving hospitals of CTAS Level I and II patients as early as possible.

4c. ED staff should then notify on-call physicians promptly of all CTAS Levels I and II patients coming by ambulance, prior to their arrival in the ED.

5. On-call physicians should be accessible at all times (e.g., by phone, pager), both so they can be called in as required and so they can give direction to ED nurses prior to their arrival.

6. The time frames recommended by the CTAS are reasonable times to physician-directed care (in the absence of evidence). Physician-directed care could include the following.

    - Care provided directly by the physician in person.
    - Telephone advice.
    - Care provided by nursing staff in accordance with medical directives agreed to in advance by the physician. See the next section for more information.*

7. The CTAS makes no reference to obstetrics. Because of the wide variation in obstetrical preparedness between rural EDs, each institution may wish to prepare guidelines for such emergencies. There are very few examples of such protocols available to this committee; hospitals with such protocols are encouraged to submit them for publication on the SRPC Web site (www.srpc.ca).

Protocol for CTAS Level V

*The SRPC-ER committee has developed a protocol (medical directive) for CTAS Level V patients presenting to the ED. Implementing this medical directive should allow rural and remote EDs to continue to provide a high standard of care to their patients while reducing the number of unnecessary visits to the ED by rural physicians. This is not intended to be a vehicle to solve overcrowding in urban EDs (see Box 1).

CTAS Level V includes conditions that may be acute but non-urgent as well as conditions that may be part of a chronic problem with or without evidence of deterioration. The investigation or interventions for some of these illnesses or injuries could be delayed or referred to other areas of the hospital or health care system.

CTAS Level V patients may be triaged by the registered nurse to receive care at a more appropriate time or place if all of the following criteria are met [(a) to (e) inclusive] without contacting the on-call physician.

a. The patient is 6 months of age or older.
b. Vital signs are deemed satisfactory by the nurse, and temperature is 35°C- 38.5°C (38.3°C

for age > 60 years).

c. The patient is assessed as CTAS Level V.
d. After the nursing assessment, there is no clinical indication that the patient may require urgent physician attention.
e. In borderline cases, or where the nurse is unsure, telephone consultation between the nurse and physician has determined that the problem is non-urgent.

When a "non-urgent" patient meets all of the criteria specified above, the patient will be advised that they have been assessed using a set of approved guidelines to determine the urgency of need for medical care and that their problem has been assessed as non-urgent at this time.

The nurse may carry out nursing intervention if appropriate or advise the patient to seek health care services later from a family physician's office, walk-in clinic, make an appointment, or return when the physician will be present in the ED. Always advise the patient that if she or he has further problems or if the condition worsens, to call the hospital or return to the ED. The nurse may use "Patient Letter" (Appendix 1).

Facilities may develop standardized treatment protocols for nursing care and symptom relief. For examples, go to the SRPC Web site.

Documentation/reporting

Documentation should follow the same process as all other ED visits, and should include the CTAS level, nursing assessment, any nursing interventions and discharge instructions. These should be reviewed by the on-call physician early the next day, and any suggested changes should be initiated by the physician and communicated to the nurse involved. Follow-up by the physician would be documented on the same outpatient form.

Evaluation/monitoring/audit

Ongoing monitoring is essential to ensure that the directives are effective and safe. Keeping a log of the patients triaged to receive care at a later time or in another location, and of any changes in care initiated by the physician will allow hospitals to monitor the effectiveness of the protocol and institute any necessary changes to improve the process. Monitoring, audit, and ensuring the protocols are kept up-to-date is the joint responsibility of the physicians and hospital.

Responsibility for care

Care provided by nursing staff under a medical directive remains the responsibility of the on-call physician. It is the responsibility of the physicians providing on-call services to the community to ensure that protocols and medical directives constitute good medical care, and that they remain up-to-date. It is the responsibility of the hospital to ensure that nurses have adequate training to implement the medical directives, and to monitor that they are being followed.

Statement approved by the Society of Rural Physicians of Canada, the Canadian Association of Emergency Physicians, L'Association des médecins d'urgence du Québec, and the National Emergency Nurses Affiliation.

Competing interests: None declared.

La version française de cet énoncé est disponible sur le site web de la SMRC (www.srpc.ca; cliquez sur JCMR ce qui vous amènera au numéro d'automne 2002) et sera publié dans le numéro d'hiver 2003 du JCMR.

This Statement was published in the Fall issue (2002;25[2]:24-5) of Outlook, the official publication of NENA (National Emergency Nurses Affiliation), and will also appear in an upcoming issue of the Canadian Journal of Emergency Medicine, the Journal of the Canadian Association of Emergency Physicians.

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Box 1. Medical directives / Treatment protocols

An example of an acceptable medical directive for CTAS Level IV patients in rural and remote hospitals is under development.

A number of rural hospitals have already developed a variety of medical directives so that physician-directed care can be initiated by nursing staff prior to the arrival of the physician. These vary in their detail and in the range of problems addressed. In some rural communities it may be necessary to implement more detailed or less detailed protocols than the one in this document. Examples of these are available on the SRPC Web site (www.srpc.ca). They can be downloaded and modified to accommodate local circumstances.

Communities with functioning protocols are invited to submit them to the SRPC-ER committee so they can be shared with others. Over time it is expected that these will form a comprehensive repository of well thought out and produced medical directives from across the country, and perhaps beyond.

The CTAS is currently undergoing review. The SRPC is now represented on the National CTAS Working Group. Rural physicians are encouraged to send comments or suggestions for improvement to the SRPC representative on the National CTAS Working Group via the SRPC Web site.

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Appendix 1. "Patient Letter"

Facility name
Mailing address
Phone number

Dear Patient:

The Emergency Department is intended for those patients who require medical attention on an emergent or urgent basis. You have been assessed by a nurse who uses a set of approved guidelines to determine the urgency of need for medical care. Your problem has been assessed as non-urgent at this time.

We recommend that you take the following action:

- Make an appointment to see your family doctor.
- Return to the hospital at _____ am/pm.

If you have any further problems, or if your condition worsens, please call the hospital or return to the Emergency Department.

Dr. XXXXXXXXXX
ED Medical Director

Dr. XXXXXXXXXXX
Emergency physician on call

_____ _____
Time Date

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L'échelle canadienne de triage et de gravité pour les départements d'urgence (ÉTG) : énoncé sur l'implantation en milieu rural

Membres du Groupe de travail CU-SMRC : Karl Stobbe, MD, CCMF (MU), président, Beamsville (Ont.); Dale Dewar, MD, CCMF, Wynyard (Sask.); Christine Thornton, Hamilton (Ont.); Sylvain Duchaine, MD, Trenton (Ont.); Pierre-Michel Tremblay, MD, Moncton (N.-B.); David Howe, MB, CCMF, Parrsboro (N.-É.)

Contexte
The L'échelle canadienne de triage et de gravité pour les départements d'urgence (ÉTG) est reconnue comme un progrès important dans la normalisation du triage aux départements d'urgence (DU) tant urbains que ruraux au Canada. Depuis sa publication, de plus en plus de DU du Canada l'ont mise en œuvre. Elle devait améliorer le soin des patients en améliorant leur triage, mais son implantation a causé de nombreux effets indésirables dans les DU ruraux.

Dans beaucoup de communautés rurales, les médecins de famille ou les omnipraticiens dispensent tous les soins, d'urgence ou autres. Ces communautés comptent en général peu de médecins, qui font de nombreuses heures de garde et dispensent souvent des soins à l'urgence, mais s'occupent aussi de patients hospitalisés, pratiquent des accouchements et visitent des patients dans des foyers de soins. Certains de ces médecins œuvrent aussi comme anesthésistes ou chirurgiens dans leur localité. Ils font souvent de la garde de nuit à partir de chez eux.

De même, le personnel infirmier des départements d'urgence ruraux n'est pas spécialisé. À beaucoup d'endroits, ce sont les mêmes infirmières qui dispensent des soins dans la salle de médecine-chirugie, la salle d'obstétrique, la salle de réveil et les soins intensifs.

Même si les départements d'urgence ruraux accueillent en général moins de patients que les départements urbains, l'éventail des pathologies est le même que celui que traitent des centres de soins tertiaires.

En 1999, le Comité des urgences de la Société de la médecine rurale du Canada (CU-SMRC) a entrepris des discussions sur les enjeux soulevés par l'implantation de L'échelle canadienne de triage et de gravité pour les départements d'urgence (ÉTG) en milieu rural. En 2000, l'ÉTG était

devenue la grande question de l'heure au comité, qui a amorcé la mise au point d'un processus d'implantation en milieu rural. Au cours de l'assemblée annuelle de la SMRC, un groupe de discussion a cherché à délimiter les enjeux auxquels font face les diverses communautés rurales qui appliquent l'ÉTG.

