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Cover: "Graincar in winter"

Dr. Vincent J. Luykenaar  
watercolour  
22" by 10"

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Coldale, Alta.



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Telemedicine: myth or reality?

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A group of recent graduates gather around a table in Sioux Lookout while a technician readies the equipment to send an x-ray of a child to a distant hospital. A group of keen but inexperienced GPs have scratched their heads for several days over the child's diagnosis. The heart seems big. There are several unidentifiable prominences, which look nothing like anything found in the medical texts.

More than 1600 km away, as the x-ray's image forms on the monitor, Dr. Barney Reilly, at Toronto's Hospital for Sick Children chats to the docs in that distant room about the weather, about pickerel, about the quality of the phone line. Ah, the wonders of telemedicine in 1997!

Wrong! Switch those digits around! The year is actually 1979, and telemedicine conferences similar to the one described have already been happening in Sioux Lookout for several years.

Fast forward to 1997. This time to a room in Rouyn-Noranda, where this rural doc has come from afar to observe a telemedicine conference on breast cancer. The base hospital is Montreal's Hôtel-Dieu, and the equipment at each site cost more than \$100 000. The cameras beam real-time images to their respective monitors. The problem is that the presenter has forgotten to show up, no local docs are in the room to participate, and none of the other remote sites that usually hook up even bother to connect.

Judging by these 2 vignettes we may not have come as far as we think in almost 30 years.

Make no mistake, I am a fan of telemedicine. It causes me no end of misery to see it continually fail to live up to its promise. This is particularly tragic for rural medicine where the prima facie case would seem to have been made for its usefulness. How often have you agonized over a "c-spine" that seemed all right, but you weren't sure? How often did you forgo a fetal assessment because your radiologist didn't see fit to visit your community that week? Information is good. It

won't keep you awake at night nearly as effectively as the lack of it will. So where's the roadblock?

As is pointed out by Manson, reflecting on the Australian experience in this issue's "literature of rural medicine" (see page 39), the adoption of telemedicine may outstrip the ability of the legislative and administrative frameworks to keep pace.<sup>1</sup>

Using a Canadian example: Is a radiologist in Montreal who interprets an x-ray sent from rural Newfoundland practising medicine in Quebec or Newfoundland? Is a licence needed? In which province? Who pays him?

Rural doctors must become involved in this debate and not leave it in the hands of the "regulators." We must define the questions that we want telemedicine to answer and describe the structures required to make it happen. Perhaps if the process is driven by real rural needs rather than theoretical benefits we will advance more quickly. The alternative is endless cycles of pilot projects and promises, and precious little to show for it.

#### Reference

1. Manson N. Telemedicine and the New Children's Hospital (Royal Alexandra Hospital for Children). *J Telemed Telecare* 1997;3 Suppl 1:46-8.

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La télémédecine : mythe ou réalité?

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Un groupe de nouveaux diplômés se réunissent autour d'une table à Sioux Lookout pendant qu'un technicien prépare le matériel nécessaire pour transmettre une radiographie d'un enfant à un hôpital éloigné. Des omnipatients enthousiastes mais sans expérience se sont consultés pendant des jours pour essayer de diagnostiquer le problème de l'enfant. Il semble avoir le cœur hypertrophié. Il y a plusieurs proéminences impossibles à identifier qui ne ressemblent à rien de ce qu'on trouve dans les manuels médicaux.

À plus de 1600 kilomètres, pendant que la radiographie prend forme à l'écran, le Dr Barney Reilly, de l'Hôpital pour enfants malades de Toronto, bavarde avec les médecins réunis dans la pièce au loin et leur parle de la température, du doré, de la qualité de la ligne téléphonique. Vive les merveilles de la télémédecine en 1997!

Erreur! Intervertissez les deux derniers chiffres! Nous sommes en fait en 1979 et il y a déjà plusieurs années que des conférences de télémédecine comme celle que je viens de décrire se déroulent à Sioux Lookout.

Retour rapide à 1997. Passons cette fois à Rouyn-Noranda, où un médecin rural est venu de loin participer à une conférence de télémédecine sur le cancer du sein. L'hôpital de base est l'Hôtel-Dieu de Montréal et le matériel à chaque endroit coûte plus de 100 000 \$. Les caméras transmettent des images en temps réel vers le moniteur de chaque participant. Il y a toutefois un problème : le présentateur a oublié de se présenter, il n'y a aucun médecin local pour participer et aucun des autres sites éloignés qui se branchent habituellement ne se donne même la peine de le faire.

Si l'on en juge par ces deux vignettes, les progrès réalisés en presque 30 ans ne sont peut-être pas aussi importants que nous le pensons. Il ne faut pas vous tromper : je suis partisan de la télémédecine. Je me déssole sans fin de voir constamment qu'elle n'est pas à la hauteur de ses

promesses. C'est particulièrement tragique pour la médecine rurale, domaine qui semblerait à première vue en démontrer l'utilité. Combien de fois vous êtes-vous interrogé au sujet d'une «déviation de la colonne» qui semblait correcte, mais au sujet de laquelle vous aviez des doutes? Combien de fois avez-vous laissé tomber un examen fœtal parce que votre radiologiste n'a pas jugé bon de se rendre dans votre localité au cours de la semaine en question? L'information, c'est bon. Elle ne vous fera pas perdre le sommeil autant que le manque d'information. Où est donc le problème?

Comme le signale Manson au sujet de l'expérience de l'Australie dans la chronique «littérature scientifique» de ce numéro (voir page 39), l'adoption de la télémédecine peut déborder la capacité des infrastructures législatives et administratives d'en suivre le rythme<sup>1</sup>.

Utilisons un exemple canadien : un radiologiste de Montréal qui interprète une radiographie qu'il a reçue d'une région rurale de Terre-Neuve pratique-t-il au Québec ou à Terre-Neuve? Le radiologiste a-t-il besoin d'un permis? Dans quelle province? Qui le paye?

Les médecins ruraux doivent participer au débat et ne pas s'en remettre aux «organismes de réglementation». Nous devons définir les questions auxquelles nous voulons que la télémédecine réponde et décrire les structures nécessaires à cette fin. Si le processus est dicté par les besoins ruraux réels plutôt que par les avantages théoriques, les progrès seront plus rapides. Sinon, c'est le cycle interminable des projets-pilotes, des promesses et des résultats plutôt maigres.

## Référence

1. Manson N. Telemedicine and the New Children's Hospital (Royal Alexandra Hospital for Children). *J Telemed Telecare* 1997;3 Suppl 1:46-8.

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President's message: Foreign rural specialists: Endangered?

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Shawville, Que.  
President, Society of Rural Physicians of Canada

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In October I represented the Society of Rural Physicians of Canada (SRPC) at a meeting, called by the Royal College of Physicians and Surgeons of Canada (RCPSC), on the subject of "off-shore" specialist graduates being licensed to practise in Canada.

Other than the occasional academic position, this topic has to do with providing specialist services to rural Canada. The RCPSC has recently, for its own good reasons, seen the need to refuse accreditation to any foreign specialty training programs other than some from the United States. However, graduates of our specialty training programs have never been able to meet all the needs of rural Canada, which has always had to rely heavily on international medical graduates (call 1 800 South Africa) .

The RCPSC invited some 70 players representing various health ministries, government, faculties of medicine, provincial and national medical associations such as the SRPC, provincial licensing bodies, and certain education ministries. What happened? Well, gentle readers, this observer has little experience in these matters, but here is what I garnered:

Quebec thought it had no need of off-shore specialists because of the well-oiled, collaborative machinery it had put in place years ago to determine its physician needs and to discourage physicians from setting up practice in the cities. Quebec representatives outlined their methods, but nobody seemed interested enough to challenge them on their program's effectiveness. Later in the conference a call came from Ontario to develop an effective way to determine physician resource needs: the fact that Quebec says it has been doing it for years was ignored. Is this a cultural problem?

Ontario said that it was a shame that so many neurosurgeons were driving cabs in Toronto, but it was not interested in looking at ways to help off-shore specialists gain access to Canada. More to

the point was why the Canadian medical system could not produce its own rural specialists. Predictably, this discussion degenerated into generalities as people looking at rural issues for the first time suddenly realized the complexities of the problem. "Our hands are tied," say the licensing authorities. "Give us more money," say the universities. "It's the government's fault," say the medical associations. "Get lost," say the governments.

The College of Physicians and Surgeons of Saskatchewan made a plea for some practical solution. They are feeling the political heat and raised the spectre of entire rural communities marching in the streets. So did the Atlantic provinces. Ditto Manitoba. They want a quick process for licensing off- shore medical graduates, and they want it now and be damned any double standards. I never really understood what BC was saying. . . .

The day ended with a consensus to establish a task force. I am not sure if the SRPC will be invited to participate, because I fell asleep until my snoring woke me (I was on call the night before). We are, however, in the process of establishing the SRPC Specialties Committee, and I expect that the SRPC, as the only true representative of rural doctors in the field, will be able to have some clout in any task force that is delegated.

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Message du président : Les spécialistes ruraux étrangers : une espèce en péril?

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Président, Société de la médecine rurale du Canada

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En octobre, j'ai représenté la Société de la médecine rurale du Canada (SMRC) à une réunion convoquée par le Collège royal des médecins et chirurgiens du Canada (CRMCC). La réunion portait sur la délivrance du permis d'exercice au Canada à des spécialistes diplômés de facultés de médecine étrangères.

Sauf pour de rares postes universitaires, il s'agit de la prestation de services de spécialistes aux régions rurales du Canada. Pour des raisons valables qui lui sont propres, le CRMCC a jugé bon récemment de refuser d'agréer tout programme étranger de formation dans une spécialité, sauf certains programmes des États-Unis. Les diplômés de nos programmes de formation dans des spécialités n'ont toutefois jamais pu répondre à tous les besoins des régions rurales du Canada, qui ont toujours dû compter énormément sur les diplômés de facultés de médecine étrangères (composez le 1 800 Afrique du Sud).

Le CRMCC a invité quelque 70 intervenants représentant des ministères de la Santé, des services gouvernementaux, des facultés de médecine, des associations médicales provinciales et nationales comme la SMRC, des ordres provinciaux et des ministères de l'Éducation. Que s'est-il passé? Eh bien, amis lecteurs, votre humble serviteur avait peu d'expérience de ces questions, mais voici ce que j'ai pu comprendre :

Le Québec était d'avis qu'il n'avait pas besoin de spécialistes de l'étranger à cause du mécanisme de collaboration bien rodé qu'il a mis en place il y a des années afin de déterminer ses besoins en effectifs médicaux et de dissuader les médecins d'ouvrir un cabinet en milieu urbain. Les représentants du Québec ont décrit leurs méthodes, mais personne n'a semblé suffisamment intéressé pour les interroger sur l'efficacité de leur programme. Plus tard au cours de la conférence, l'Ontario a demandé qu'on élabore une façon efficace de déterminer les besoins en effectifs médicaux : on n'a pas tenu compte du fait que le Québec affirme le faire depuis des

années. Y a-t-il là un problème de culture?

L'Ontario a déclaré qu'il était honteux de voir tant de neurochirurgiens conduire un taxi à Toronto, mais la province n'était pas intéressée à aider les spécialistes de l'étranger à avoir accès au Canada. On a demandé plus particulièrement pourquoi le système médical du Canada ne pouvait produire ses propres spécialistes ruraux. Comme on pouvait s'y attendre, la discussion a dégénéré en généralités, car des personnes abordant les problèmes ru-raux pour la première fois se sont rendu compte subitement de la complexité de la situation. «Nous avons les mains liées,» affirment les ordres. «Donnez-nous plus d'argent,» crient les universités. «C'est la faute des gouvernements», déclarent les associations médicales. «Allez-vous faire voir», répliquent les gouvernements.

Le Collège des médecins et chirurgiens de la Saskatchewan a demandé instamment que l'on trouve des solutions pratiques. Il ressent les pressions politiques et a évoqué la possibilité de voir des communautés rurales au complet monter aux barricades. Les provinces de l'Atlantique ont fait de même. Le Manitoba aussi. Ces intervenants souhaitent qu'on établisse un mécanisme rapide d'agrément des diplômés de facultés de médecine étrangères : ils le veulent maintenant et se fichent des deux poids deux mesures. Je n'ai jamais compris vraiment ce que disait la Colombie-Britannique. . . . La journée s'est terminée sur un consensus : on s'est entendu pour créer un groupe de travail. Je ne sais pas si la SMRC sera invitée à participer aux travaux, parce que je me suis endormi jusqu'à ce que mes ronflements me réveillent (j'étais de garde la nuit précédente). Nous sommes toutefois en train de mettre sur pied le Comité des spécialités de la SMRC et je m'attends à ce que la société ait un rôle important à jouer dans tout groupe de travail qui sera créé, vu qu'elle est la seule représentante véritable des médecins ruraux sur le terrain.

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Growth parameters of Inuit children in coastal Labrador

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This paper has been peer reviewed.

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## Abstract

**Objective and methods:** To develop age- and sex-specific profiles of growth parameters of Inuit children using a retrospective, chart-based study of public health growth records. All children (137) and "even numbered" children from the birth registers (121/231) in the communities of Hopedale and Nain on the northern coast of Labrador, respectively, were used from Jan. 1, 1988, to April 30, 1995.

Intervals selected were as follows: around the time of birth, 3, 6, 12 and 18 months and 4 years. Children within these intervals were selected once by predefined selection criteria. Data were collected for the variables of sex, age, height, weight and head circumference. Sex-specific plots of height, weight, head circumference by age, and weight for height were developed.