Divers médecins ruraux ont signalé une combinaison ou l'autre des éléments suivants :

- Patients classés dans la mauvaise catégorie.
- Retards de triage attribuables au manque de personnel infirmier.
- Réanimation initiale retardée (RCR, accès IV, défibrillation) en attendant l'arrivée du médecin.
- Mauvais triage de cas pédiatriques.
- Ambulances qui utilisent une échelle de triage différente à cause de laquelle un DU n'est pas préparé à accueillir des patients gravement malades.
- Aucune communication entre l'ambulance et le DU, ce qui retarde inutilement les soins après l'arrivée du patient à l'hôpital.
- Médecins appelés au DU seulement après l'arrivée du patient, ce qui retarde inutilement les soins.
- Aucune mention des patientes en obstétrique dans l'ÉTG.
- Observation rigoureuse des délais prévus dans l'ÉTG, ce qui entraîne l'appel de médecins la nuit pour des cas non urgents, alourdissant ainsi le fardeau déjà lourd que les périodes de garde imposaient aux médecins. Plusieurs ont dit avoir l'intention de partir, ce qui a posé une menace pour l'accès aux soins d'urgence dans de nombreuses communautés et a constitué le principal problème.

Le CU-SRMC, constitué de bénévoles, a rédigé un projet d'énoncé sur ces questions, qui a été révisé avec la contribution d'un autre groupe de réflexion constitué de médecins ruraux au cours de la conférence de la SRMC en avril 2001. Une autre révision fondée sur les commentaires du Dr Michael Murray, président du Groupe de travail national sur l'ÉTG, a eu lieu au cours de l'été 2001.

Le Groupe de travail national sur l'ÉTG a approuvé l'énoncé en principe en avril 2002. L'Association canadienne des médecins d'urgence (ACMU), l'Association des médecins d'urgence du Québec (AMUQ) et l'Association nationale des infirmières et infirmiers d'urgence (ANIIU) ont contribué à la révision qui a suivi et a duré d'avril à août 2002.

L'ACMU, l'AMUQ, l'ANIIU et la SMRC ont ensuite approuvé l'énoncé.

L'énoncé

Introduction
L'ACMU a mis au point L'échelle canadienne de triage et de gravité pour les départements

d'urgence (ÉTG) en 19981. L'ÉTG visait à établir «une relation entre les besoins des patients en soins et les délais raisonnables pour les rendre, en plus de permettre aux DUs d'évaluer la "lourdeur" de leur clientèle, leurs besoins en ressources, et leur capacité à répondre à certains objectifs opérationnels1». Le Groupe de travail national sur l'ÉTG est d'avis que les Canadiens vivant en milieu rural ont droit à des soins médicaux d'urgence de même niveau que ceux des régions urbaines.

Depuis la publication du document, beaucoup de DU du Canada, tant urbains que ruraux, en ont adopté les recommandations. On a modifié la circulation des patients pour qu'une infirmière préposée au triage les accueille à leur arrivée au DU. Le personnel infirmier a reçu de la formation sur l'application de l'échelle.

Effectué conformément au document sur l'ÉTG par le personnel infirmier, le triage peut être très utile lorsqu'il s'agit de trier des patients en attente.

Des problèmes ont surgi dans des département d'urgence ruraux qui manquent de personnel lorsqu'ils essaient d'implanter ce système. Des établissements ont donné à leur personnel infirmier une formation insuffisante sur la bonne façon de l'implanter. Les effectifs médicaux ont été soumis à des pressions lorsqu'ils ont essayé de tenir compte des délais suggérés dans le document au sujet des problèmes non urgents, ce qui a causé des frictions entre les médecins et le personnel infirmier du DU, et amplifié l'insatisfaction au travail chez les médecins ruraux, dont beaucoup cherchent à établir un équilibre entre leur travail à l'urgence et la médecine familiale, le soin de patients hospitalisés et les accouchements, notamment. À certains endroits, l'observation rigoureuse des temps d'intervention rapide pourrait pousser les médecins à partir. On lit dans le document sur l'ÉTG que les délais de réponse constituent des idéaux (des objectifs) et non des normes de soin établies. Les administrateurs d'hôpitaux de nombreuses communautés rurales ont toutefois exigé que les médecins répondent dans les délais indiqués par le document, même s'il n'y a pas de preuves pour appuyer les recommandations portant sur le délai d'accès au médecin. Nous espérons que la recherche permettra de découvrir de telles données.

Pour tenir compte de ces questions, les recommandations suivantes visent à aider à implanter le guide sur l'ÉTG dans les établissements ruraux de soins de santé.

Recommandations

1. Les départements d'urgence ruraux autant qu'urbains devraient accepter les définitions de l'ÉTG et les descriptions des niveaux I à V du triage. Voir section 6 de l'ÉTG1 : «Triage dans les unités de soins d'urgence rurales».

2a. Il faudrait donner au personnel infirmier de la formation sur l'utilisation de l'ÉTG.

2b. Les membres du personnel infirmier devraient participer à l'implantation et à la surveillance des protocoles et des directives médicales.

2c. Les hôpitaux ruraux doivent disposer d'un effectif infirmier suffisant pour trier rapidement tous les patients.

3. Il faudrait donner au personnel infirmier des départements d'urgence la formation nécessaire pour pratiquer la réanimation initiale, y compris la RCR, la mise en place de perfusions IV et la défibrillation, et bien connaître les normes SARC. Un cours d'évaluation pédiatrique comme le cours ENPC est souhaitable.

4a. Les services ambulanciers et les départements d'urgence devraient utiliser une échelle de triage commune afin de réduire le risque de malentendus qui entraînent une mobilisation inadéquate du personnel.

4b. Les services ambulanciers devraient prévenir le plus rapidement possible les hôpitaux d'accueil de l'arrivée de patients de niveaux I et II de l'ÉTG.

4c. Le personnel du département d'urgence devrait alors prévenir rapidement les médecins de garde de l'arrivée en ambulance de tous les patients des niveaux I et II de l'ÉTG, avant leur arrivée au département d'urgence.

5. Les médecins de garde devraient être accessibles en tout temps (p. ex., par téléphone, téléavertisseur) à la fois pour qu'on puisse les appeler au besoin et qu'ils puissent donner des directives aux infirmières du département d'urgence avant leur arrivée.

6. Les délais recommandés par l'ÉTG sont des délais raisonnables d'attente pour les soins dirigés par le médecin (en l'absence de données probantes). Les soins dirigés par le médecin pourraient inclure les suivants.

    - Soins dispensés directement par le médecin en personne.
    - Conseils au téléphone.
    - Soins dispensés par le personnel infirmier conformément aux directives données d'avance par le médecin. Voir la section suivante qui contient plus de renseignements.*

7. Il n'est aucunement question de l'obstétrique dans l'ÉTG. Parce que la préparation aux soins obstétriques varie énormément entre départements d'urgence ruraux, chaque établissement voudra peut-être établir ses propres directives pour de tels cas. Le comité a accès à très peu d'exemples de protocoles de cette nature. On encourage les hôpitaux qui en ont à les soumettre pour publication sur le site web de la SMRC (www.srpc.ca).

Protocole relatif au niveau V de l'ÉTG

*Le CU-SRMC a établi un protocole (directive médicale) pour le cas des patients du niveau V de l'ÉTG qui se présentent aux départements d'urgence. L'implantation de cette directive médicale permettrait aux départements d'urgence ruraux et éloignés de continuer de dispenser à leurs patients des soins conformes à une norme élevée tout en réduisant le nombre de consultations inutiles données au département d'urgence par des médecins ruraux. Cette directive ne vise pas à

régler le problème des départements d'urgence urbains surchargés (voir encadré 1).

Le niveau V de l'ÉTG inclut les problèmes qui peuvent être aigus mais non urgents, ainsi que des états qui peuvent faire partie d'un problème chronique avec ou sans preuve de dégradation. Dans le cas de certains de ces traumatismes ou maladies, l'investigation ou les interventions pourraient être reportées ou transférées à d'autres secteurs de l'hôpital ou du système de santé.

L'infirmière peut trier les patients du niveau V de l'ÉTG pour qu'ils reçoivent des soins à un moment ou à un endroit qui convient le mieux si l'on satisfait à l'ensemble des critères suivants [a) à e) inclusivement] sans communiquer avec le médecin de garde.

a. Le patient est âgé de six mois ou plus.
b. L'infirmière juge satisfaisants les signes vitaux du patient, dont la température se situe entre 35 °C et 38,5 °C (38,3 °C chez les sujets de plus de 60 ans).
c. Le patient est évalué au niveau V de l'ÉTG.
d. Après l'évaluation par l'infirmière, il n'y a aucune indication clinique selon laquelle le patient peut avoir besoin de l'attention urgente du médecin.
e. Dans les cas limites, ou lorsque l'infirmière n'est pas certaine, une consultation téléphonique entre elle-même et le médecin a permis d'établir que le problème n'est pas urgent.

Lorsqu'un patient dont l'état est «non urgent» satisfait à tous les critères ci-dessus, on l'informe qu'on l'a évalué en fonction d'une série de guides approuvés pour déterminer l'urgence du besoin de soins médicaux et que son problème a été jugé non urgent pour le moment.

L'infirmière peut poser un acte infirmier si c'est approprié ou recommander au patient de chercher à obtenir des services de santé plus tard au cabinet d'un médecin de famille ou à une clinique sans rendez-vous, de prendre rendez-vous ou de revenir lorsque le médecin sera présent à l'urgence. Il faut toujours indiquer au patient que s'il a d'autres problèmes ou si son état se détériore, il doit appeler l'hôpital ou se présenter de nouveau au département d'urgence. L'infirmière peut utiliser la «Lettre au patient» (Annexe 1).

Des établissements peuvent mettre au point des protocoles de traitement normalisés pour les soins infirmiers et le soulagement des symptômes. Le site web de la SMRC en affiche des exemples.

Documentation ou production de rapports
La documentation devrait suivre le même processus que dans le cas de toutes les autres consultations au département d'urgence et inclure le niveau ÉTG, l'évaluation par l'infirmière, toute intervention infirmière et des instructions sur le congé. Le médecin de garde doit revoir tous ces documents tôt le lendemain, apporter tout changement suggéré et le communiquer à l'infirmière en cause. Le suivi effectué par le médecin serait documenté sur la même formule du

patient au service externe.

Évaluation / contrôle / vérification
Il est essentiel de pratiquer un contrôle continu afin d'assurer que les directives sont efficaces et sécuritaires. La tenue d'un registre des patients qui, après le triage, doivent recevoir des soins plus tard ou ailleurs et où l'on indique tout changement des soins ordonné par le médecin permet aux hôpitaux de suivre l'efficacité du protocole et de mettre en œuvre au besoin des modifications pour l'améliorer. La surveillance, la vérification et les interventions visant à assurer que les protocoles sont tenus à jour relèvent de la responsabilité conjointe des médecins et de l'hôpital.

Responsabilité des soins
Les soins dispensés par le personnel infirmier sous les directives d'un médecin demeurent la responsabilité du médecin de garde. Il incombe aux médecins de fournir des services de garde à la communauté afin d'assurer que les protocoles et les directives médicales constituent de bons soins médicaux et qu'ils demeurent à jour. Il incombe à l'hôpital de s'assurer que les infirmières ont reçu la formation nécessaire pour mettre en œuvre les directives du médecin et de s'assurer que ces directives sont suivies.

Énoncé approuvé par la Société de la médecine rurale du Canada, l'Association canadienne des médecins d'urgence, l'Association des médecins d'urgence du Québec et l'Affiliation nationale des infirmières et infirmiers d'urgence.

Intérêts concurrents : aucun déclaré

Cet énoncé a paru dans le numéro d'automne (2002;25[2]:24-5) d'Outlook, la publication officielle de l'ANIIU (Affiliation nationale des infirmières et infirmiers d'urgence) et paraîtra aussi dans un numéro à venir du Journal canadien de la médecine d'urgence, journal de l'Association canadienne des médecins d'urgence.

Cet article a fait l'objet d'un examen par les pairs.

Correspondance : Dr Karl Stobbe, CP 430, Beamsville ON L0R 1B0

Référence

1. Beveridge R, Clarke B. Janes L, Savage N, Thompson J, Dodd G, et al. L'échelle canadienne de triage et de gravité pour les départements d'urgence : guide d'implantation. JCMU 1999;1(3 supp). Une version antérieure de ce supplément, datée du 17 décembre 1998, est accessible en ligne à l'adresse www.caep.ca/002.policies/002-02.ctas.htm

(consultée le 8 novembre 2002).

Encadré 1. Directives médicales/protocoles de traitement

Un exemple de directive médicale acceptable pour les patients des niveaux IV de l'ÉTG dans les hôpitaux ruraux et éloignés est en voie de préparation.

De nombreux hôpitaux ruraux ont déjà mis au point tout un éventail de directives médicales afin de permettre au personnel infirmier de dispenser des soins ordonnés par un médecin avant son arrivée. Le degré de détail de ces directives et l'éventail des problèmes sur lesquels elles portent varient. Dans certaines communautés rurales, il peut être nécessaire d'implanter des protocoles plus ou moins détaillés que celui que propose le présent document. Des exemples en sont disponibles sur le site web de la SMRC (www.srpc.ca). On peut les télécharger et les modifier en fonction des circonstances locales.

Nous invitons les communautés qui ont implanté des protocoles à les soumettre au Comité des urgences de la Société de la médecine rurale du Canada afin d'en faire part à d'autres intéressés. On prévoit qu'au fil du temps, ces protocoles constitueront un dépôt complet de directives médicales bien réfléchies et produites d'un bout à l'autre du Canada et peut-être à l'étranger.

L'ÉTG est en voie de révision. La SMRC est maintenant représentée au Groupe de travail national sur l'ÉTG. Nous encourageons les médecins ruraux à faire parvenir leurs commentaires ou leurs suggestions portant sur des améliorations aux représentants de la SMRC qui siègent au Groupe de travail national sur l'ÉTG, en utilisant le site web de la SMRC.

[Retourner au texte]

Annexe 1. «Lettre au patient»

Nom de l'établissement
Adresse postale
Téléphone

Monsieur, Madame,

Le département d'urgence est destiné aux patients qui ont besoin de soins médicaux urgents. Vous avez fait l'objet d'une évaluation par une infirmière qui a utilisé une série de guides approuvés pour déterminer l'urgence du besoin de soins médicaux. Votre problème a été jugé non urgent pour le moment.

Nous vous recommandons de :

- Prendre rendez-vous pour consulter votre médecin de famille.
- Revenir à l'hôpital à _____ h.

Si vous avez d'autres problèmes ou si votre état empire, veuillez appeler l'hôpital ou revenir à l'urgence.

Le directeur médical du département d'urgence,

Dr XXXXXXXXXX

Le médecin d'urgence de garde,

Dr XXXXXXXXXXX

_____ _____
Heure Date

[Retourner au texte]

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The occasional umbilical vein catheterization

John Wootton, MD
Pascal Croteau, MD

CJRM 2002;7(4):275-9

Introduction

In spite of an emphasis on triage, and an attempt to deliver only low risk obstetrical cases in rural areas, this is not always possible, and unexpected neonatal emergencies will continue to occur. Depending on the clinical situation, stabilization of the infant will often require vascular access. Although peripheral venous access is technically less complex, it may be in actual fact more difficult to secure than access through an umbilical vessel. Infants who require transport for specialized care may be more stable en route if secure venous access is assured to treat, for example, hypoglycemia, or to deliver fluids and antibiotics intravenously (IV). Although not without potential complications, the technique itself is straightforward and well within the scope of practice of any rural physician on an obstetrical roster, and it can be of substantial benefit to a newborn in difficulty.

Anatomy

The umbilicus normally contains 2 arteries and 1 vein, although a 2-vessel cord may only contain 1 of each. Catheterization of the vein has been a common procedure since 1947, and catherization of an artery was first carried out in 1962.1

The umbilical vein connects to the L portal vein , the ductus venosus, hepatic vein, inferior vena cava (IVC) and right atrium (RA). The umbilical artery connects to the internal iliac artery, common iliac artery and aorta.

Indications

Traditional indications most likely to be of practical importance in rural settings include resucitation, infusion of medication and IV fluids, and stabilization prior to transfer.

Complications

Many complications have been described, including occlusion, catheter fracture or accidental severing with migration of the fragment beyond reach, thrombosis at the catheter tip or of the portal vein, and complications related to malpositioning in the lungs or the heart leading to damage to these structures. Sepsis may also occur. These complications are, however, rare, and occur much less often (1.3%-3% vs. 25%) with a properly positioned catheter tip.1

Equipment

- 3-mL syringes
- 3-way stopcock
- 3.5 or 5.0 F umbilical catheter
- normal saline flush
- providone-iodine
- umbilical tape
- scalpel
- curved hemostat (or iris forceps)
- thumb forceps
- needle driver and suture
- scissors
- waterproof tape
- IV set-up

Procedure

1) Set up instruments
Trays should be set up in advance (Fig. 1).

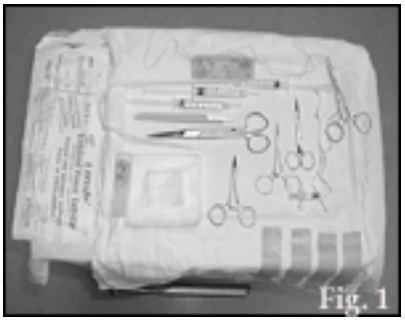
Fig. 1

2) Antisepsis
Insertion of an umbilical vein catheter should occur under as sterile conditions as possible (Fig. 2).Frequently, the urgency of the situation and the priorities of resuscitation will result in a procedure that is "clean" if not completely "sterile."

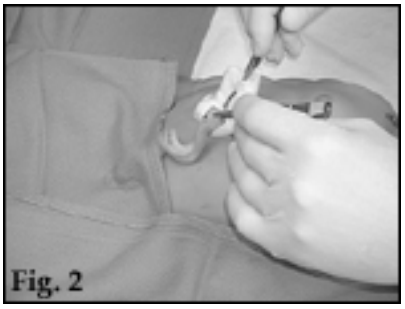
Fig. 2

3) Place the umbilical tape
The tape should be knotted loosely around the base of the cord (Fig. 3). It will be tightened later after the catheter has been inserted.

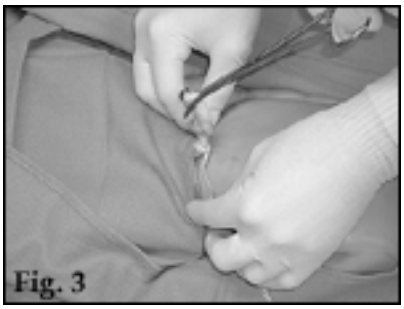
Fig. 3

4) Cut the cord
At least 1-2 cm of cord should remain when the cord is cut (Fig. 4). As a precaution it is advisable when clamping the cords of all newborns (even those apparently normal at birth) to leave sufficient cord below the clamp so that an umbilical catheter can be inserted if neccesary.