**Results:** At birth, Inuit children are not significantly different ( $p > 0.02$  by the Wilcoxon signed rank test) from National Center for Health Statistics (NCHS) data for all of the variables. Between 6 and 12 months of age both height and weight diverge from the NCHS percentiles. Weight for height diverges significantly and shows the cumulative effect of decreased height and increased weight (compared with the NCHS data) characteristic of Inuit children. Head circumference is not significantly different from the NCHS data.

**Conclusion:** Used appropriately and in conjunction with the NCHS reference curves, these data can help the clinician make the appropriate adjustments when interpreting the growth patterns of Inuit children in Labrador.

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## Résumé

**Objectif et méthodes :** Établir des profils particuliers à l'âge et au sexe des paramètres de croissance des enfants inuit en effectuant une étude rétrospective de dossiers de croissance de la santé publique. On a utilisé, du 1er janvier 1988 au 30 avril 1995, tous les enfants (137) et les enfants «pairs» tirés des registres des naissances (121/231) dans les localités de Hopedale et Nain, respectivement, sur la côte nord du Labrador.

Les intervalles choisis étaient les suivants : au moment de la naissance environ, à 3, 6, 12 et 18 mois, et à 4 ans. On a choisi les enfants qui se trouvaient dans ces intervalles une fois au moyen de critères de sélection prédéterminés. On a recueilli des données sur les variables sexe, âge, taille, poids et circonférence du crâne. On a ensuite tracé des courbes, particulières à chaque sexe, de la taille, du poids, de la circonférence du crâne selon l'âge et du poids en fonction de la taille.

Résultats : À la naissance, les enfants inuit ne sont pas très différents ( $p < 0,02$  selon le test de Wilcoxon pour observations appariées) des données de l'Institut canadien d'information sur la santé (ICIS) pour toutes les variables. Entre 6 et 12 mois, la taille et le poids s'écartent des percentiles de l'ICIS. La courbe du poids en fonction de la taille diverge considérablement et montre l'effet cumulatif de la diminution de la taille et de l'augmentation du poids (comparativement aux données de l'ICIS) caractéristiques des enfants inuit. La circonférence du crâne ne présente pas de différence significative par rapport aux données de l'ICIS.

Conclusion : Utilisées comme il se doit et de concert avec les courbes de référence de l'ICIS, ces données peuvent aider le clinicien à apporter les ajustements nécessaires pour interpréter les tendances de la croissance chez les enfants inuit du Labrador.

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## Introduction

Measurements of physical growth are used by clinicians to evaluate growth patterns in children and to compare an individual child's development in relationship to accepted norms. Although other methods of nutritional assessment involving laboratory techniques are often used, the adequacy of growth may be the single most valuable indicator of nutritional and general health.<sup>1</sup>

Historically, anthropometry was important as proof of the equality of Europeans and North Americans.<sup>1</sup> In the 19th century, stature implied moral and social value rather than health. The first growth charts were developed in 1877 by H.P. Bowditch, Dean of Harvard Medical School, for the average height and weight of US school children.<sup>1</sup> His studies served as models for many subsequent studies, and over the next century, data from cross-sectional and longitudinal studies were used to formulate charts and tables depicting height-weight-age relationships. The results of many of these studies experienced only local or short-term use because of the nature of the population sample, lack of expert agreement on broad applicability or limited distribution.<sup>2</sup>

The National Center for Health Statistics (NCHS) prepared new percentile curves for a growth chart that could be used for the population as a whole.<sup>2</sup> The curves were formulated from data collected during the Health Examination Survey (HES) and were supplemented with age-appropriate sets of the height and weight data of infants and children from the Fels Research Institute of Ohio.<sup>3</sup> These sex-specific percentile curves purportedly represent the varied pediatric population of the United States. They make more uniform clinical appraisal of growth and nutritional status possible and they simplify comparative interpretation of growth data from differing populations around the world.<sup>2</sup>

From data currently available, adult Inuit show considerable variation in growth parameters relative to their European counterparts. Adult Inuit are usually shorter and heavier for their height

than white people.<sup>4-6</sup> According to a recent study of Labrador youth by Zammit, Kalra and Winters,<sup>4</sup> male and female heights lie between the 10th and 50th percentile of US standards. Inuit weight for age lies between the 50th and 75th percentile and weight for height lies between the 75th and 90th percentile for both boys and girls. However, this study was based on a small sample size (n = 100) and did not include the ages from birth to 5 years old.

There are significant differences of growth among populations.<sup>7,8</sup> It is these differences that eventually give rise to the population differences seen in adults. Growth is influenced by many factors, including genetics and environmental influences. Genetic factors may predispose a population to a certain body shape or even to be more sensitive to environmental influences. Environmental factors such as nutrition, disease, socioeconomic status, urbanization, physical activity, psychological stress, season of the year and climate also affect growth.<sup>7</sup> Changing environmental factors, such as increasing socioeconomic status and decreased disease, have revealed a trend toward increasing height and earlier puberty.<sup>9,10</sup> This trend has also been demonstrated in the adult Inuit population.<sup>4,5</sup>

In 1987, the Canadian Paediatric Society (CPS) addressed the issue of subpopulation growth charts, specifically with regard to the North American Indian and Inuit populations, and concluded that, because of regional variation and small population size, a single growth curve could not be developed for all native children.<sup>11</sup> The CPS stated that individual growth charts would be needed for each of the different tribal and cultural areas and that the small numbers would make the results unreliable.

However, physicians working daily in these various regions have to adjust mentally to how they interpret the plot of a child's growth, based on their impression of variations from the norm in their locale. They are basing this on assumptions, because very few of these populations have been evaluated systematically. The CPS recommended: "Health care workers . . . must be made aware of local variations in weight or head circumference as part of their orientation." Although the NCHS reference curves should continue to be used in these areas, having reference data unique to each population can provide better information upon which to base the adjustment needed for interpreting a child's growth pattern.

This present study reports on the analysis of anthropometric data collected on Inuit children aged 0 to 5 years in the communities of Nain and Hopedale on the northern coast of Labrador. The purpose of the study was to describe, by age and sex, the growth profiles of Inuit children in the 2 communities and to compare these profiles to the NCHS curves.

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## Methods

Charts located in the nursing stations of Nain and Hopedale, on the northern coast of Labrador,

were examined retrospectively. Only children recognized as Inuit by the Labrador Inuit Association (LIA) were sampled. Identity was established either by consultation with the community health nurse, who was familiar with membership status, or by cross-referencing a child's name with LIA numbers available at the nursing stations. In Hopedale, the sample included all measurements on all available children ( $n = 137$ ) born between Jan. 1, 1988, and April 30, 1995. In Nain, even-numbered LIA children ( $n = 121/231$ ) were selected from the birth registry for this same time period. If the chart was not available or could not be found, the next chart was selected.

## Data

Details of height, weight and head circumference, as measured by the public health nurse or the public health nurse assistant at the nursing stations, were collected. Measurements are made routinely at approximately 0, 3, 6, 12 and 18 months of age, as well as at 3 and 4 years of age and are part of the routine health survey performed. Measurements were routinely plotted on NCHS reference curves.

## Data selection

Time intervals were selected around each of the routine measuring times. These were birth, 2 to 4 months, 5 to 7 months, 10 to 14 months, 16 to 20 months and 3 to 5 years. Some children were measured on more than 1 occasion within each of these time frames. In that case, the value closest to the median of the interval was selected. If 2 measurements were 0.1 months equidistant from the median time interval, the measurement with the fewest missing values was selected. If there were equal missing values the first measurement was selected. For the last time interval, the record closest to 4 years was chosen ([Table 1](#)).

## Development of percentiles

Narrow time intervals were selected around the median age of each measuring time, and intervals were selected so that the sex-specific mean height and weight were not significantly different ( $p > 0.05$  by the 2-tailed independent t-test) on either side of the median age interval. Sex-specific values of the variables of height, weight and head circumference were then arranged in ascending order, and percentiles were calculated from the observed data. Weight for height was calculated in a similar fashion. Height intervals were selected in which weight did not change significantly on either side of the median height ([Table 2](#)). Only data sets with complete height and weight measurements were included in the analysis. Percentile lines for Inuit children were produced from the data and compared to NCHS reference data<sup>2,3</sup> for the 10th and 90th percentiles. Median Inuit data were also compared to NCHS data for height, weight and head circumference for the intervals from birth to 18 months. Significance was tested by comparing percentiles at the median value of each interval with the Wilcoxon signed rank test ( $p < 0.02$ ). Each sex and variable was compared independently.

Sex-specific graphs of height, weight, head circumference and weight for height for LIA members of Nain and Hopedale were drawn from the data. For each of these variables we

developed percentile curves and curves depicting the comparison of Inuit at the 10th and 90th percentiles with the corresponding NCHS percentiles (Figs. 1 to 14).

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## Results

### Weight for age ([Figs. 1, 2, 3, 4](#))

At birth, Inuit weight appears to be the same as that illustrated by the NCHS data. However, by 6 months of age Inuit weight begins to increase in both males and females. At 48 months the male 90th percentile appears to converge; however, there is a significant difference in the percentiles overall (Wilcoxon signed rank test  $p < 0.02$ ). This convergence is probably a result of the small sample size.

### Height for age ([Figs. 5, 6, 7, 8](#))

At birth, Inuit height appears to be the same as that illustrated by the NCHS data. By 12 months, for both males and females, Inuit become significantly shorter relative to the NCHS data (Wilcoxon signed rank test  $p < 0.02$ ).

### Head circumference for age ([Figs. 9, 10, 11, 12](#))

Although Inuit head circumference is slightly larger than noted in the NCHS data, the difference is not significant.

### Weight for height ([Figs. 13 and 14](#))

For both males and females the weight for height is significantly skewed upward for all heights greater than 60 cm (Wilcoxon signed rank test  $p < 0.02$ ). These graphs show the combined effects of the shorter stature and the increased weight of the Inuit compared with NCHS data.

### Comparison of males and females

Males are significantly taller, heavier and have larger head circumferences ( $p < 0.05$ ) than females at all ages except birth.

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## Discussion

These are the first recent population data on growth parameters for the Inuit pediatric population. They are the only available data illustrating growth profiles for Inuit children of Labrador. The curves we present are not meant to replace the NCHS growth curves. Rather, these data can be used by clinicians caring for Inuit children in Labrador, and perhaps Inuit children elsewhere, as a means of objectifying the subjective mental shifts that these clinicians usually make when

interpreting growth parameters in these children.

The data can be used to compare individuals with their peers and as an adjunct to the NCHS curves to follow the growth and development of Inuit children.

From these data it is clear that the Inuit of Labrador are at, or near, the NCHS reference data at birth for all 3 variables of height, weight and head circumference. However, soon after birth (between 9 and 12 months for height and about 3 months for weight) Inuit children tend to grow in a manner consistent with their final status as adults. This is consistent with the findings of Heller, Scott and Hammes,<sup>6</sup> who also showed that there was no difference between height and weight at birth when compared with Falkner's growth reference of whites, but that the differences became evident soon after birth. Heller, Scott and Hammes,<sup>6</sup> however, found that weight deviated at 18 months, whereas our data suggest that this change occurs far earlier and is evident soon after birth.

It should be noted that there is skewing of the data in the percentile curves. This is likely due to the small population sample as well as the fact that the percentiles are based on the observed cumulative frequency of the variables and not on normalized curves, as is the case with the NCHS percentiles.

These charts must be used appropriately in the clinical setting. There are a number of factors that may affect the accuracy of the percentiles. First, the data were analysed around the expected time intervals in which the children are normally measured. This variation around the expected target age will increase the variability of the percentile estimates.<sup>10</sup> Predictably, children who varied from the population had measuring times that also did not correspond to those of the population and therefore they were excluded in the analysis because they did not fall within the sampling time frames. Second, there are missing values: children who were not measured within the proper time frame and children who had missing measurements for 1 of the variables. These children may be dissimilar to the measured population. Third, the number of measurements for each interval is less than the number of individuals recommended by the World Health Organization as necessary to develop a standard.<sup>12</sup> And, finally, the measurements were made by a number of different health care professionals in a clinical rather than a research setting, where there was unlikely to be clear standardization of the process of measurement. Despite these factors, our data provide a much better basis on which clinicians can base an interpretation of growth patterns of Inuit children than the general impressions on which they previously had to depend.

Future studies, with larger sample sizes and using a standardized means of measurement should be done to provide more accurate growth curves. As well, Inuit children in other areas of the North should be studied to add to the amount of data available in order to get an even more accurate portrayal of the anthropometric norms of this unique population.

Another possibility for further study that should be considered is whether or not these data reflect

a nutritional problem that has led to the diversion away from the NCHS norms. It is important that we not lose sight of this possibility. However, lack of food would presumably cause short stature and low weight, whereas overeating would be expected to lead to "normal" height and increased weight. Since the pattern is one of decreased height with increased weight one would expect that genetic factors are at least part of the explanation.

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## Conclusions

Because Inuit data for height, weight and head circumference virtually parallel those of the NCHS, it appears that the NCHS data are suitable for the evaluation of body size. What these population-specific data allow a clinician to do, is to make an appropriate adjustment based on anthropometric profiles for this population. Whereas previously these adjustments were based on general impressions, the degree and direction of the differences have now been determined, and a more accurate approach can be taken.

Acknowledgements: This study was supported by many people to whom we owe our thanks. The people at Melville Hospital who showed their friendship and generous hospitality, and the nursing and maintenance staff of the clinics in Nain and Hopedale who were invaluable in data gathering and support. Thanks also to the Labrador Inuit Association and to their Health Adviser, Ms. Margaret Webb, for their review and approval.

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Managing Colles' fractures in rural practice

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This paper has been peer reviewed.

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See also:

- Letter: [Country cardios and Colles' fracture](#)

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## Introduction

Distal radial fractures (DRFs) are encountered regularly in rural practice. Of 31 287 patients who made emergency visits to Sundre Hospital (serving a population of about 5500) over 5 years, 222 patients in the computer database in all age groups presented with radial fractures (ICD-9 code 813) (Jim Thompson, Sundre Alta: unpublished data, 1997). Based on diagnoses recorded in general terms (e.g., broken wrist), 57% were children under 18 years of age; at least 25% had DRF and 80% of them were under 18 years of age. Twenty-one patients reportedly had Colles' fractures, of whom 5 (24%) were under 18 years of age. A MEDLINE search revealed no published studies of DRF or Colles' fracture management in rural settings. The eponym "Colles' fracture" originally referred to a very specific subset of DRFs first described by the Irish surgeon Abraham Colles in 1814.<sup>1</sup> Falling on outstretched hands usually caused the fracture. The fracture had postmortem characteristics of dorsal angulation of the radial fragment, radial shortening, dorsal deviation and an ulnar styloid fracture ([Fig. 1](#)).

These 4 characteristics now define the true Colles' fracture. Colles might not have realized that these fractures sometimes involved joints, because he studied the fracture 80 years before the invention of radiography.<sup>2</sup> He did note that the fractures tended to be unstable, settling back after reduction to leave the patient with a "deformity undiminished through life."<sup>1</sup>

Today, patients with DRF tend to be of 2 groups: younger patients subjected to higher kinetic energy forces when they are injured and elderly patients who sustain lower energy injury and have osteopenic bones. Colles' fracture usually is restricted to the second group and should be used only for fractures with the 4 characteristics already listed. Strictly speaking the eponym "Colles" refers to a DRF with dorsal angulation of the radial fragment which does not have articular involvement. One DRF classification scheme listed as many as 144 different types of DRF, and at least 4 classification schemes have been proposed for DRF.<sup>2,3</sup>

In this article, we review key decisions for treating rural patients in their home community versus referring them, and techniques for closed reduction and casting of these fractures.

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Simple casting, closed reduction or surgery?

The treatment goals are to restore satisfactory function and avoid disabling complications. As [Fig. 2](#) demonstrates, the many varieties of DRF, including Colles' fracture, occur on a continuum ranging from undisplaced, simple fractures requiring only casting, to fractures that can be treated

with closed reduction and casting (Fig. 1) to more complex fractures requiring open surgical reduction and fixation ([Fig. 3](#)).<sup>4</sup> The majority of DRFs, including Colles' fractures, can be managed by simple casting or closed reduction, but the decision must be made carefully.

Attempts to correlate Colles' fracture characteristics shown in [Table 1](#) ([Fig. 4](#)) with the DRF complications shown in [Table 2](#) are ongoing, which is why there still is controversy over the optimum way to manage more complex DRFs. There is general support for 2 notions, however. First, that achieving near-anatomic reduction is important and, second, that a more severe fracture is more likely to be associated with complications. Outcomes can be poor regardless of management, perhaps because of the degree of soft-tissue damage suffered in high energy injuries.<sup>4</sup>

The solution we suggest is to describe each fracture by the characteristics listed in Table 1. If a fracture has fewer of these characteristics and the degree of disruption is less severe for each characteristic, then probably the fracture can be managed with nonsurgical measures. Minimally displaced, minimally comminuted, extra-articular Colles' fractures can be managed by casting. Moderately displaced and more comminuted extra-articular fractures that are likely to remain stable can be treated with closed reduction.

[Table 3](#) shows approximately acceptable limits of anatomic disruption for active patients. These limits seem to correlate with persistent stability and better outcome.<sup>4</sup> Often a fracture within these limits can be managed by casting, without reduction. A more displaced fracture should be reduced. Upper ranges of these limits might be more acceptable for older, more sedentary patients.

[Table 4](#) shows the indications for referral. In uncertain cases the rural physician can use the characteristics in Table 1 to describe clearly the fracture on the telephone to a specialist in another community before committing the patient to a transfer. In some cases the decision to refer for surgical fixation can be made only after attempting closed reduction. An attempt should be made to reduce all displaced fractures to decrease pain and minimize ongoing soft-tissue and neurovascular injury during transfer, even if it is clear from the outset that referral will be required. The patient should be referred during follow-up if the fracture fails to maintain good position. It is possible, though not proven, that neuropathic complications such as reflex sympathetic dystrophy can be prevented with intervention, if the complication is detected early.

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Illustrative cases

Fig. 1 shows pre- and post-reduction x-rays for an active 24-year-old woman whose typical Colles' fracture was treated with closed reduction by a rural family physician. The initial x-rays

show 24° dorsal tilt instead of the normal 0 to 22° palmar tilt, radial inclination to only 14° instead of the normal 19° to 29°, about 10 mm of radial shortening, a small degree of minor comminution, no intra-articular involvement, minor ulnar displacement of the radial fragment and no ulnar or radial styloid fracture. There was a moderate degree of kinetic energy in the mechanism of injury. After reduction there was 3° of palmar tilt, restoration of dorsal cortex apposition and improvement in all the other characteristics. She had an excellent result.

Fig. 3 shows a fracture suffered by a sedentary 78-year-old osteopenic woman. She had severe dorsal tilting (36°), considerable loss of apposition of the dorsal cortex, severe loss of radial inclination (to 8°), severe radial shortening (radial length, -5 mm), comminution extending volarly beyond the mid-radial axis (visible on the oblique view which is not shown), intra-articular involvement at one location, a 1-mm step deformity, radial displacement of the radial fragment, an associated ulnar styloid fracture and no radial styloid fracture. Low kinetic energy was absorbed at the time of injury. She was referred to an urban orthopedic surgeon who inserted 2 pins. She had an excellent result at 2 months' follow-up.

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### Analgesia/amnesia/anxiolysis

A variety of options are available for analgesia, amnesia and anxiolysis. In Sundre we tend to use either hematoma block with intravenous sedation, or Bier block.

- Hematoma block with lidocaine ([Fig. 5](#) and [Fig. 6](#)). Use 5 to 10 mL of 1% lidocaine without epinephrine (toxic dose is 3 mg/kg). Insert the needle dorsally into the hematoma toward the distal forearm, about 30° to the skin. Try to get the needle tip into the fracture space by touching the fractured surface of the distal fragment. Ideally, try to get a blood flashback before injecting.
- Intravenous sedation with midazolam and fentanyl. This can be used with a hematoma block. Ensure adequate monitoring for cardiorespiratory complications while the physician is busy with reduction and casting.
- Bier block, fully described by Roberts.<sup>5</sup>
- Regional nerve blocks.
- General anesthesia.

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### Closed reduction

- Prepare a bandage-padding wrap. The wrap can be placed after reduction, to make it easier to palpate the reduction with your fingers.

- Prepare a plaster or fiberglass volar splint. Be aware that more than 8 layers can cause thermal burns.
- Get an assistant to provide counter-traction above the elbow.
- Place both thumbs ([Fig. 7](#)) or one hand ([Fig. 8](#)) over the dorsal fragment and reduce in 1 of 2 ways:
  1. In an adult, apply longitudinal traction and bend the hand and wrist volarly into the reduced position.
  2. In a child, because the periosteum is thicker and stiffer, apply longitudinal traction, increase the dorsal deformity and then bend the hand and wrist volarly into the reduced position.

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## Casting

- Wrap soft bandage padding on the forearm, wrist and hand, with good padding along the distal ulna ([Fig. 9](#)).
- Apply the volar splint below the elbow on the volar forearm and wrist, with the wrist in slight flexion and slight ulnar deviation ([Fig. 10](#)). Leave the metatarsophalangeal joints out of the splint and subsequent casts to allow them to move. Excessive flexion (greater than 20°) can cause median nerve compression. The forearm should be in a neutral pronation/supination position, with the palm vertical. Allow the splint to solidify while moulding with your hands. Wrap firmly enough to protect the fracture site with a supporting tensor, avoiding excessive pressure ([Fig. 11](#)). Casting and splinting alone do not hold a DRF in place.
- Obtain an x-ray to ensure the reduction is satisfactory ([Table 3](#)). This can be done before splinting if movement can be avoided after reduction.
- Instruct the patient very carefully regarding elevation above the heart, splint pressure complications and reasons for an urgent return visit (persistent or new pain, finger blanching or numbness). Advise the patient to wiggle the fingers within the splint and subsequent cast.

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## Follow-up

- Plan a follow-up visit in 1 to 2 days to check the cast.
- Repeat x-rays weekly for 3 full weeks to ensure that reduction is maintained. Even an undisplaced Colles' fracture can develop radial shortening and loss of radial inclination. Slippage occurs in the first 1 to 3 weeks and begins to heal in that position by 2 to 3 weeks.
- Refer if the reduction is not maintained.
- If reduction persists, then remove the splint at 3 weeks and put in a below-elbow circular cast for 2 to 3 weeks more with the wrist in a neutral position, providing that adequate reduction is maintained. "Neutral" means no wrist flexion, extension or ulnar deviation, and no forearm pronation or supination. Like the splint, the cast should allow free movement of the metacarpophalangeal joints.
- Recognize development of painful neuropathy early. Adjust cast position promptly and consider referral if the patient continues to report pain under the cast after recasting. Some believe that reflex sympathetic dystrophy can be prevented if it is recognized early.
- Stop casting when there is radiographic evidence of healing and clinical signs that the fracture is united, but do not cast longer than 6 weeks.
- Refer if there is evidence of malunion, or if the criteria in [Table 3](#) are not met.

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## Rehabilitation

- Ensure early rehabilitation to improve functional outcome and reduce risk of reflex sympathetic dystrophy, finger stiffness and wrist pain.
- Exercises should begin during the immobilization period, particularly for free joints in the affected limb. Advise the patient to wiggle fingers in the splint and cast.
- Begin physiotherapy as soon as the final cast is removed.

Acknowledgement: We thank Dr. Rick Buckley, MD, FRCS, Department of Surgery, The University of Calgary, for his critical review and assistance.

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Country cardiograms case 7

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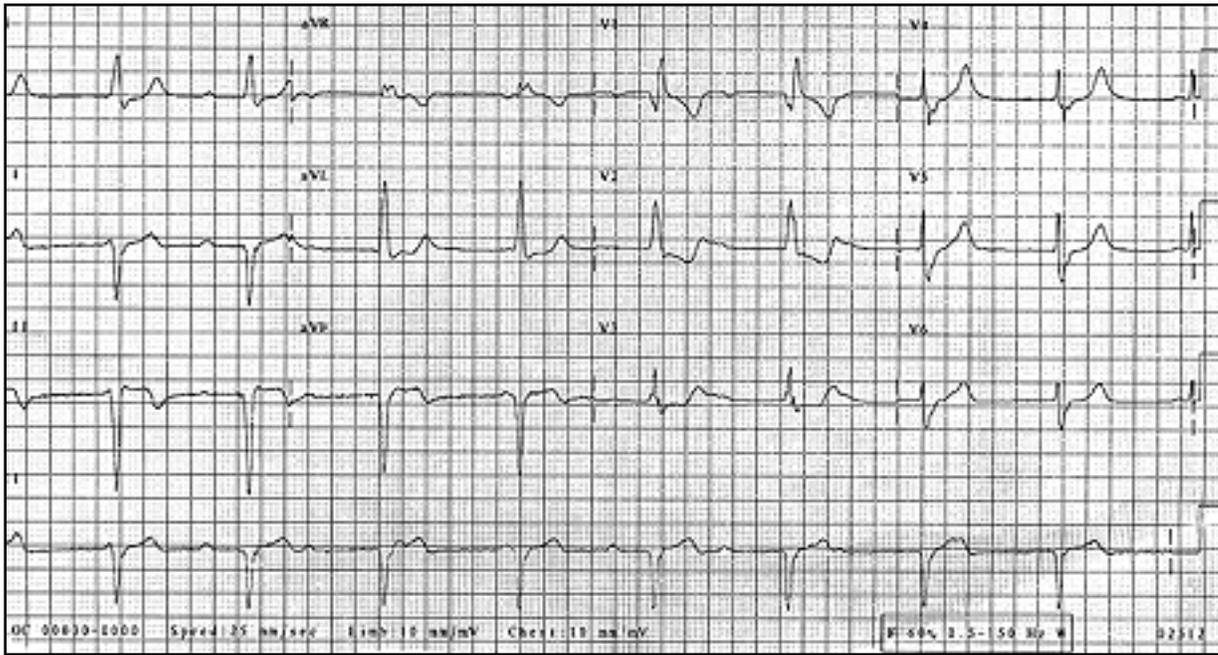
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"Country cardiograms" is a regular feature of the Canadian Journal of Rural Medicine. In each issue we will present an electrocardiogram and discuss the case in a rural context. Submit cases to [Dr. Jim Thompson](#), Canadian Journal of Rural Medicine, Bag 5, Sundre AB T0M 1X0.

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Case presentation

A 68-year-old man with diabetes presented to our rural emergency department after a syncopal episode that occurred as he was carrying out the garbage. He felt well afterward and was able to drive himself to the hospital. He was concerned that his diabetes might be out of control because his blood sugar levels had been above 10 mmol/L for the previous few weeks. He denied any chest pain when questioned by the emergency department nurse, who recorded the following electrocardiogram.



What is the diagnosis? How would you manage this case?