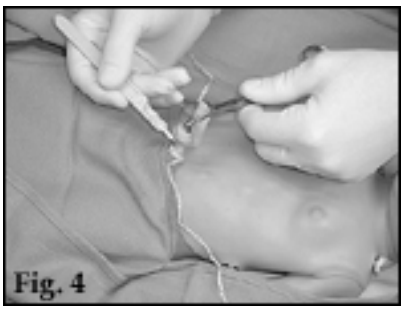
Fig. 4

5) Dilate the vein
Identify the vein, a single large thin-walled structure usually found in the 12 o'clock position in the cord, and dilate it gently (Fig. 5) with a small curved hemostat, or a pair of iris forceps (not illustrated)

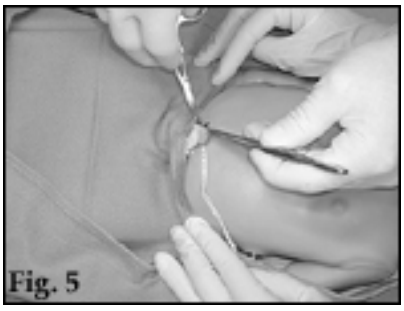
Fig. 5

6) Insert the catheter
Insert the catheter 2-4 cm beyond the abdominal wall. The catheter should advance without resistance. This should be sufficient to ensure venous access for drugs and fluids (Fig. 6). For purposes of resuscitation, deeper placement is not necessary and is discouraged by current NRP guidelines.2

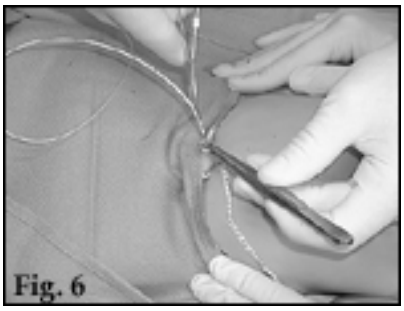
Fig. 6

7) Measurements
Catheters that are inserted for more long-term use (as might be appropriate in a neonatal ICU) need careful placement. The optimum location is at the IVC-RA junction. This location corresponds to a catheter tip between T8-T9 on an x-ray (anterior-posterior view). It can be estimated using a variety of anatomical measurements. A useful first approximation is the umbilical stump — xyphoid process distance3 (Fig. 7a), which can be determined without reference to any other information.

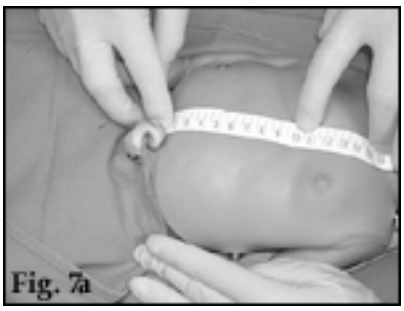
Fig. 7a

The insertion length can be subsequently refined using the umbilical-shoulder distance (Fig. 7b). Reference is then made to an appropriate table2,3 to check the length. Use of ultrasound to guide catheter placement has been advocated.3 Current neonatal resuscitation protocols4 discourage efforts to advance catheters beyond the minimum required to establish blood return.


Fig. 7b

8) Blood return

Withdraw gently with a saline-filled 3-cc syringe. Absence of bloody return may occur even in a correctly placed catheter due to the vein collapsing around the catheter (Fig. 8). If this occurs, flush again with a small amount of saline, and withdraw more gently.

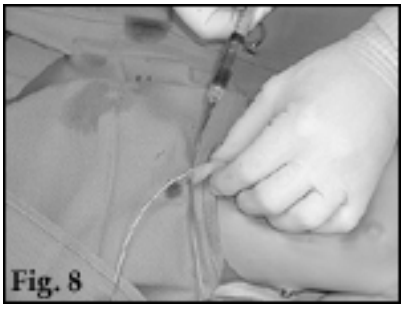
Fig. 8

9) Flush catheter

Flush with normal 2-3 cc normal saline (Fig. 9).

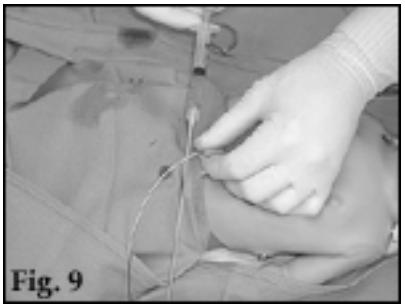
Fig. 9

10) Secure the cord

a. Tighten the tape: Tighten the umbilical tape around the base of the cord (Fig. 10a).

b. Place suture: Secure a suture to the base of the cord (not to the infant's skin) (Fig. 10b).

c. Secure suture: Create a loop, and secure to the catheter (Fig. 10c).

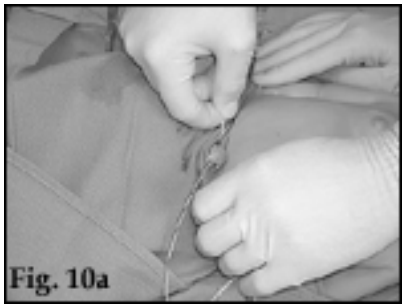
Fig. 10a

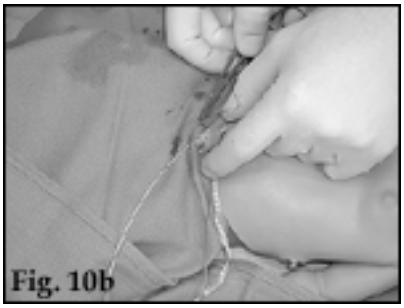
Fig. 10b

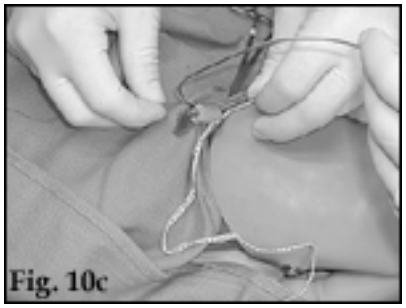
Fig. 10c

11) Bridge
Construct a "bridge" out of waterproof tape to suspend and support the catheter (Fig. 11).

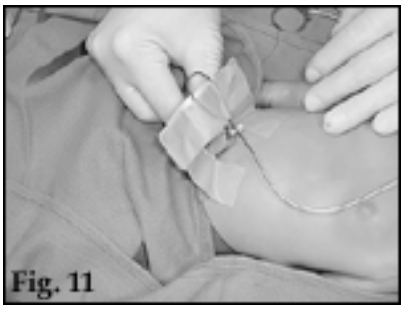
Fig. 11

12) Stopcock
Blood can be withdrawn for analysis through a syringe attached to a 3-way stopcock. Although a variety of 3-way stopcocks exist in the market, many are similar to the one illustrated (Fig. 12), having a single lever arm. In this kind of stopcock the lever arm points to the port that is closed.

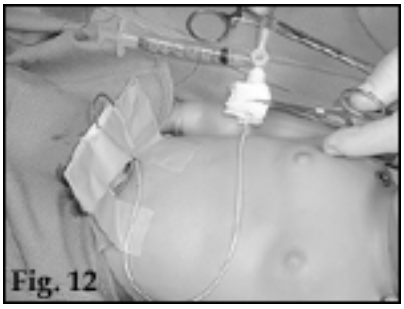
Fig. 12

A hemostat can be used to secure the catheter-stopcock junction.

13) IV set-up
Finally, attach an IV set to one port of the 3-way stopcock, and open the stopcock to that port (Fig. 13). A syringe can be left connected to the unused port for future use.

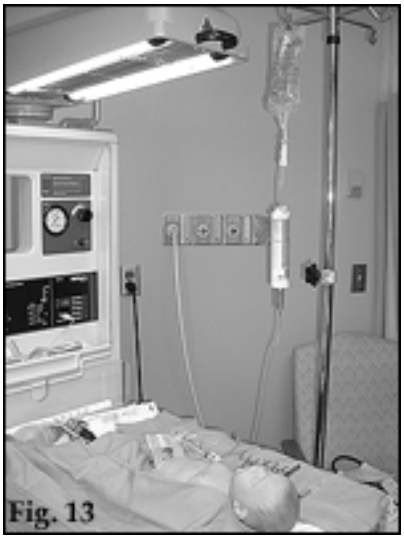
Fig. 13

Conclusion

Although the procedure is straightforward, the need to insert an umbilical vein catheter may occur under stressful conditions. Familiarity with the above procedure will reduce stress and improve quality of care. These techniques can be easily mastered by rural obstetrical teams, even if employed infrequently. This will significantly improve their ability to provide safe and reliable venous access to newborns in difficulty.

Correspondence to: Dr. John Wootton, Box 1086, Shawville QC J0X 2Y0

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Country cardiograms case 22: Flipped T alert!

Hugh Hindle, MB BS, DRCOG, MRCGP, CCFP
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CJRM 2002;7(4):283

A 59-year-old man presented to our emergency department with a 5-day history of right-sided chest discomfort. The pain was worsened by walking and had no pleuritic features. Although a nonsmoker, he had significant risks for ischemic heart disease, including hypertension, hyperlipidemia and obesity.

Physical examination, chest x-ray and cardiac markers were normal, but his ECG (Fig. 1) caused concern. A cardiogram 3 months previously had been normal.