[Answer and discussion.](#)

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A critique of the Scott Report

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Can J Rural Med vol 3 (1):27-30

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Introduction

The Report of the Fact Finder on the Issue of Small/Rural Hospital Emergency Department Physician Service (the Scott Report) was released on Mar. 22, 1995.

Despite its focus on the issue of staffing emergency departments, no representatives of organized emergency medicine have ever been asked to critically review the document or to comment on its potential to improve the provision of emergency care in rural environments.

This brief review of the Scott Report has been requested by the Section of Emergency Medicine of the Ontario Medical Association (OMA) in preparation for its leadership role in negotiating fundamental and positive change to the delivery of emergency services throughout the province.

The report is divided into 4 sections:

- a discussion of the circumstances leading to the release of the report
- a brief synopsis of the recommendations of the fact finder
- a critical analysis from the emergency medicine perspective
- recommendations for change.

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## The release of the Scott Report

In the early 1990s, many small communities were experiencing significant difficulties with the maintenance of adequate hospital-based emergency services.

According to a 1991 survey of small-hospital medical services in Ontario, "44% reported a shortage of local GPs interested, willing and able to staff the emergency department now. 71% predicted a shortage of local GPs willing to staff the emergency department in the next 5 years."<sup>1</sup>

A 1994 Ontario Hospital Association (OHA) survey revealed that "54 of 169 hospitals surveyed were having difficulty operating their emergency departments, 46 were paying physicians extra to be on call, 46 were under threat of having emergency services withdrawn and 16 had reduced emergency services."<sup>2</sup>

The underlying reasons for the potential disintegration of small-hospital emergency services were multifactorial but were in large measure due to physicians withdrawing from emergency department service. Reasons cited included factors such as comfort and competence in dealing with acute medical illness and injury, including the issue of maintenance of competence,<sup>3,4</sup> lifestyle issues, particularly those of burnout and the economic issue of poor remuneration, on a fee-for-service basis, in low-volume departments.<sup>5</sup>

It was the economic factor on which the tripartite overseers of the health care system (the OHA, OMA and Ontario Ministry of Health [MOH]) elected to focus in response to the growing crisis, perhaps betraying a lack of understanding of the fundamental problems of the emergency health care system and the attendant need for a comprehensive solution.

A working group made up of members from the 3 interested parties was established to find a way for physicians to be compensated adequately for the time and effort they devote to emergency

service. Despite several potential options, the parties could not reach agreement on either the source or mechanism of the proposed payment schemes.

The MOH therefore obtained agreement from the OMA and the OHA to sponsor an independent assessment of the situation by a fact finder, Mr. Graham Scott.

After an intensive but brief (4-month) review, which included discussions with a multitude of stakeholders and the receipt of numerous briefs (none of which were from the OMA Section of Emergency Medicine or the national specialty association (Canadian Association of Emergency Physicians [CAEP]), Mr. Scott released his report in March 1995. It was approved in principle by all 3 concerned parties.

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The Scott Report: a brief synopsis of the findings as it relates to emergency medicine<sup>6</sup>

Emergency medicine and the rural environment

- Rural medical practice differs from urban and suburban practice.
- Rural physicians believe the differences are not fully recognized and this contributes to a strong sense of dissatisfaction.
- There is a crucial shortage of GP/FPs skilled in emergency medicine.
- There can be no physician stability in communities where the physicians are required to provide on-call service more often than 1 in 5 in a hospital with a 24-hour emergency service.
- There are service problems, or threats of service problems, in almost all small hospital settings.
- Recruitment and retention requires a broad and comprehensive solution.

Financial factors

- There is a strong financial incentive for rural physicians to avoid emergency on-call duties.
- The fee-for-service mechanism does not serve the physician well in low-volume departments (see letters page 254).

- Rural physicians on fee-for-service remuneration must sacrifice income to maintain emergency coverage without an income top-up. In some communities the daylight hours are competitive with fee-for-service hours, but almost universally that is not the case during the 12-hour overnight shift.

### Rural emergency departments and external relations

- Medical schools and academic health science centres (AHSCs) contribute to the problem by: (a) projecting a negative attitude about rural practice and (b) inadequately supporting rural centres from the perspectives of both training and clinical support
- Hospitals contribute to the problem by: (a) insisting on unreasonable service demands and (b) failing to provide leadership in the regionalization of services

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### Recommendations of the fact finder

- Rural physicians should receive appropriate recognition for the unique nature and demands of their practice.
- They should receive competitive fees for their work and degree of responsibility.
- Since fee-for-service remuneration does not serve the rural practitioner well, it should be replaced by other payment mechanisms.
- Rural physicians who remain on fee-for-service remuneration and are qualified would be entitled to claim a \$70 hourly rate for the 12-hour overnight on-call service in the emergency room and for each hour on call during weekends and official holidays.
- Specialty training for FPs must be increased.
- AHSCs should become affiliated with certain geographic areas of the province to develop permanent links and relationships with the small hospitals and physicians in the communities.
- A rural hospital consultant access program should be established.
- An Ontario rural emergency advisory program should be established between the hospital in the affiliated community and the AHSC to provide advice and assistance to rural

physicians in patient diagnosis and case management.

- Rural regions, particularly in the North, should organize around the population centre concept, in which an area hospital would provide 24-hour emergency services and support to satellite hospitals and clinics within the region.

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An emergency medicine perspective

The Scott Report is commendable for recognizing the unique nature of rural medicine, particularly the unique stressors associated with the provision of emergency care within that context. It should also be commended for its recommendations with respect to lifestyle issues and the prevention of burnout, a systemic problem common throughout emergency medicine, both rural and urban.

Recognition of the need for and promotion of the concept of regionalization as fundamental to the development of a systems approach to the delivery of adequate emergency care in Ontario is an important recommendation. Similarly, the call for a more meaningful and supportive relationship between rural community hospitals and AHSCs is consistent with appropriate system development.

Despite these positives, however, the Scott Report remains a fundamentally, and perhaps fatally, flawed document.

Emergency Medicine, as a discipline and as a benchmark knowledge base and skill set is never defined in the document.

The document does not try to define a basic minimum level or standard of emergency care for all Ontarians; rather it seeks a mechanism to maintain the status quo.

The status quo, however, may not be acceptable. In 1987, the MOH developed guidelines for hospital emergency units in Ontario. A subsequent survey of compliance with the admittedly minimum guidelines in 1991 revealed that "there are some disturbing gaps between reality and the minimum standards set in the guidelines and that 100 of the 200 hospitals surveyed do not satisfy the guidelines' basic demands."<sup>7</sup>

The Report fails to address adequately the important issue of initial training in emergency medicine in both the undergraduate and postgraduate years for the undifferentiated medical practitioner, the workhorse of the rural emergency department for years to come. Similarly, the basic need for more training opportunities in emergency medicine beyond the PGY2 year

receives mere lip service, despite its fundamental importance to the development of regional networks.

The need for meaningful research into such issues as recruitment and retention of physician resources, the nature of meaningful CME and its role in maintenance of competence, the role of nurse practitioners and alternative service providers (i.e., paramedics) is ignored. Without research, we will be condemned to further decades of trial and error.

The issue of physician compensation, particularly in terms of volume and acuity levels, is poorly defined. There can be little doubt that a sessional fee of \$70/h is more than adequate for a community emergency department that has a service volume of 5000 patients per year. It seems highly unlikely, however, that it will be adequate for an emergency department that has a service volume of 20 000 to 25 000 patients per year. Recognition of the immense variability within the definition of "basic" emergency service and the need for greater flexibility in compensation packages within that broad category is needed.

The Scott Report alludes to greater clinical support by AHSCs of rural emergency departments. It fails, however, to embrace the currently available technologies as a means of providing quality emergency care. CT scans represent 1970s' technology but are only available in secondary and tertiary centres. Similarly, distance imaging, digital radiography and telemedicine are technologies of the 1990s that would be of immediate benefit to rural emergency physicians (see pages 5 and 39).

The Scott Report's greatest failing, however, is that it places the needs of the physician above those of the patient. To be sure, rural physicians are in desperate need of support and are deserving of much greater attention from government and academia. However, it is more important to emphasize that every Ontarian has a right to a defined minimum standard of emergency care; that should be the primary focus of this document. In striving to maintain the status quo, Scott supports the unfortunate myth that any physician with ACLS/ATLS training and a valid licence, working in an unsupported, substandard "emergency room," without benefit of a regionalized system of care for the acutely ill and injured, is acceptable. Rural Ontarians have a right to expect more.

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Recommendations of the OMA Section on Emergency Medicine

The Scott Report

Despite its imperfections with respect to emergency medicine in the rural environment, the Scott Report has an important message for the development of rural medicine in Ontario. Through its recognition of the unique problems of the rural physician and its offer of a comprehensive

solution to a particular aspect of rural care, it gives hope to a generation of dedicated but somewhat beleaguered physicians. Such hope will evaporate in the absence of the following:

1. A comprehensive approach to the problems of rural physicians should be developed and introduced. The piecemeal approach to implementation that has been adopted by the present Government of Ontario will not lead to long-term positive change.
2. The sessional payment of \$70/h should be reviewed. This represents more than adequate compensation for low-volume departments of 5000 patient visits per year but is of doubtful benefit for "small-volume" departments of 20 000 to 25 000 patient visits per year.
3. Since implementation, 70 small hospitals have accepted the sessional payment plan. In this era of fiscal restraint and the need to demonstrate cost-effectiveness, it would seem prudent to demonstrate to the public of Ontario that such a plan has indeed improved the standard (and not merely quantity) of emergency care in the province.

#### Emergency medicine and the rural environment

To promote an improved standard of emergency care in small-volume emergency units in the Province of Ontario, the OMA Section on Emergency Medicine recommends the following:

- Rural physicians should be recognized for the unique nature of their practice.
- Rural physicians should be trained appropriately in emergency medicine.
- Maintenance of competence is of particular importance in low-volume, low-acuity emergency departments and must be approached innovatively.
- Appropriate compensation packages defined by geographic imperative, service volume, acuity level and participation in system development activities should be developed. Fee-for-service mechanisms are inadequate for most rural communities.
- A classification system for all hospital-based emergency departments in Ontario, sensitive to the issues of rural and remote areas, should be instituted on the basis of adherence to a minimum set of guidelines for hospital emergency units.
- Technologic advances with regard to telemedicine and diagnostics should be embraced.
- Rural emergency departments should be supported through commitment to a minimum distance/time factor for appropriate critical care. This may mean a more consistent

approach to aeromedical support.

- Regionalization of emergency departments should be a priority in order to conserve precious manpower and scarce technologic resources.
- All rural emergency departments should be married to an AHSC for educational and clinical support.
- Greater research into the delivery of emergency care within the rural context should be encouraged through the development of a centre of excellence in rural emergency studies.
- The Scott Report, as a template for the development of rural emergency services, should be rejected. A comprehensive approach is required and it must recognize emergency medicine for the specialty it is and emphasize the need to achieve a defined and acceptable minimum standard of care.

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You know you are a rural doc when. . .

Can J Rural Med vol 3 (1):33

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We welcome war stories and other anecdotes about being a rural doc. Please send your submissions to the Editor: Box 1086, Shawville QC J0X 2Y0 or [email them](#).

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You know you're a rural Doc when:

- Your patients think you also pull teeth.
- Your patients try to get medical advice for their cow.
- You get gifts of fiddleheads and moose meat in the fall.
- Drug reps love to drive to your office for the scenery.
- You know where most of your patients live and none of them have street addresses.
- If you can't get a patient on the phone, your secretary knows which people in several different settlements to call to find them.
- The roads you drive on are smoothest when there is a good base of snow.
- You have more colleagues on the Internet than in the next 3 counties.

Kendrick Lacey  
Stanley, NB

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You know you are a rural Doc when:

- You did a delivery last night at some time past midnight but you can't remember if it was a boy or girl, calf or child.
- An old family friend is passing through town, stops at a service station and is personally directed to your office because the attendant is your patient and he wants to be of service.
- You come home from holidays and you catch your locum driving your tractor . . . chopping your wood . . . pruning your apple trees . . . or sitting in your hot-tub watching the stars.
- You feel bereft and destitute without your "old" truck, your tractor, your chainsaw.
- Your older brother tells you that a bit of wood-chopping and shovelling manure is good for the body and the soul.
- When the birthing problems of Simmental are part of your coffee conversations.
- You don't know what the markets are doing or What's Hot/What's Not, but you know it is a good year for peas and the fish are biting because the black ants are flying!

Mary Johnston  
Revelstoke, BC

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You know you're a well-trained rural doc while visiting a city hospital when:

- You take off your rubber boots at the front door and put on clean "indoor" shoes, to the annoyance of people trying to get in and out.
- You find yourself wiping the floor after you spill a drop of coffee while walking down a hallway.
- You neatly carry your utensils to the counter in the restaurant and the waitress looks worried about it.
- Most everybody else is wearing a tie.
- You say "hi" to everyone then get the sense they wonder if you have privileges to be off the "psych" ward upstairs.

- You find yourself gawking up at the architecture beyond the second story, holding up the bustle on the sidewalk.

Jim Thompson  
Sundre, Alta.

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Discover St. John's, Newfoundland

Graham Worrall  
Whitbourne, Nfld.

Can J Rural Med vol 3 (1):35-37

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St. John's is described in the tourist brochures as the "City of Legends." I think it would be more apt to describe it as the "City of Tall Tales" or the "City of Blarney." You can judge for yourself while talking with the locals during your visit.

So, what else but conversation can beguile you in and around St John's when you're here for the Society of Rural Physicians of Canada's annual Rural/Remote Medicine conference? If you are judicious, you will have both outdoor and indoor plans, because the weather can be terrible or magnificent here in early May.