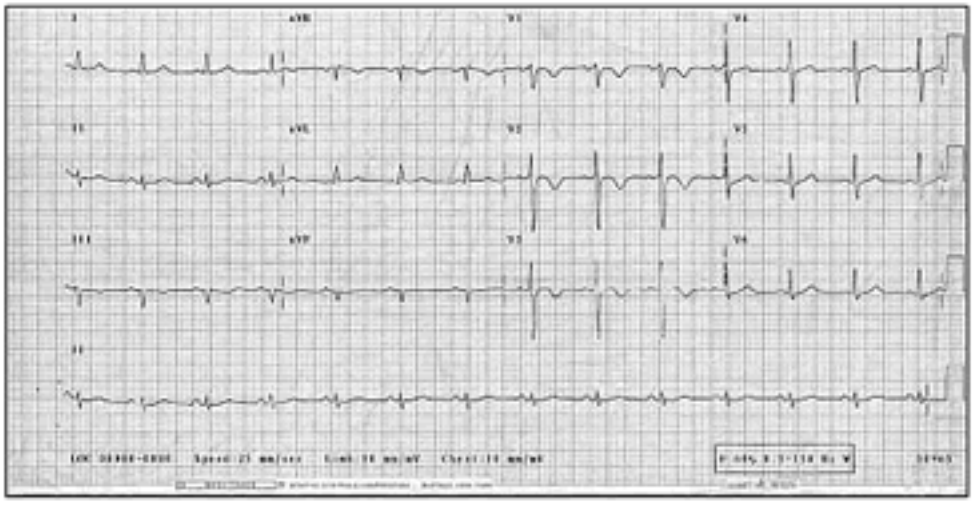

Fig. 1. ECG of a 59-year-old man with a 5-day history of chest pain.

The attending physician treated him for unstable angina with aspirin, low molecular weight heparin and beta-blockers, and his pain rapidly settled. Angiography 5 days later showed normal coronary arteries, much to our surprise. A few days later his pain returned. His ECG was unchanged.

What is your diagnosis?

For the Answer, see page 297.

This article has been peer reviewed.

Competing interests: None declared.

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Country cardiograms case 22: Answer

John Wootton, MD, Shawville Que.

CJRM 2002;7(4):297

The working diagnosis from our consultants at this point was pericarditis, but there was no improvement with anti-inflammatories. After readmission for further investigation he developed some hypoxemia. In view of the possibility of pulmonary embolism, heparin was restarted. Tragically, just before his transfer for a lung perfusion scan, he decompensated and could not be resuscitated. Autopsy revealed a large saddle embolus in the pulmonary arteries.

The patient's ECG shows T-wave inversion in leads V1-V3 and is otherwise normal (Fig. 1). T-wave inversion in myocardial ischemia is generally symmetrical (as in this case) but also narrow.1 In retrospect, these T waves are somewhat wider than one would expect in ischemia.

Diffuse T-wave inversion is seen in the later stages of acute pericarditis and may persist for several weeks, making this a reasonable diagnosis after the exclusion of myocardial ischemia.2

The classic deep S wave in lead 1 and Q wave and inverted T wave in lead lll (S1, Q3, T3 pattern) in acute pulmonary embolism reflects acute right ventricular strain. However, it is only present in about 10% of patients with angiographically proven pulmonary embolism. More frequently, the ECG is normal or simply shows a rhythm disturbance, such as sinus tachycardia or atrial fibrillation or flutter. Poor R-wave progression and deep T-wave inversion in leads V1-V4, as seen here, may also occur.3

Presumably, anticoagulation for his "unstable angina" settled his symptoms, which unfortunately fatally recurred when the heparin was withdrawn.

What lessons can be drawn from this case? First, be on the alert for pulmonary embolism in all its guises. It is a great masquerader. Second, interpret diagnostic findings within the clinical context, remaining conscious of the fact that the sensitivity and specificity of the ECG for pulmonary embolism is low, and that many false-positives and false-negatives will be encountered.

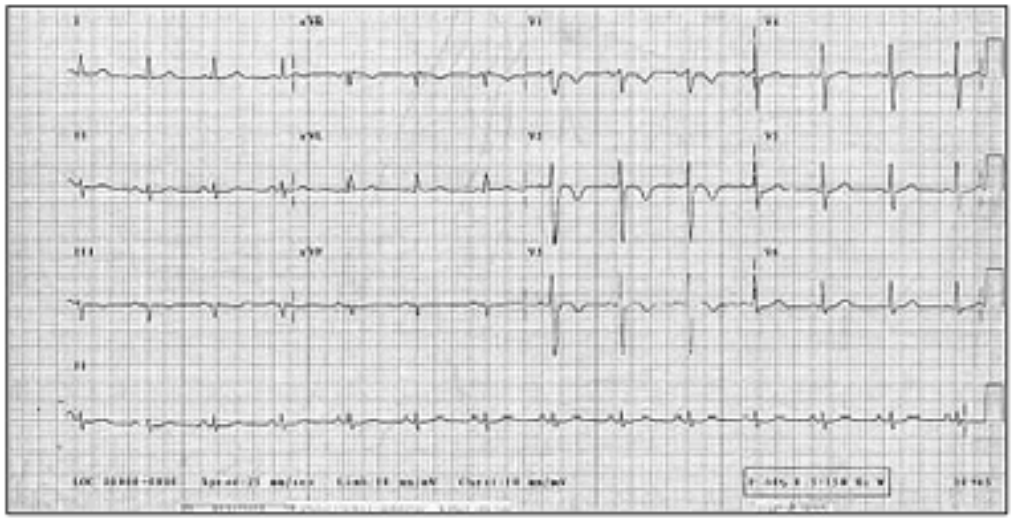

Fig. 1. ECG of a 59-year-old man with a 5-day history of chest pain.

For the Question, see page 283.

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A primer on rural medical politics: 6. Showdown: OK Corral? Can the West be won?

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Shawville, Que.

CJRM 2002;7(4):284-6

The Joint Position Papers on Rural Maternity Care and on Advanced Maternity Skills and Cesarean Section1,2 in rural obstetrics represent an effort to improve the chances that a woman in rural Canada can deliver her baby close to or in her own community. To do this, family practitioners must be trained and have the proper credentials on a national basis to function beyond the primary care level — not just in obstetrics, but in a wide variety of other fields. In previous primers3-7 I have discussed the obstacles to full implementation of such a policy in the governmental and university arenas, as well as the pressures on the accrediting body, the College of Family Physicians of Canada. In this, the sixth in the series, I ask: What other medical players might have a role?

RCPSC — Riding the bulls

Previously7 I referred to the Royal College of Physicians and Surgeons of Canada (RCPSC) as a "rodeo." Indeed, with over 50 subspecialties represented, all requiring academic herding to be properly accredited, there is a lot of roping and tying needed. The RCPSC sends teams to the universities to ensure that the training in each subspecialty is up to snuff. Recently, these specialty accrediting teams have been joint efforts with accreditors from the College of Family Physicians of Canada (CFPC). The jury is still out on whether such collaboration has resulted in better training.

If there is to be a national process for training family practitioners (FPs) in speciality fields such as obstetrics, then that training will be given by specialists involved in some way with the universities. And it follows that this training must be accredited jointly by the RCPSC and the CFPC. As mentioned above, a model for joint accreditation for less controversial types of training already exists, but this does not mean the RCPSC is actively advocating for general

practitioner (GP) specialists. Indeed, the RCPSC will only become involved in such a venture if a political process mandates this to happen. What with all the academic roping, bronco busting and barrel racing going on internally, there is no internal RCPSC political process that will promote measures to improve rural population health.

Furthermore, the RCPSC treads carefully when dealing with outside political questions on a national level. It does not have the internal structure to accountably handle political issues other than those dealing with accreditation. When pressed politically, the RCPSC can always safely wash its hands of, say, the plight of rural childbearing women. Should the RCPSC decide to deal with political and economic questions it also risks offending the Canadian Medical Association (CMA), which sees political advocacy on behalf of all physicians and the health of all Canadians as its domain. With all its subspecialties, the temptation to be cautious with the issue of GP specialists is even greater for the RCPSC than for its sister accrediting body, the CFPC (see part 5 of this series7).

CMA — The ranchers

We are all familiar with the CMA. To the endless frustration of some of its senior officials, it has a grassroots rather than a corporate structure, making it an organization very slow to respond unequivocally to national issues other than with abstract principles. The power at the CMA rests with its General Council, which is made up of delegates from the provincial and territorial divisions. The concerns of these provincial divisions have much to do with regional working conditions and negotiations with the provincial ministries of health. General Council dictates policy to the CMA Board in such a manner that there is little room to manoeuvre quickly at the national level. The president of the CMA is elected for a one-year period only, making it difficult to initiate new policy directions, and there is often a palpable tension between the long-term national staffers and the divisions. Some of the stronger provincial divisions, such as the Ontario Medical Association, are creating a serious rivalry to the CMA in terms of day-to-day practical and political services to the individual physician. This is compounded by the federal government's virtual retreat from the health care field and its cutting of transfer funds to the provinces, making the national scene seem remote to those in the field.

Since most physicians in Canada work in urban areas, most provincial divisions of the CMA are dominated by matters of urban interest. However, the Alberta Medical Association has allowed a strong, autonomous Section of Rural Medicine to flourish, by all accounts to the benefit of the entire Division, including its Section of General Practice. But this is a rarity, and in Ontario, for example, the members of the Rural Section of the OMA are outnumbered by those practising GP psychotherapy. There is a great (and irrational) fear in most provincial divisions that the Sections of General Practice will be weakened by the creation of strong, autonomous Sections of Rural Medicine.

As a consequence, specific rural issues have difficulty making it to the General Council of the

CMA for debate and usually do not feature very high on the Board's radar screen. The Society of Rural Physicians of Canada (SRPC) has therefore been a positive influence on the CMA by acting nationally for rural physicians and rural health, often with the full support of the CMA — sometimes openly, sometimes covertly. The CMA has invited the SRPC to be part of its Affiliates Committee and became involved in the publishing of the SRPC's Canadian Journal of Rural Medicine. The SRPC and the CMA have cooperated on a number of political advocacy initiatives, and the CMA's Rural Project Advisory Group has been led by SRPC members. All this and more is done under the nervous eye of the CMA Board — there is a fine line to tread when powerful regional CMA Board members regard provincial rural physicians as a threat rather than an aid. The national SRPC has had to be very careful when dealing with issues under provincial domain, since the provincial CMA divisions' interests do not always correspond to the national rural priorities. All in all, though, the SRPC has proved to the CMA that it can eat peas with a fork and that cooperation on the national level is beneficial to both parties.

One shared goal between the CMA and the SRPC has been advocating for federal government funding for a National Rural Health Strategy (NRHS) — recurrent federal funding for rural health care issues. Understandably, the CMA's enthusiasm for (and even comprehension of) this concept varies according to a variety of internal and external factors referred to above. But such a fund might be one source of money for national joint committees, housed by the CFPC and given the task of promoting national curricula/CME/licensing for FP specialists, including those needed to keep rural obstetrics alive.

FMLAC — The sheriff's in town

Licensing authorities ("Marshal Dillon") have strict provincial mandates, but come together nationally in the Federation of Medical Licensing Authorities of Canada (FMLAC). The FMLAC has a small office in Ottawa and is slowly beginning to find a use for itself on the national scene. One such function is to help provincial colleges of physicians and surgeons adhere to the licensure portability requirements that Canada, as a member of the World Trading Organization, is required to demonstrate. FMLAC has addressed the problem essentially by requiring CFPC or RCPSC certification for licensure portability across Canada's jurisdictions. Because large numbers of Canadian rural doctors are not certified in either college, this FMLAC proposal is patently anti-rural, but that's where the issue stands for now. The SRPC has been the sole voice exercising strong opposition to this measure, once again underlying the difficulties other national medical organizations have in addressing important rural issues.

FMLAC and its members would have no difficulty licensing graduates of a nationally accredited FP obstetrician program. Many jurisdictions already allow generalists to do advanced obstetrics in rural areas, although how well these brave souls are tolerated is another matter. What the FMLAC must be made to see is how much easier would be their provincial mandates of ensuring competence if a national process for training such FP specialists existed.

MCC — The cavalry over the hill

Most of the members of the Medical Council of Canada (MCC) are licensing authorities. As the MCC continues to expand its examining capabilities nationally and internationally, there is concern in some quarters that at some point it would make more sense for all the qualification exams to come from the MCC, including exams used for portability or licensure. One effect of this, should it ever come about, would be to make certification in the CFPC once again truly voluntary.

OK Corral?

What if we brought all these medical organizations, and more, into one corral? Would the ensuing menagerie cooperate? Would the group act as a herd, or would a shootout occur?

On to the Canadian Medical Forum (CMF) and the subject of the next instalment.

Competing interests: None declared.

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Maintenance of Competence in rural hospitals

Keith MacLellan, MD, Shawville, Que. Vice President, SRPC;
Stuart Iglesias, MD, Hinton, Alta.
Brad Armstrong, MD Hinton, Alta.

CJRM 2002;7(4):287-8

Rural health care demands a "jack of all trades" approach by its practitioners. But how does one assure competency in each of the wide variety of fields the rural physician must use? One answer is to formally transfer accountability for competency from the individual to the whole group of doctors practising in a rural hospital. Below, in point form, is a suggested method of doing so.

I. Premises

a. Lifelong commitment to Maintenance of Competence (MOC) and Professional development (PD) by rural physicians.
b. Quality Assurance (QA), Continuous Quality Improvement (CQI), Risk Management(RM)occurs within the rural hospital structure.
c. Standards of care are identical in rural or urban settings.
d. Transport is needed but within the context of good care, and local conditions.
e. Foundation of rural medicine is composed of broadly skilled generalist physicians, supporting the 3 pillars of anesthesia, surgery and obstetrics — specialist, generalist or both.
f. Both the foundation and the pillars work in a constantly fluctuating manner within primary, secondary and tertiary levels of care.
g. The number of physicians in any rural area is small, usually less than 10, some with limited practices, most still on fee-for-service.

2. Challenges

a. Time constraints — There is simply little time for MOC, QA, CQI and RM, given the practice pressures of rural medicine.
b. Even with sufficient time, it is impossible for the individual rural physician to fulfill all

the needs for MOC, CQI, QA and RM within each of the numerous fields that the rural physician must practise.

c. Remuneration — The fee-for-service system does not usually provide for QA, CQI and RM duties. MOC, while some form or other of compensation is open to rural physicians, still often results in loss of income or patient care.
d. Organization — There are few, if any, templates specific to rural hospitals, nor are there directed mandates and budgets to hospital administration, for a system of MOC, QA, CQI and RM.
e. The CME "industry" has produced relatively few rural-relevant courses in generalist medicine and almost none in the specialist domains.
f. Licensing authorities (LAs) and, in certain areas, regional health authorities, are attempting to fulfill their mandates for supervising quality of care by requiring proof of "merit badge" courses (e.g., ACLS, ATLS, PALS, ALSO, ALARM), stipulated minimum number of procedures, or other forms of mandatory and renewed CME in specific fields of practice. None of these measures is evidenced-based and all can lead to loss of services in the community.
g. Attendance at CQI, QA, and department meetings is confused with MOC.

3. Possible solutions?

a. Separate the concepts of individual MOC from QA, CQI and RM. While the latter can serve to ensure competency in many ways, the blending of all is not sustainable in rural hospitals.
b. Individual MOC should be seen as part of the MOC of the group of physicians practising in the rural hospital.
c. While all (or most) physicians in that group practise ALL the range of skills offered by that hospital, each physician would be self-designated as a resource in one or more of these fields, undertaking to commit to a self-directed program of MOC in that (those) fields(s).
d. The hospital or group would maintain a formal and continuously updated record of the MOC initiatives of each member and of the group as a whole.
e. This group MOC recording and organization would be done in conjunction with a QA, CQI and RM strategy for each department of the hospital. The physician(s) designated as resource(s) for certain fields would participate in the QA, CQI and RM for the appropriate department.

4. Caveats

a. None of this will succeed without the close participation of the provincial LA, preferably through a rural-specific section of that LA.
b. None of this will succeed without hospital administrations being given a specific mandate and budget to support QA, CQI and RM.

c. None of this will succeed without physicians being paid to participate in QA, CQI and RM.
d. None of this will succeed if current rural CME/Locum programs are not supported or even expanded.
e. None of this will succeed if rurally relevant CME is not available, particularly in the specialty fields.

5. Questions

a. What is the relationship between MOC programs for GP Anesthesiologists and MAINPRO?
b. If MOC for GP Anesthesiologists remains voluntary, is it also credible?
c. If MOC for GP Anesthesiologists is compulsory, will it drive rural physicians out of anesthesia practice?

6. Recommendations

I. MOC

a. LAs, with the participation of universities and professional organizations, must draw up specific and realistic plans for rural MOC evaluation systems, then establish an administrative budget.
b. This MOC evaluation and support plan would include templates and other conceptual support for local M0C systems, as well as acting to inform any provincial, CME/Locum programs.
c. Provincial ministries of health, possibly through their rural recruitment and retention programs, would provide funding for the MOC activities of the rural generalists which reflects their educational commitments to multiple skill sets.

II. QA, CQl, RM

d. Hospitals, either individually or as a region, with the participation of professional staff and LAs, must draw up specific and realistic plans for rural CQI, QA and RM, then establish a budget to administer it.
e. Both the MOC system and the quality system must reflect rural realities as outlined above.

Competing interests: None declared.

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The spirituality of the journey

Sterling Haynes, MD Westbank, BC

CJRM 2002;7(4):289-290

Where is Belize? A Belizean writer, Emory Stephen, says "it's south of Paradise and north of Frustration," and I believe him. It borders on Guatemala, Mexico and the Caribbean. It was once British Honduras, became an independent nation and is now called Belize.

Outside of San Ignacio, Belize, there is a rainforest medicine trail that is linked to Mayan health and spirituality; an alternative to corporate medicine produced by Glaxo, Merck and the like. Walking down this medicine trail on a day outing I saw a wealth of useful plants and trees that have been collected and used by one of the local doctors. The trail is dedicated to the late Mayan Don Elijio Panti, renowned healer and last Mayan shaman of Belize. The medications he used are still being collected and used, and their names are very descriptive.

Bull Horn Acacia. The bark is a partial antidote for snakebite and will give the victim time to get to the hospital for anti-snake venom.

Piss the Bed Plant. The extract from this plant can be ingested as a laxative. In small doses it is used to treat bed wetting in children.