Although it is relatively small, St. John's, by virtue of its long history as a seaport, has a colourful history that is unmatched by most other Canadian cities. Although there is no evidence that John Cabot ever visited here (the city name, however, is based on the story that he may have entered its harbour on June 24, the feast day of St. John the Baptist), it is certain that the port became well known soon after the discovery of the New Founde Lande. When, in 1583, Sir Humphrey Gilbert sailed through the Narrows and claimed the island for Queen Elizabeth I, there were already 3 dozen fishing vessels gathered in the harbour. It is not recorded what these sundry French, Portuguese and Basques felt about this abrupt founding of the British Empire.

Nonetheless, part of the Empire we became, and we stayed that way until Confederation with Canada in 1949. The history of St. John's is much more that of an international trading port than a Canadian city. Despite devastating fires that destroyed much of the city in 1817, 1846 and 1892, St. John's retains much of the charm of the Old World. The downtown is close to the conference hotel, and its narrow winding streets are similar to those running down to the river in London or to the sea in Lisbon. Much of its architecture bears traces of Victorian England and of the small rural Irish towns whence came many of its inhabitants in the 18th and 19th centuries. The local dialect will make many visitors do a double take, wondering whether they have strayed to Waterford or Cork. It is well to remember that St. John's is closer to Europe and the Eastern

United States than it is to many parts of Canada, and that until Confederation, people here naturally looked to the British Isles or New England when sending their children for an education or when seeking employment.

If you are staying in the conference hotel, you will be steps from the most interesting streets. Water Street is claimed by some to be the oldest street in North America; at one time it ran directly along the harbour, so that goods could be transported directly from store to boat, but infill has put it a block away now. Its place has been taken by Harbour Drive, a fascinating walk at any time of the year to view the harbour and its ships. I would suggest your walks around St. John's go back and forth along Harbour Drive, Water Street, New Gower Street, Bond Street and Military Road. All of these streets run east-west and are connected by a multitude of side roads and alleys, which are worth exploring. It is here that you will find the smaller and more interesting stores, which sell handicrafts and local knick-knacks. Maps of the downtown area can be obtained at the hotel or at city hall (which also contains the tourist office). Organized walking tours are available, but it is far more fun to explore the downtown yourself. Most of the better restaurants are also found downtown; look out for those that display the "Taste of Newfoundland" symbol; here you will be able to sample some of the traditional foods of the province, as well as other dishes featuring local ingredients.

Just outside the conference hotel is St. John's City Hall, an ugly modern building, but worth visiting just to say you have stood at "Mile 0" of the Trans-Canada highway. It is here that Terry Fox, Steve Fonyo and a host of intrepid imitators started their cross-Canada treks.

You'll have much more fun if you walk a block south, toward the harbour, until you come to George Street. This small back street, once little more than a collection of seedy garages and industrial buildings, is now the centre of St. John's night life; it has the highest concentration of pubs in North America. It, and the surrounding streets, boast a number of pubs where you can hear live music, which may range from blues (try the Fat Cat) to Irish-Newfoundland folk (try Erin's Pub, the Blarney Stone and the Ship Inn). The programs and the performers change often, so it is best to ask around when you arrive, but there is never a problem finding a good show. It has been said that St. John's has more singers and instrumentalists, for its size, than any other city in Canada.



Fig. 1. Signal Hill with Cabot Tower in the background.

If you want to stretch your legs without leaving the city, try a hike up Signal Hill (Fig. 1). This is a national historic site, and contains several exhibits, including the Cabot Tower, built in 1897, to celebrate the golden jubilee of Queen Victoria and the 400th anniversary of the discovery of Newfoundland. It was here in 1901 that Marconi flew a kite to receive the first transatlantic radio signal. From Signal Hill you gain superb views both to sea — where there is a good chance of seeing icebergs and whales — and to land — where you can peer down to the Narrows and to the city and harbour of St. John's. In addition, there are a number of exciting trails around the hill and along the cliffs.

If you have children with you or prefer a less strenuous climb, try Bowering Park (where the kids can feed the ducks and admire the statue of Peter Pan) and Bannerman Park. Try a hike around Quidi Vidi Lake, where you might see crews in training for the Regatta, or hike around the Battery, a former small fishing village, which is now within the city and an easy walk from downtown. There are about 40 km of walking trails within the city, and the best of them is the Rennie's River Trail, which can be accessed at several points near downtown. Plan on taking the kids to Pippy Park, where there is a Fluvarium; here you can learn all sorts of things about freshwater plants and animals; you can even go underground and view a stream from below.

A refreshing aspect of St. John's is the almost complete absence of high-rise development (unfortunately, the city fathers permitted a couple of office towers to go up in the 1980s), which means that almost all views of the city are dominated by 2 fine churches, both named (of course) for St. John the Baptist, and both worth a visit. The Anglican Cathedral of St. John the Baptist, a fine example of the ecclesiastical Gothic Revival style, was designed by Sir Gilbert Scott. He was the fellow who was responsible for St. Pancras Station in London, which was started in 1843 and is supposedly still not complete. The Roman Catholic Basilica is larger and more gaudy than its Protestant counterpart and was the largest church in North America when it was built. Although construction started in 1841 and was completed in 1850, it usually wears a garland of scaffolding for ongoing repairs.

If you fancy a short trip outside the city, you'll have to rent a car. In St. John's there are a few bus routes, but public transport is rudimentary at best. If you have just a day or two, I would suggest you drive around the Avalon Peninsula. Whether you head north or south out of St. John's, you will soon find beautiful scenery and spectacular views. If you have a particular interest in marine life or bird-watching, several companies offer boat tours. However, May is early in the season for them and you'll have to call when you're in the city (Gatherall's and Captain Murphy's offer reasonable tours). You may have the opportunity to get a close-up view of icebergs rather than marine life!

Whatever your interests, plan to spend a few extra days in St John's before or after the meeting!

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If you don't want to stay in a large conference hotel, try one of the many bed-and-breakfasts in the town. All of the following are within walking distance of the conference: Compton House, Waterford Bridge Rd. (709 739-5789); Waterford Manor, Waterford Bridge Rd, (709 754-4139); Winterholme Heritage Inn (709 739-7979); Fort William Bed & Breakfast, Gower St. (709 739-0990); A Bonne Esperance House, Gower St. (709 726-3835). If you would like to stay in a fishing village, try the Orca Inn in Petty Harbour (709 747-9676)Fig. 1. Signal Hill with Cabot Tower in the background.

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## Focus on telemedicine

Can J Rural Med vol 3 (1):39-40

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A MEDLINE search using the keywords "telemedicine" and "rural," unearths 75 references between 1993 and 1997. One early reference is of interest as it represents a consensus view from 1994.

Delivery of health care to the underserved: potential contributions of telecommunications technology. Consensus conference entitled "Telemedicine and Access to Care". McGee R, Tangalos EG. Mayo Clin Proc 1994;69(12):1131-6.

Two important recommendations emerged: "(1) to focus on the needs of the underserved people more than on the capabilities of the available technologies and the regional centers and (2) to use the least expensive but appropriate telecommunications technology for any specific application." It is pertinent to reflect on whether these principles have been adhered to in the intervening years.

## Teleradiology

Teleradiology as a subset of the telemedicine continuum is the subject of a significant number of articles. Issues of quality and needs assessment are prominent. The latter is addressed in an article from Iowa, which documents the use made of a teleradiology system by physicians in a small rural hospital.

Teleradiology consultation for a rural hospital: patterns of use. Franken EA Jr, Harkens KL, Berbaum KS. Acad Radiol 1997;4(7):492-6.

These authors found that radiologic consultations were requested most frequently for "trauma, spine, abdomen, and the infant age group." This includes examinations that may be difficult to interpret (i.e., children) or where the consequences of missing a lesion may be major (i.e., spine).

## Implementation

Telemedicine and the New Children's Hospital (Royal Alexandra Hospital for Children). Manson

N. J Telemed Telecare 1997;3 Suppl 1:46-8.

The New Children's Hospital (Royal Alexandra Hospital for Children) in New South Wales, Australia, also promotes its role in providing telemedicine services but is hampered in implementing this technology by factors that are common to many countries. In their view, ". . . in Australia, as in other countries, the adoption of telemedicine may outstrip the ability of the legislative and administrative frameworks to keep pace. Thus, the enablers appear to be cultural and technological while the obstacles are rooted in the way in which health systems are financed and administered."

## Quality

The issue of quality was addressed in an article from another pediatric centre, where the interpretations of 153 cases by general radiologists using teleradiology were compared to the interpretations by pediatric radiologists of the original radiographs.

Pediatric radiology at a rural hospital: value of teleradiology and subspecialty consultation. Franken EA Jr, Berbaum KS, Brandser EA, D'Alessandro MP, Schweiger GD, Smith WL. *AJR Am J Roentgenol* 1997;168(5):1349-52.

The authors found that their sample consisted mainly of x-rays of common conditions, mostly "pneumonia and fractures." They found no significant differences in the interpretations by the 2 groups, and concluded that: "Simple pediatric radiographs obtained at a rural primary care institution and transmitted by teleradiology can be adequately interpreted by general radiologists."

## Caution

Telemedicine: a cautious welcome. Wootton R. *BMJ* 1996;313(7069):1375-7.

In an editorial in the *British Medical Journal*, R. Wootton (no relation to CJRM editor) notes: "Rushing into equipment purchase, however is almost certain to prove counterproductive. Face to face contact is fundamental to health care and enthusiasts of telemedicine should recognise that it is not as good as the real thing (and unlikely ever to be)."

Telemedicine and competitive change in health care. LaMay CL. *Spine* 1997;22(1):88-97.

From Northwestern University comes the following caveat: "Telemedicine in the United States has yet to prove itself economically viable, and it faces a number of political and regulatory barriers. Even more significantly, telemedicine's potential to increase overall health care spending by increasing access to health care has deterred private industry from investing heavily

in it."

## Cost-effectiveness

And from Norway comes a large study that specifically compares the cost of providing teleradiology to 2 alternatives, including maintaining the status quo.

Radiology services for remote communities: cost minimisation study of telemedicine. Halvorsen PA, Kristiansen IS. *BMJ* 1996;312(7042):1333-6.

The authors compared 3 scenarios: (1) A small x-ray unit in the rural site and all other examinations at the host site (the existing system). (2) A teleradiology system with most examinations done at the rural site and only more advanced examinations at the host site and (3) all examinations at the host site. They factored in direct medical costs, nonmedical (travel) costs and indirect costs such as lost production and the value of lost leisure. Surprisingly (at least to telemedicine fans) they found that, "the existing system is the least costly option except when lost leisure is valued as highly as lost production." The authors did admit, however, that such a system might be justifiable on grounds other than cost, such as "equity of access and quality of care."

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Book reviews

Can J Rural Med vol 3 (1):41-42

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History Taking, Examination and Record Keeping in Emergency Medicine. H.R. Guly. 232 pp. Oxford University Press Canada, Don Mills, Ont. 1996. \$46.50. ISBN 0-19-262461-X

Emergency medicine is a unique and complex art. Practitioners can never learn enough about how to do it properly. This little book contains wise tips for physicians and nurses who work in emergency departments (EDs). The author clearly has thought long and hard about assessing ED patients. I recognized a physician manager who appears to have investigated many ED cases that had gone wrong.

In Part I (34 pages), the author gives some valuable pointers on what I call "case management" the art of spending 5 minutes with an ED patient and getting it all done, from greeting to record-keeping. He offers suggestions on how to compress notes while documenting vital information ("Poor records = poor medicine. If it's not written down, it wasn't done") and emphasizes principles of continuity of care in ED record-keeping. He discusses the process of making an ED diagnosis and suggests tricks for ensuring follow-up.

Part 2 (22 pages) reviews general principles of assessing joint, bone and skin injuries, and non-traumatic musculoskeletal complaints. The information is vital but very basic, at the level of medical students and first-year residents. Guly emphasizes the need for thoroughness. He gives several examples of how injuries cause occult problems that could be missed in a superficial assessment.

Part 3 (114 pages) covers injuries to body parts, beginning with head injuries and ending with the limping child. Each section provides tips for assessment of a body part. The differential diagnosis of the limping child does not mention viral synovitis, which seems to be relatively common in our practice. Perhaps this oversight is because the book is mainly oriented toward trauma. Nor is child abuse mentioned. Most of the examination essentials are covered. I appreciated the experienced clinician's warning about the knee exam: "trousers must be removed and not just rolled up." The level of detail in Part 3 appears fairly basic.

Part 4 (38 pages) deals with the assessment of burns, vascular injury, nerve injury, major trauma, road accidents and self-harm. Guly offers an approach to the documentation of these problems and emphasizes the need to be precise about nerve anatomy. The section on self-harm takes a narrow approach to management of an injured suicidal patient.

Part 5 (18 pages) comments on issues that the author feels a nurse should consider in recording information on the chart. The relative roles of nurse and physician continue to evolve. The section offers important food for thought to ED management teams. This book is seeded with tips about understanding the patient's agenda while attempting to make an accurate diagnosis. New students will benefit from early exposure to this wisdom, and mature ED physicians will appreciate the reminders.