Skunk Root Bush. A tea made from the leaves of this bush protects the patient from witchcraft or alcoholism, or both!

I recorded many other medicinal plants along the trail. As I made the circuit of the garden I was about to lean against the Black Poison Wood tree but was stopped by our Mayan guide. I learned that the bark of this tree is very toxic, and in times past Mayan prisoners of war were tied to this tree until their skin fell off. An antidote was an extract obtained from the bark of the

Gumbolimbo tree. I mistakenly called it the Gringolimbo tree, at first, because it peels its bark and resembles the pale, peeling, sunburnt skin of the Gringo tourist.

After leaving the Panti medicinal trail we took a short bus trip from San Ignacio to Xunantunich (pronounced shoo-nahn-too-NEECH), which means "stone maiden," en route to the El Castillo pyramid. We crossed the Mopan River in a hand-driven ferry, mechanized by a series of bicycle sprockets and chain. We were told that the Mayan ferry operator did not want his picture taken. Many Mayans believe that their spirit is stolen by the camera and may be lost. One tourist insisted on photographing him and was immediately confronted by a Mayan warrior transformed from a docile ferry operator. As we continued to the opposite bank, I heard the offending film "splat" as it hit the surface of the water.

Walking to the ruins was all up hill but lining the path were Ceiba trees (the tree of the Mayan Gods) and Bull Hoof vines intertwined with the spectacular Belizean Black Orchid.

The magnificent Bull Hoof vine can be 60 metres long and thicker than a wrist. The male (thicker) vine can be chopped up and made into a tea to staunch internal bleeding, or it can be applied externally to skin. The female vine (thin, with thorns) is made into a tea and is used for birth control. If a woman drinks three cups of tea for the first three days of her menstrual cycle, she will be infertile for six months. The maximum dose taken every six months can give protection for eighteen months. This contraceptive tea is believed to prevent the implantation of the fertilized egg by changing the uterine lining. The World Health Organization is studying the vine's special effects.

The silence of the jungle, the heat, humidity, the sellas and the buildings made me feel insignificant. Here was a civilization I had never dreamed existed, Mayan history recorded by Indian hieroglyphics and drawings on stone slabs.

When the Mayan hieroglyphics with 850 symbols have been deciphered completely we will learn even more of their ancient beliefs and myths and why today the Mayans hold themselves aloof from main stream Belizean, Guatemalan and Mexican life.

Competing interests: None declared.

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Rural Resident Research Award

CJRM 2002;7(4):264

The SRPC is pleased to announce a competition for the best rural resident research.

Prize
Publication of the winning research in CJRM to coincide with the 12th Annual SRPC Rural and Remote Medicine Conference in 2004, plus registration and expenses to attend the conference to a value of $1500.

Eligibility
Candidates must be in the final year of a Canadian residency program and the principal author of a research article on a rural medical topic. Candidates must also be members of the SRPC. (Membership is complimentary to residents and students. See srpc.ca/member.html.)

Deadline
The manuscript must be submitted to the awards committee by June 1, 2003.

Adjudication
Entries will be assessed by a panel consisting of the Scientific Editor of CJRM, the Chair of the Research committee of the SRPC, and rural preceptors involved in research.

Application
Entries should consist of 3 double-spaced hard copies of the manuscript and a copy on computer disk. A cover letter identifying the work as a contest entry and stating that the piece has not been published or submitted for publication elsewhere should accompany the submission.

Submit entries to:
Rural Resident Research Award
c/o Editor, CJRM
Box 1086
Shawville QC J0X 2Y0

The usual rules for journal article authorship, conflict of interest and manuscript format are to be adhered to. Details of these rules are available at www.cma.ca/cma/staticContent/HTML/N0/l2/cjrm/author.htm and at www.cmaj.ca/misc/ifora.shtml

CJRM editorial staff will attempt to aid the selected author(s) in manuscript revision, however CJRM reserves the right to reject any manuscript that is not of publication standard.

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Instructions for Authors

The *Canadian Journal of Rural Medicine* (*CJRM*) is a quarterly peer-reviewed journal available in print form and on the Internet. *CJRM* seeks to promote research into rural health issues, promote the health of rural (including native) communities, support and inform rural practitioners, provide a forum for debate and discussion of rural medicine, provide practical clinical information to rural practitioners and influence rural health policy by publishing articles that inform decision-makers.

Material in the following areas will be considered for publication.

- **Original articles:** research studies, case reports and literature reviews of rural medicine
- **Commentary:** editorials, regional reviews and opinion pieces
- **Clinical articles:** practical articles relevant to rural practice. Illustrations and photos are encouraged
- **Off Call articles:** a grab-bag of material of general interest to rural doctors (e.g., travel, musings on rural living, essays)
- **Cover:** artwork with a rural theme

Manuscript submission

Submit 3 hard copies of the manuscript and a copy on computer disk to Editor, *Canadian Journal of Rural Medicine*, Box 1086, Shawville QC J0X 2Y0; 819 647-2972, fax 819 647-2845, cjrm@fox.nstn.ca. Include a covering letter indicating that the piece has not been published or submitted for publication elsewhere. Hard copies of the manuscript should be double-spaced, with a separate title page, an abstract of no more than 200 words, followed by the text, full references and tables (each table on a separate page).

"Uniform requirements for manuscripts submitted to biomedical journals" (see www.cmaj.ca/misc/ifora.shtml).

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Illustrations and electronic figures

Illustrations must be good quality unmounted glossy prints no larger than 8 × 10 in (20.3 × 25.4 cm). If figures are submitted electronically they should meet the specifications outlined in the following documents:

Digital Art Submission for Editorial Articles [PDF]
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References

Please ensure that the references are not prepared using electronic EndNotes or Footnotes.

Accepted manuscripts

Authors will be required to submit the most recent version of the manuscript by email or on diskette. Please specify the software used.

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Occasional lumbar puncture

CJRM 2002;7(4):291

To the editor:

Lumbar punctures (LPs) are performed less and less often, and therefore many younger physicians have little training and experience in this procedure. The article by Dr. Wootton entitled "The occasional lumbar puncture" is practical and to the point.1 However, there are 3 issues that readers might wish to consider.

1. It is suggested that the risk of herniation "seems to be less when smaller needles are used." I know of no sound evidence that this is true, and even if the risk were less, herniation usually means death. A lumbar puncture without a prior CT/MRI scan is contraindicated in patients with new localizing neurological findings or papilledema. "If you think of it, do it" (p. 207) is dangerous in this setting, no matter how far away the nearest scanner.

2. In my experience with children, an LP is easier when a topical anesthetic such as EMLA (lidocaine and prilocaine) is used. Children respond vigorously to the first needle "stab" and burning when a local, injectable anesthetic is used alone. Once they are upset, the LP becomes very difficult.

3. Increased cerebrospinal fluid (CSF) pressure leads to many serious diagnoses, and I applaud the encouragement to measure pressure. An important addition to the suggested technique is patient position. Once the needle is in the CSF space and before pressure measurement, it is critical that the patient relax from the rolled up position with neck and legs straight out, otherwise venous pressure increases and CSF pressure can rise markedly. The same happens if there is any Valsava manoeuvre. You cannot be in a rush if pressure is to be measured!

Peter Camfield, MD, FRCPC
Professor and Chair
Department of Pediatrics
Dalhousie University and the IWK Health Centre
Halifax, NS

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[The author replies:]

Dr. Camfield raises important and pertinent points. He quite properly advises all physicians to consider the potential serious consequences of their acts. Even when I first heard it in medical school, the enjoiner "If you think of it, do it," did not mean "Don't think, do it"! Rather it was intended to highlight the fact that performance anxiety was often a barrier between thinking about doing a needed procedure and actually deciding to do it. Reducing performance anxiety was one goal of this article.

With respect to needle size and the risk of herniation in patients with suspected intracranial abscesses or brain tumours, Dr. Camfield's point is well taken. If these diagnoses are known or suspected prior to the procedure, or if there are new localized neurological deficits or papilledema, they should be considered to be contraindications to proceeding, whether or not the actual risk is modified by needle choice.

Lastly, his suggestion to "unfold" the patient prior to measuring opening pressures, and to use EMLA cream on pediatric cases, are both valuable tips. It is particularly gratifying to note that physicians working in "the ivory tower" are taking the time to consider the situation of those physicians working in rural areas (and reading their journal), and furthermore are willing to contribute to their discussions.

John Wootton, MD
Shawville, Que.

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La Loi 114

CJRM 2002;7(4):292

Le 15 août 2002

Au ministre de la Santé du Québec, M. François Legault,

La Loi 114, nous la déplorons. Toutefois en tant que médecins du milieu rural ou périphérique, nous avons besoin de médecins qui font de l'urgence. Le plus de médecins qui en font, le moins chacun devrait se sentir sollicité.

Sur cette base, la nouvelle Loi est entièrement incomplète et nous espérons que le ministre saura apporté les autres initiatives nécessaires à l'objectif souligné ci-haut. Il serait souhaitable de s'attendre dans le contexte d'un manque de médecins urgentologues que le ministre de la santé pense à rétrécir la liste des activités médicales particulières (*AMP) à celle de faire de l'urgence et/ou de l'obstétrique.