The book has several limitations. (1) It does not mention the rural context. I am convinced that there are very important differences in the way emergency medicine should be delivered in rural settings. (2) There are very few references to the emergency medicine literature in this book. It is written from the British "A&E" (accident and emergency) perspective, the British term for ED and signifying a set of traditions quite different from the North American ED. The author seems to triage patients into those who should be seen by the emergency physician and those who should have taken their problem to the general practitioner. North American EDs tend to handle all visitors. (3) The book deals almost exclusively with trauma. Research consistently shows that trauma accounts for only one-third of all rural ED visits in North America. None of these shortcomings limits the usefulness of this book for new and mature students of rural medicine, however. Its lessons easily can be generalized to non-trauma problems.

I recommend this book for medical students and family medicine residents who intend to enter rural practice and for the libraries of rural teaching hospitals. Rural preceptors should take a half hour to skim the book, looking for useful tips to use next time they are on call. Rural ED physician managers should have access to this book until references sensitive to the rural context become available.

Jim Thompson, MD, CCFP(EM), FCFP  
Sundre, Alta.  
Clinical Associate Professor  
Department of Family Medicine  
The University of Calgary  
Calgary, Alta.

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Education for Rural Medical Practice: Goals and Opportunities. An Annotated Bibliography. Edited by James T.B. Rourke. 324 pp. Monash University, Australian Rural Health Research Institute, Moe, Australia. 1996. A\$70. ISBN 0-7326-0885-6

Does recruiting rural high school students to medical school increase the retention rate if they become country doctors? Do community-based family medicine training programs do a better job of educating physicians for rural practice? Do return-of-service contracts work as a way of recruiting or retaining physicians for practice in the North?

Dr. James Rourke has produced an annotated bibliography on the literature on rural and remote health in his new book *Education for Rural Medical Practice: Goals and Opportunities*. His literature review is international in scope and is organized into chapters with commentaries and abstracts on such subjects as practice location after graduation, medical school selection, undergraduate curriculum, postgraduate training for rural general/family practice, residency training for rural specialists and continuing medical education. Each article listed is accompanied by an abstract, sometimes written or amplified by Rourke, as well as key words and comments. The chapter summaries are helpful, quick resources for those looking for a mini-literature review.

This book will be of interest to anyone thinking of practising in rural areas, from current practitioners, to academics and to policy planners, if they are interested in what has been tried around the world to educate doctors for rural practice and if they are interested in a critical review of what works and what doesn't.

This is not a book to sit down and read from start to finish -- rather it is a reference book that can be used to see what strategies have been successful in other jurisdictions. It makes an important contribution to policy development by moving us past anecdote to evidence as to what educational programs and policies best prepare physicians for rural practice.

Plans are under way to have the book released in CD-ROM format, which will be most helpful for searching for information by key word. In the meantime, the author has avoided one of the most common pitfalls of any bibliography -- that it is not kept up-to-date. Rourke's 1996 supplement to the book has already been released.

It would be good to see an expansion of this project; perhaps the author could turn his attention next to the non-educational determinants of rural practice. What financial incentives work? Which forms of practice organization are conducive to rural practice? Please organize the literature on those subjects for us too, Dr. Rourke!

Ruth Wilson, CCFP, FCFP  
Associate Professor and Head  
Department of Family Medicine  
Queen's University  
Kingston, Ont.



RuralMed grab bag

Can J Rural Med vol 3 (1):44-45

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A discussion of mammography and its availability to rural women was sparked by one Quebec based RuralMedder. He indicated that Quebec's new breast-screening program is applying the same quality criteria to all sites, both urban and rural. All technicians must do a minimum of 1000 per year, but his hospital's 2 technicians do only 700 between them. If the rule goes through women in the area will have to travel 140 km, round trip, to obtain mammography service.

The discussion centred on the transportation problem, and some RuralMedders said that their female patients get used to travelling for mammography, especially when they realize its importance. One added that lots of his patients do 190 km round trips just for groceries. . . . In Australia, which has a mobile unit that tours the country, women must still travel for diagnostic (versus screening) mammography.

The discussion continued with one RuralMedder asking what will happen to the local provider of specialty services if rural areas are increasingly restricted by urban based rules. "Is the surgeon going to be deprived of patients who perceive that they should go to the city to get 'better' care? What about the local GP and his or her skills? Whatever happened to comprehensive care? Isn't our insight, knowledge of the patient and community supposed to yield better outcomes?"

Another thread concerned the tendency of some problem patients to jump the office queue and go to the emergency department to see their doctor about a cold. However, one RuralMedder noted that, "A few patients with colds help pay off the pickup truck easier than a half dozen internal medicine referrals." Sick notes are another headache when either employers demand them or the foreman says s/he won't let a worker back without one. Advice from RuralMedders was that the companies involved be informed that if sick notes are demanded unreasonably, the company will be billed by the patient's doctor. Another solution is to hand the patient the Canadian Medical Association policy statement on the certificate of disability ([www.cma.ca/inside/policybase/1997/5-0b.htm](http://www.cma.ca/inside/policybase/1997/5-0b.htm)) and explain that doctors cannot act as policemen for the employer.

One RuralMedder suggested that health promotion in rural areas could be far better than it is.

Others then recounted failed efforts at creating smoke-free zones in towns where the majority of the councillors smoke. One RuralMedder suggested that to get smokers to quit you need special services, and many rural areas don't have services for such things as smoking cessation, bereavement, cancer and victims of sex abuse. "Sometimes the only support is tobacco," he writes.

Concern was expressed over the closure of the 1-year anesthesia training program at the Toronto East General Hospital and the threatened closure of a similar one in Calgary. RuralMed was told that the SRPC has an anesthesia committee and will need to address questions as to who should teach a GP anesthesia course, how long, where, what and how. The course seems to be a grab bag at the moment, with no specific program, no consistency across the country and no diploma. Rural doctors need to develop their own program since anesthesiologists don't stay in rural communities because the work is not varied enough for them. "Someone has to work the general surgery cases that are the meat and potatoes of the rural [surgeon]," noted one RuralMedder. Some RuralMedders suggested that the SRPC committee can preserve, support, validate and expand the role of GP anesthesiologists in Canada.

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Subscription to RuralMed is by request to the listowner. Send an e-mail message to Dr. John Wootton at:

[jwootton@fox.nstn.ca](mailto:jwootton@fox.nstn.ca)

Include your full name and e-mail 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 SPRPC home page at:

[www.gretmar.com/srp/home.html](http://www.gretmar.com/srp/home.html)

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Letters / Correspondance

Can J Rural Med vol 3 (1):46

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Please send us your comments and opinions. Letters to the editor should be addressed to:  
Canadian Journal of Rural Medicine, Box 1086, Shawville QC J0X 2Y0; fax 819 647-2845;  
email: [cjrm@fox.nstn.ca](mailto:cjrm@fox.nstn.ca)

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Correction

Congratulations on maintaining an interesting and spirited journal. However, I note that the Canadian Journal of Rural Medicine has achieved a remarkable feat: it has moved Halifax to Newfoundland (see article by Worrall and colleagues: [Can J Rural Med 1996; 2\(4\):169-75](#)). Although I am sure our hospitable province would be happy to accommodate this lovely city, Memorial University and our Faculty of Medicine prefer to remain in Newfoundland's provincial capital, St. John's.

M. Ian Bowmer  
Dean, Faculty of Medicine  
Memorial University of Newfoundland  
St. John's, Nfld.

Editor's note:

Attention readers: Memorial University of Newfoundland (M.U.N.) is co-hosting, with the SRPC, the Rural/Remote Medicine Conference in May 1998 ( see page 3) Do NOT go to Halifax, Nova Scotia. The conference is in St. John's, Newfoundland, definitely home of M.U.N.

Emergency on-call funding

The Council of the District of Sparwood, BC, has made the very difficult decision to fund on-call doctors to ensure that we do not lose our emergency department at the Sparwood Health Care Centre. Council feels very strongly that this is the responsibility of the provincial health ministry

but so far has been unable to convince the ministry of the urgency of the situation.

It has become increasingly evident over the past few months that Sparwood's Health Care Centre is in jeopardy of losing its emergency facility because of the lack of coverage by physicians in our community.

With the shortage of physicians, our doctors are forced into a 1 in 3 on-call situation, which means that every third day they are responsible for a full 24-hour coverage. We cannot have our physicians burning out.

Our doctors have been actively pursuing a fourth physician for the past year, and although there have been temporary placements, our GPs have been unsuccessful in keeping a doctor on a fulltime basis. At present, there is only enough work to keep the fourth physician busy for 2 to 3 days a week, and with no payment guarantee for on-call service, it is not economically viable for a doctor to remain. For example, we presently have a temporary physician who is doing on-call in Alberta on the weekends because that province offers a guaranteed on-call payment. British Columbia does not provide this service.

There are communities with similar problems in our province; however, we feel our situation is unique. Besides the local residents' needs, we have 5 mines in the vicinity that employ approximately 2400 men and women, and we have a definite responsibility to maintain an emergency facility for them. Also, the highway from the Alberta border to Sparwood and through to Fernie, BC, is often treacherous in both winter and summer. This year alone there have been a number of accidents that required immediate use of our emergency facility. Although Fernie is only 32 km down the highway, winter driving conditions are often such that it is not advisable to be on the road, and in fact the road is occasionally closed for hours at a time.

The District of Sparwood sees this as a critical situation that requires immediate attention and will continue to pursue the British Columbia Ministry of Health to acknowledge the situation and provide funding accordingly. I emphasize that this is a very serious situation and the District is treating it as such and has therefore taken immediate action.

Cal McDougall  
Mayor  
District of Sparwood  
Sparwood, BC

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## SRPC launches its CME/Locum Program

Can J Rural Med vol 3 (1):47

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Last fall the Society of Rural Physicians of Canada (SRPC) successfully launched its CME/Locum Program in St. Anthony, Nfld. The program, a first for Canada, offers rural communities the SRPC's Rural Critical Care (RCC) course modules along with locum relief by the doctors giving the course.

The SRPC sent Drs. Keith MacLellan, a family physician and SRPC president, Earle Potvin, a general surgeon, and Tom O'Neill, a GP anesthetist, all from Shawville, Que., to Newfoundland. There they gave several RCC courses on peritoneal lavage, paracentesis, insertion of chest tubes, pediatric crises and rapid-sequence induction to a group of 12 doctors from St. Anthony and the surrounding areas. When they were not teaching the workshops, Drs. O'Neill and Potvin worked shifts at the Charles S. Curtis Memorial Hospital in St. Anthony and Dr. MacLellan did a locum at Roddickton Community Health Centre and at Bonne Bay Hospital in Norris Point.

According to Dr. Kweku Dankwa, the pathologist who organized the day-long RCC course to coincide with a 3-day CME conference, the program was well received by all the rural doctors. He himself found it useful to spruce up his own skills. "I went to all the workshops," he said. "It was a useful thing and it introduced me to new ways of doing things like abdominal taps." He was impressed with the techniques of using different grades of dilatation for inserting chest tubes and felt that it would not frighten either the patient or the doctor who might be doing it for the first time. He was also impressed with the locum service that came with the package. "Without [the visiting doctors] offering to do the locums, a lot of the doctors in the outskirts would not have been able to attend the rest of the conference. It is very difficult to organize locums to come to the rural areas in Canada so [the CME/Locum Program] is quite a good idea."

It also turned out to be interesting for the visiting doctors, who had an opportunity to visit other parts of Canada and make some money doing so. Dr. Potvin, who taught chest tubes and peritoneal lavage, said, "It was very enlightening. It is interesting to see how other people manage their practice and how the hospital manages their administration and to have contact with other people from other areas who share the same comradeship and the same problems."

He felt that a regular conference format cannot impart the same experience because with the CME/Locum Program, "You live with them and you experience what they have to experience and you can share thoughts over a period of time as you're working with them. You're not just visiting but you're working in the field and so you have a much better feel for things."

One problem to be ironed out is that if the teaching doctors take locums so that the local doctors can attend the course, then who gives the course?

"It's quite clearly a problem," says Dr. MacLellan. "The SRPC's plan is to give the workshops several times over a week and have local doctors cover for their colleagues. The RCC doctors can then take locums when they are not teaching the workshops, to give the local docs a short holiday."

Interested? Contact Dr. MacLellan, Box 609, Shawville QC J0X 2Y0.

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Growth parameters of Inuit children in coastal Labrador

Table 1. Time intervals of selected measures and number of measurements of variables within measured time intervals

Age group	Males, no. of measurements				Females, no. of measurements			
	Time interval, mo	Height	Weight	Head circumference	Time interval, mo	Height	Weight	Head circumference
0	Birth	98	99	94	0-0.25	105	105	102
1	2.25-3.75	58	58	58	2.4-3.6	65	65	65
2	5.25-6.75	57	57	55	5.25-6.75	57	57	54
3	11.5-12.5	47	47	37	11-13	53	53	37
4	17-19	42	42	14	17-19	52	52	25
5	40-5621	21	N/A	50-62*	31	31	N/A	
Total		323	324	259		363	363	283

\*For females in age group 5, a different interval was selected in order to obtain a sufficient number of measurements.

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Growth parameters of Inuit children in coastal Labrador

Table 2. Height intervals and number of measures used to calculate sex-specific weight-for-height curves

Male		Female	
Height interval, cm	Weight measurement, no.	Height interval, cm	Weight measurement, no.
47.5-52.5	43	49-51	25
59-61	26	59-61	30
77.5-82.5	39	77.5-82.5	35
95-105	24	92-108	16
Total measures	132		106

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Growth parameters of Inuit children in coastal Labrador

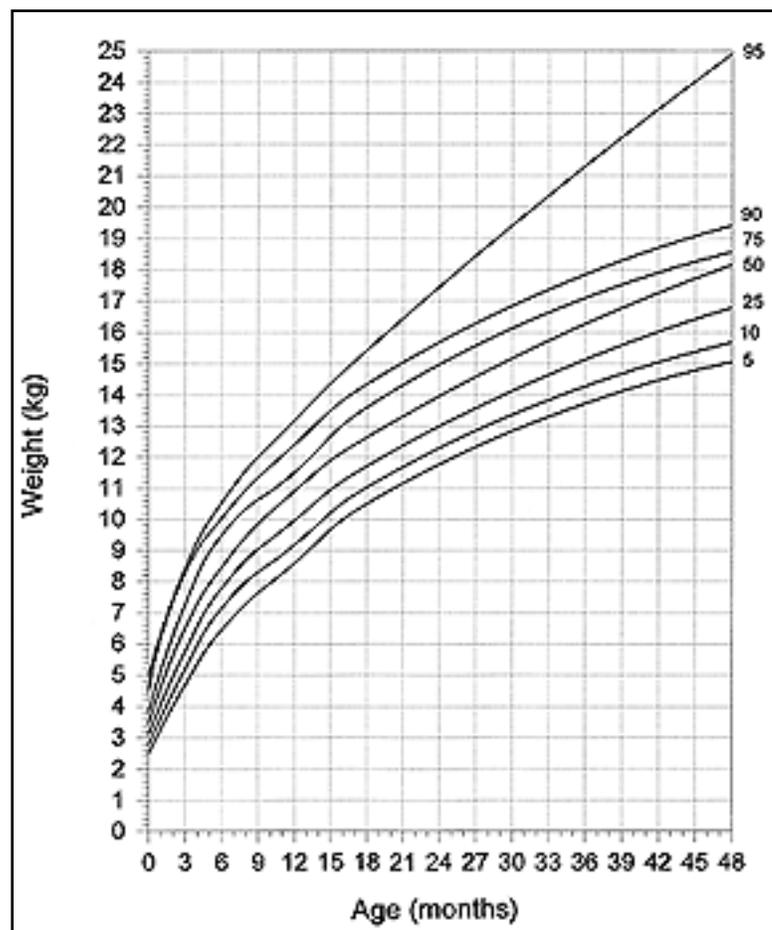


Fig. 1. Inuit males: weight by age percentiles.

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Growth parameters of Inuit children in coastal Labrador

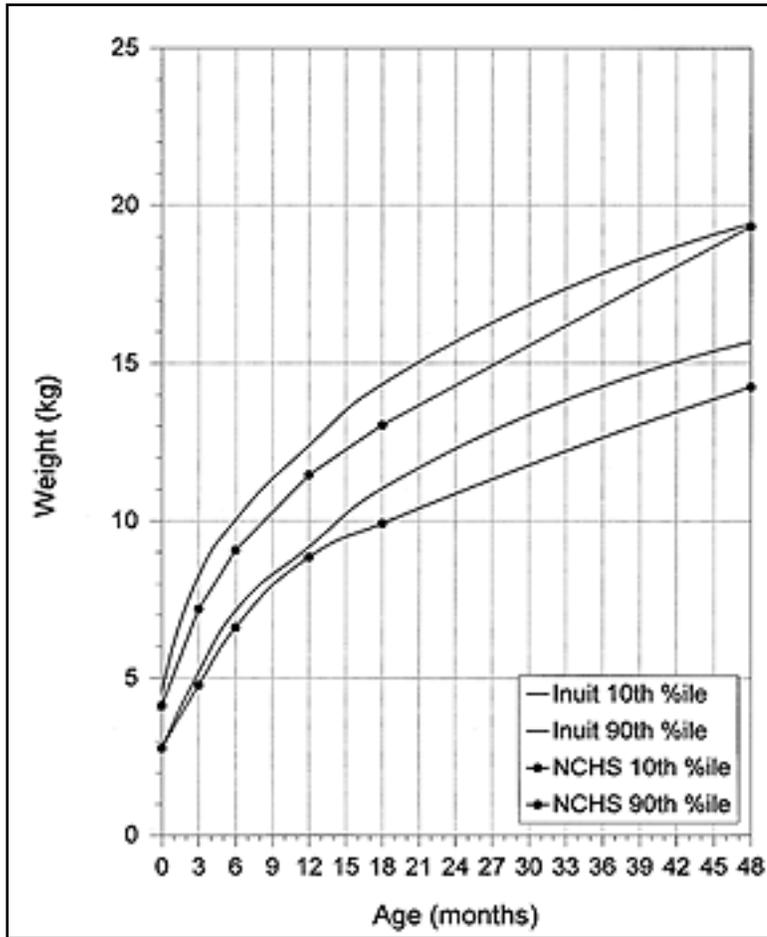


Fig. 2. Inuit males: weight by age 10th and 90th percentiles compared with National Center for Health Statistics (NCHS) data.

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Growth parameters of Inuit children in coastal Labrador

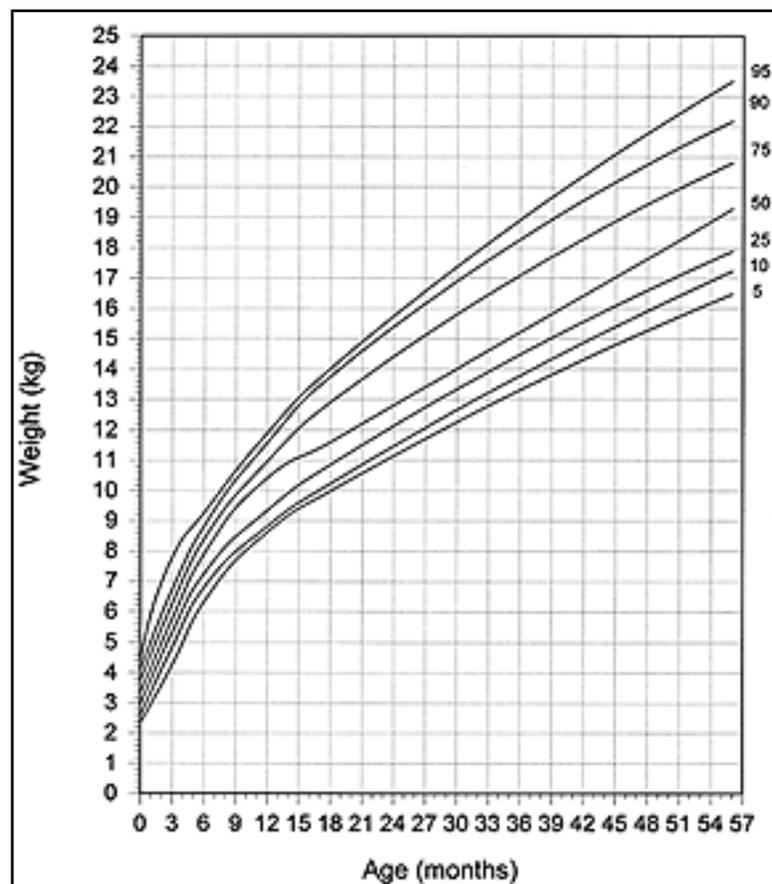


Fig. 3. Inuit females: weight by age percentiles.

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Growth parameters of Inuit children in coastal Labrador

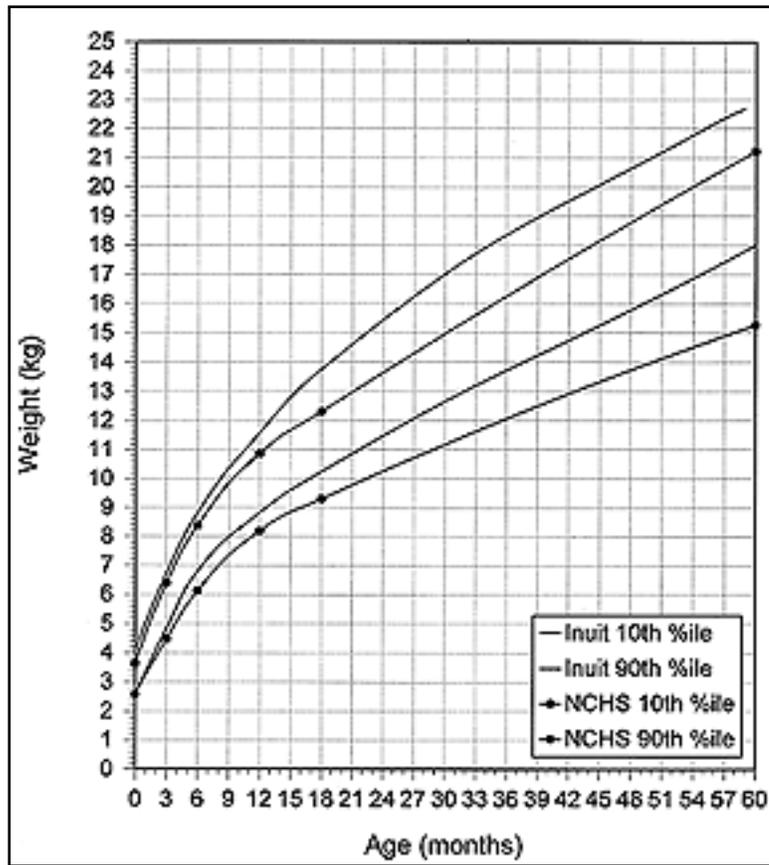


Fig. 4. Inuit females: weight by age 10th and 90th percentiles compared with NCHS data.

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Growth parameters of Inuit children in coastal Labrador

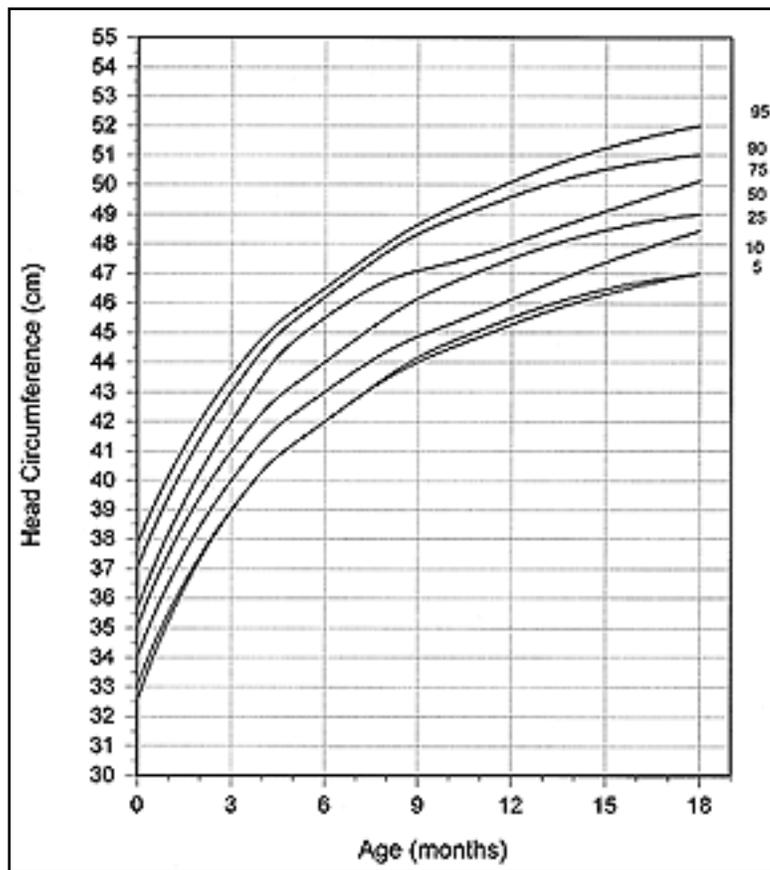


Fig. 9. Inuit males: head circumference by age.

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Growth parameters of Inuit children in coastal Labrador

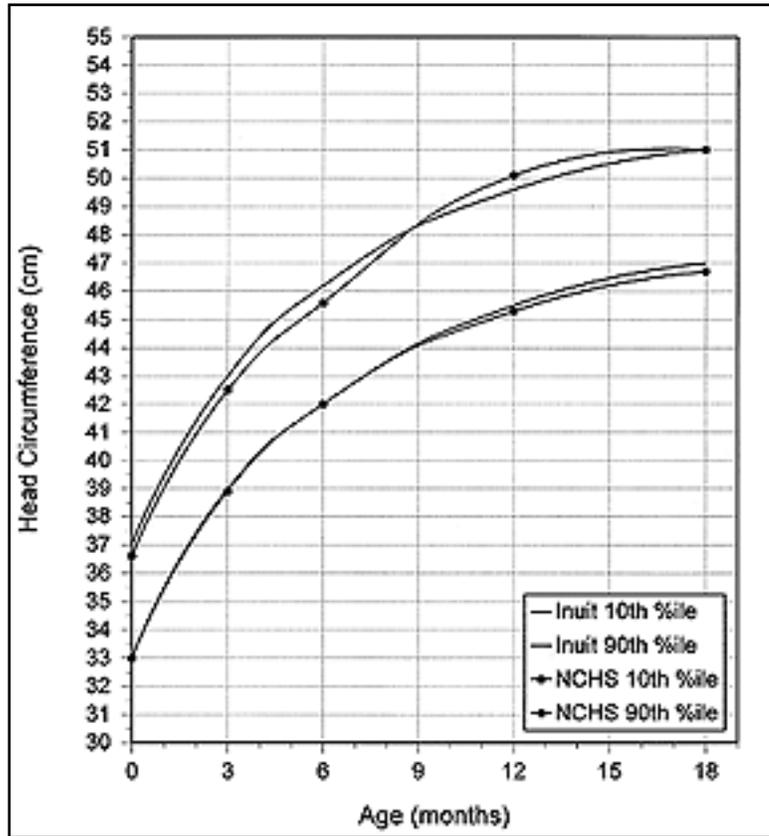


Fig. 10. Inuit males: head circumference by age 10th and 90th percentiles compared with NCHS data.