Il est raisonnable de croire que le candidat à la médecine pensera que l'urgence fait partie de son travail s'il devient omnipraticien. Le médecin doit soigner des personnes malades et donc l'urgence devrait normalement faire partie de ces tâches. Le projet de société dont on veut se doter l'exige aussi. Si on veut que les responsabilités du soin des plus malades ne retombent pas sur les épaules d'un petit groupe visé de façon injuste pour le moment, il faut changer les choses.

Nous ne sommes pas d'accord avec le fait que le médecin urgentologue de Trois-Rivières ou d'ailleurs soit obligé de faire au-delà de ces 22 gardes habituelles à cause de la Loi 114 (et à 22 gardes/mois il en fait déjà trop). Il faut que les administrateurs de cette Loi sachent reconnaître les limites des médecins (voir le jugement de Chandler vis-à-vis du chirurgien à qui on voulait faire faire des gardes de 24 heures aux 2 jours. Le jugement fut favorable au chirurgien). La recommandation est d'une garde de 24 heures à l'urgence aux 5 jours ou son équivalent. Les erreurs médicales augmentent à la mesure des heures passées à l'urgence et ce qui est plus injuste, c'est que l'État n'assume aucune responsabilité civile s'il y a erreur des médecins qu'elle a obligés à faire de l'urgence. La Loi touche possiblement au droit à la liberté des individus. La Loi dans son application, pourrait ne pas être exécutée correctement. Le médecin plus âgé devrait être en

mesure de prendre sa retraîte de l'urgence sans pénalité.

Donc, quelles autres mesures sont susceptibles d'amener plus de médecins à l'urgence ? Une meilleure formation des médecins en vue de cette tâche est nécessaire. Plus de stages à l'urgence, plus de cours pratiques d'urgence, plus de mannequins pour pratiquer les procédures les plus invasives, plus de cours de formation et pour les étudiants aux facultés de médecine et pour les médecins qui veulent se recycler et surtout pour ceux et celles qui voudraient venir aider leurs collègues urgentologues ou semi-urgentologues. Nous avons aussi besoin de mesures incitatives pour la formation des médecins à l'urgence. Le système de santé présentement ne favorise pas la polyvalence de médecins.

Nous vous offrons ces critiques de la Loi et nos recommandations qui se veulent être celles de médecins qui travaillent à l'urgence des milieux périphériques. Nous savons que les points que nous voulons faire ressortir sont très importants et veulent faire avancer notre médecine et société québécoises.

Maurice Lamarche, MD
Comité québécois de la SMRC

The English translation of this Media Release is available on the SRPC Web site (www.srpc.ca/Media/2002_08_15_loi114.html).

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What's in a Word?

Barrie McCombs, MD, CCFP, CCFP(EM)

CJRM 2002;7(4):2931-94

> "I got my education, out behind the barn, I ain't a-fooling, no sir-ee. Passed each examination, out behind the barn, but it almost made a wreck out of me."
> — Little Jimmy Dickens, c. 1950

Microsoft Word is the word processing component of the Microsoft Office suite, described in the last column.1 This month's column describes ways to use Word (or any other word processing program) to increase office productivity.

Form letters

Most physicians write their referral letters in a standard format. Save time by creating a template file containing an outline of your usual style (such as SOAP: subjective, objective, assessment, plan), then use it whenever you type a letter.

Mail merge

You can send a letter to a number of recipients, by first creating a list of names and addresses in Word, Access or Excel and then merging this with the letter, to send each a personalized copy, just like all those "You May Have Won One Million Dollars" letters.

Letterhead

Don't spend any more money on expensive stationery! Word can print your letterhead, both text and graphics, on every letter you write.

Patient education

There is a wide assortment of patient information available from the Internet or elsewhere. Why not download the best ones and customize them to suit your own practice?

Patient newsletters

You can use the "Columns" feature to prepare newsletters, with text and pictures in newspaper-like columns. You might use these to provide information in your waiting room or even mail them out to patients. The latest version of Microsoft Office also contains Publisher, which has even more publishing features than Word itself.

Labels

The "Labels" feature lets you type the contents of a label once, then print a whole page of identical labels. These can be used for return addresses, labelling office equipment, or for placing patient information on laboratory or imaging requisitions. To print a series of different labels, such as for patient recall letters, you can use Microsoft Access, a database program that is part of the Microsoft Office professional version.

Spell checking

The spell-check program will check both spelling and grammar. You can train it to recognize the correct spelling of common medical terms, or purchase an add-on medical vocabulary. However, spell-check programs won't catch a word that's spelled correctly but is not the word you meant to use. In a recent article, I typed "ration" when I meant "ratio." The error was missed by myself, the spell-checker (of course) and an editor.

Tables

Word can quickly create a table within a document, or import tables from Access databases or Excel spreadsheets. It allows you to sort information in a table, but not as easily as in Access or Excel. By creating "blank" tables (table templates), you can create customized forms for charting patient information, such as blood sugar or blood pressure levels.

Envelopes

Most printers are able to print directly onto any common size of envelope. Word allows you to highlight the address in a letter, and then print it on the envelope. It will also print your return address at the same time.

Macros

Macros are tiny programs that execute a series of Word commands. If you often use a particular phrase in your letters, you can create a macro to enter it with a single keystroke. But please don't be like one dermatologist and end even the most routine letter with "Thank you for sending me this most interesting patient." I've often had the urge to send him some really obnoxious patients, just to see what he "really" found interesting.

Word always warns you before opening a file that contains macros, because they are "executable programs," and can contain viruses. Have you updated your anti-viral software lately?

Outline mode

When writing articles, I often use Outline mode. I type my main ideas in point form, rearrange

them in a logical order, and then fill in the full text. This mode is very similar to that used when creating PowerPoint slides, so speakers may find it convenient to prepare an outline in one program and then export it to the other.

Internet pages
Word can create simple documents in the HyperText Markup Language (HTML) used by Internet Web pages. This can be useful for creating pages for your personal or office Web site. To create and manage more professional-looking Web sites, consider a program like Microsoft FrontPage or DreamWeaver.

Speech recognition
Speech recognition programs, such as Naturally Speaking or ViaVoice, can be used to enter text directly into Word and to give voice commands to the program. The CyberPresentations section of the CMA Web site (www.cma.ca; click on Site Map) contains a related presentation by Dr. Mark Dermer. Or you might find this article by Dr. Tim Kolotyluk (a rural physician) helpful.2

Keyboard skills
Efficient word processing requires good keyboard skills. Some useful touch-typing tutorials were discussed in a previous column.3

Dr. Coombs, Director, University of Calgary Medical Information Service, Calgary, Alta.

Competing interests: None declared.

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Round-up

CJRM 2002;7(4):295

A survey of general surgeons in rural Missouri: potential for rapid decrease in work force. Stevermer JJ, Supattanasiri GJ, Williamson H Jr. J Rural Health 2001;17(1):59-62.

It is sobering and disconcerting when trends present in the Canadian health care workforce are confirmed elsewhere. It suggests the existence of fundamental forces, operative both in Canada and, in this case, rural Missouri. In that state more than half of the 39 rural general surgeons were found to be 55 or older. They reported the same "broader scope of surgery" as reported by Canadian general surgeons, and the same feelings of "isolation." The challenge to replace them appears as great in Missouri as in Canada.

Telepsychiatry consultations to a rural nursing facility: a 2-year experience. Johnston D, Jones BN 3rd. J Geriatr Psychiatry Neurol 2001;14(2):72-5.

Telepsychiatry in the heartland: If we build it, will they come? Rohland BM. Commun Ment Health J 2001;37(5):449-59.

Although telesurgery may be still far into the future, telepsychiatry seems to have arrived. These 2 articles, the first from North Carolina and the second from Texas, both report positive experiences with telepsychiatry. In NC 71 consultations were held over a 2- year period, mostly for dementia or depression, and they allowed for timely consultation and a reduced need for travel for nursing home residents. In Texas the teleservice was compared to face-to-face encounters and found to have similar levels of client satisfaction and clinical outcome.

Introducing telemedicine to rural physicians and settings. Campbell JD, Harris KD, Hodge R. J Fam Pract 2001;50(5):419-24.

Whatever its benefits, the introduction of telehealth into rural settings faces significant barriers. This study examined 10 health care practices in 4 communities in 3 rural Missouri counties. There continues to be wide variability in providers' perceptions, which varied from increased use among those practices with university affiliations, to issues of turf protection, apprehension, and

ownership, in others. This study highlighted the fact that the decision to introduce telemedicine represents major change, and raises multiple issues, all of which must be considered to ensure success.

Insights from outstanding rural internal medicine residency rotations at the University of Washington. DeWitt DE, Migeon M, LeBlond R, Carline JD, Francis L, Irby DM. Acad Med 2001;76(3):273-81.

Much like the general surgeon, the profile of a general internist is well suited to many rural settings, yet few are found practising there. According to researchers at the Department of Medicine, University of Washington School of Medicine, "Little formal rural residency training is available and no formal curricula exist." They identified the characteristics of those rural residency rotations thought to be "outstanding." These turned out to involve "excellent role models, ... meaningful responsibility, ... core skills, ... a learner-centred approach." This paper should be useful to anyone developing such rotations.

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RuralMed

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To participate in RuralMed you must be able to send and receive email. Subscription is by request to the listowner. Simply send a message to admin@srpc.ca.

Include your full name and email address. If you include a short biography it will be posted to the list as your introduction. You can also access both the RuralMed archives and a RuralMed subscription form through the SRPC home page.