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Growth parameters of Inuit children in coastal Labrador

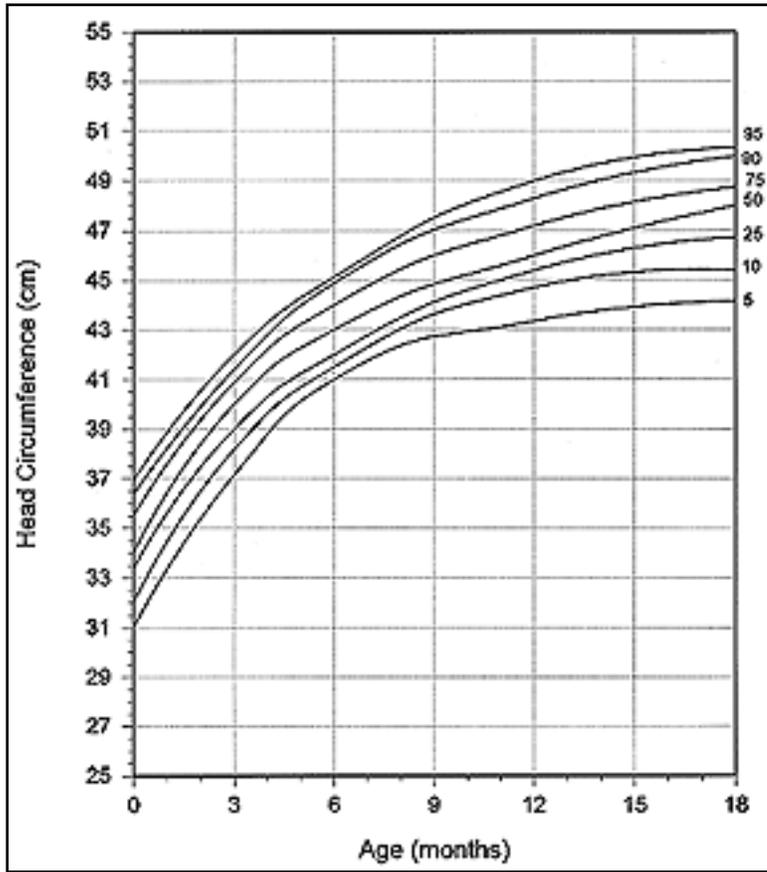


Fig. 11. Inuit females: head circumference by age.

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Growth parameters of Inuit children in coastal Labrador

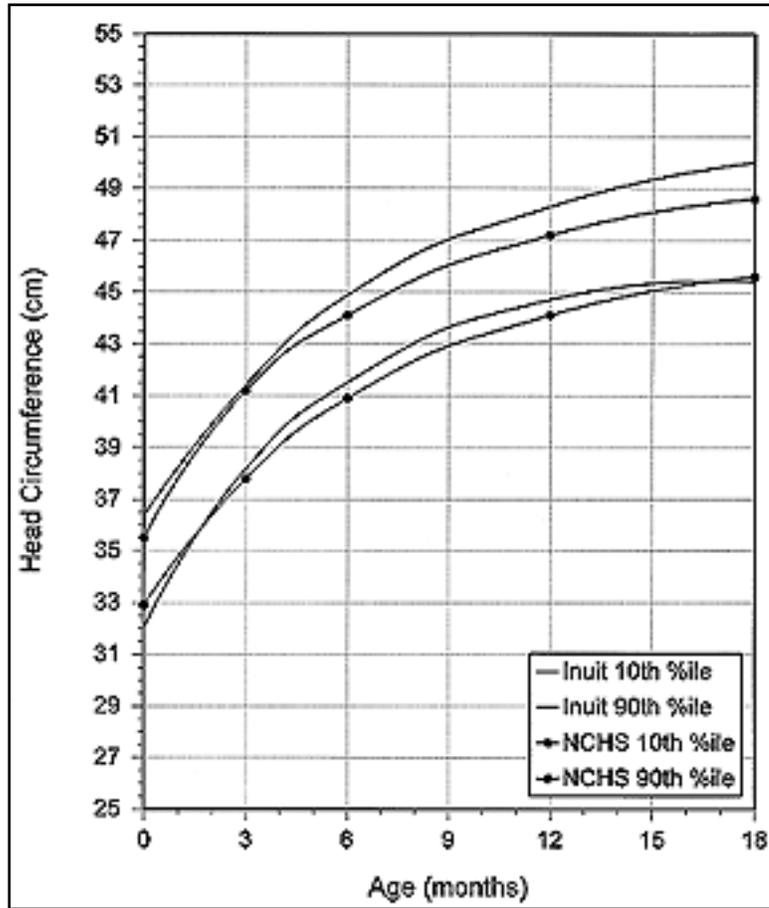


Fig. 12. Inuit females: head circumference by age 10th and 90th percentiles compared with NCHS data.

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Growth parameters of Inuit children in coastal Labrador

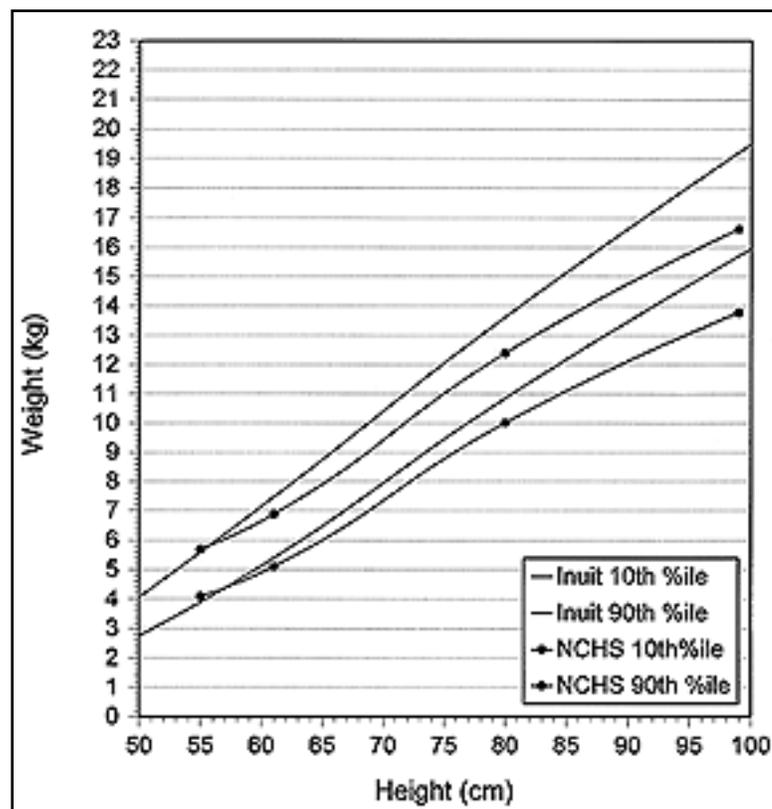


Fig. 13. Inuit males. Weight for height 10th and 90th percentiles compared with NCHS data.

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Growth parameters of Inuit children in coastal Labrador

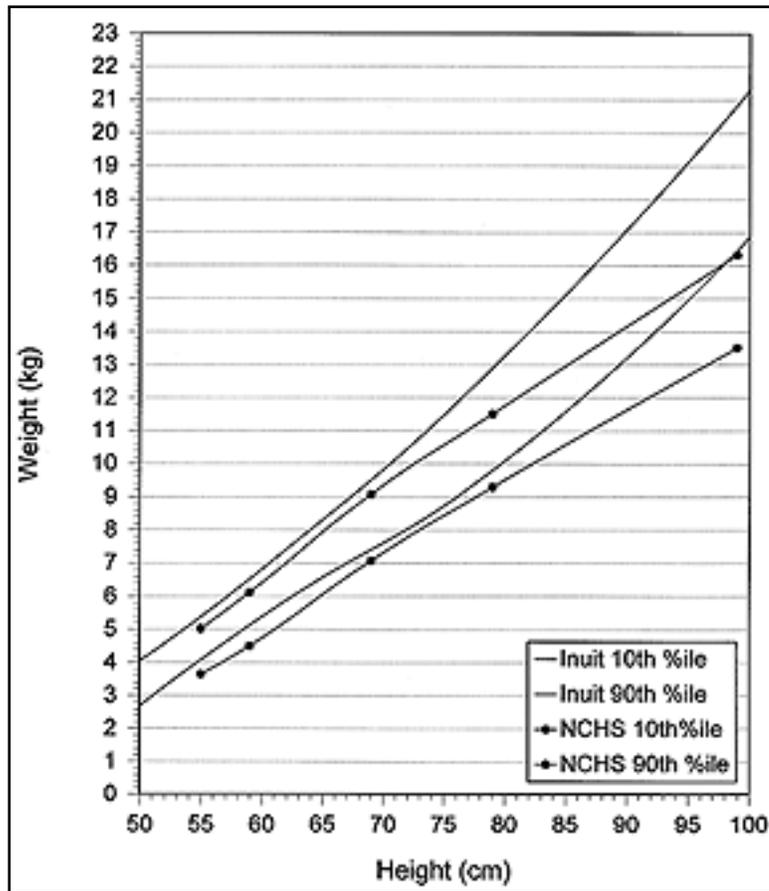
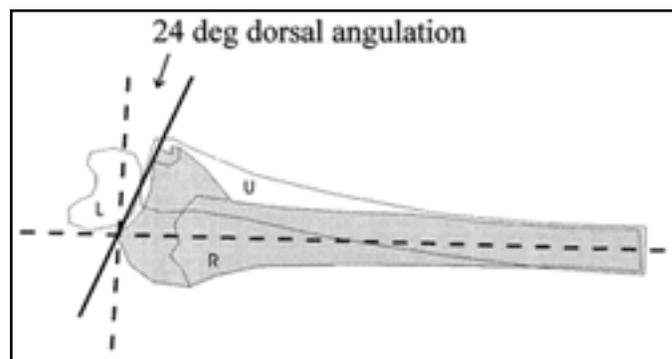
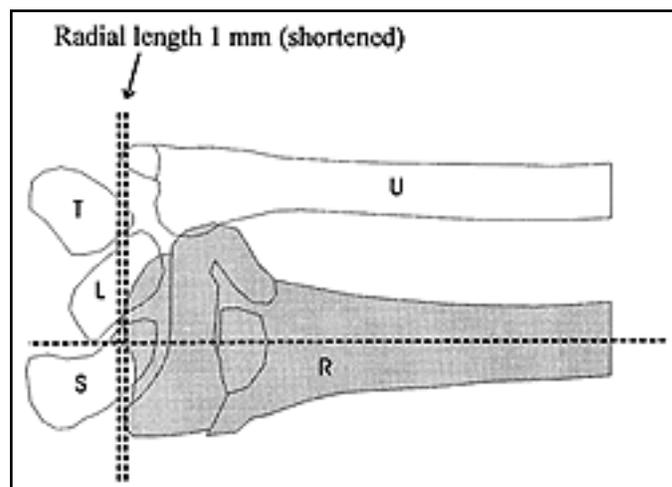
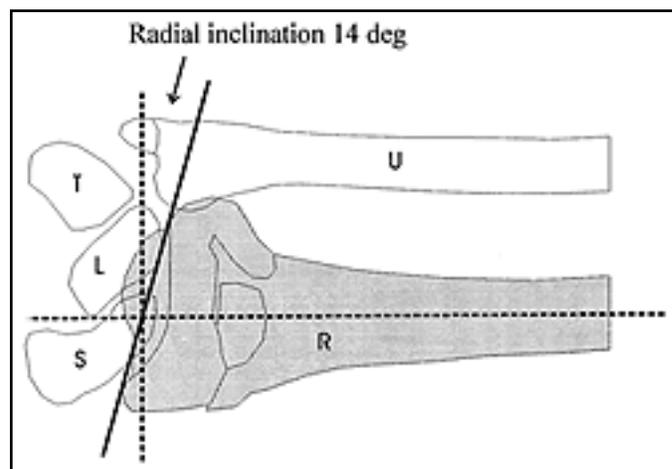


Fig. 14. Inuit females. Weight for height 10th and 90th percentiles compared with NCHS data.

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Managing Colles' fractures in rural practice



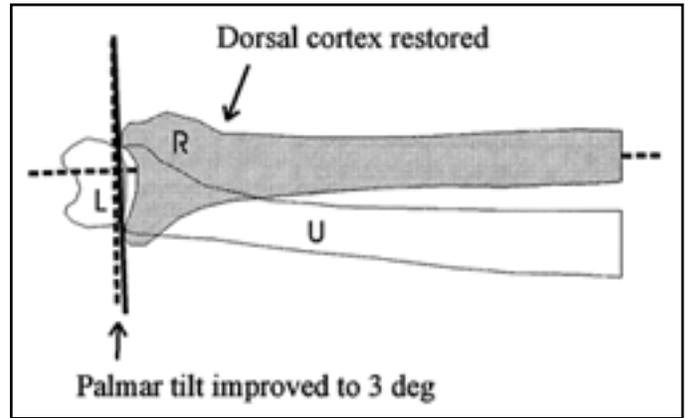


Fig. 1. Typical Colles' fracture before reduction in posteroanterior (top) and lateral (middle) views, and after reduction in the lateral view (bottom), showing the radius (R), ulna (U), scaphoid (S), lunate (L) and triquetrum (T) bones.

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Managing Colles' fractures in rural practice

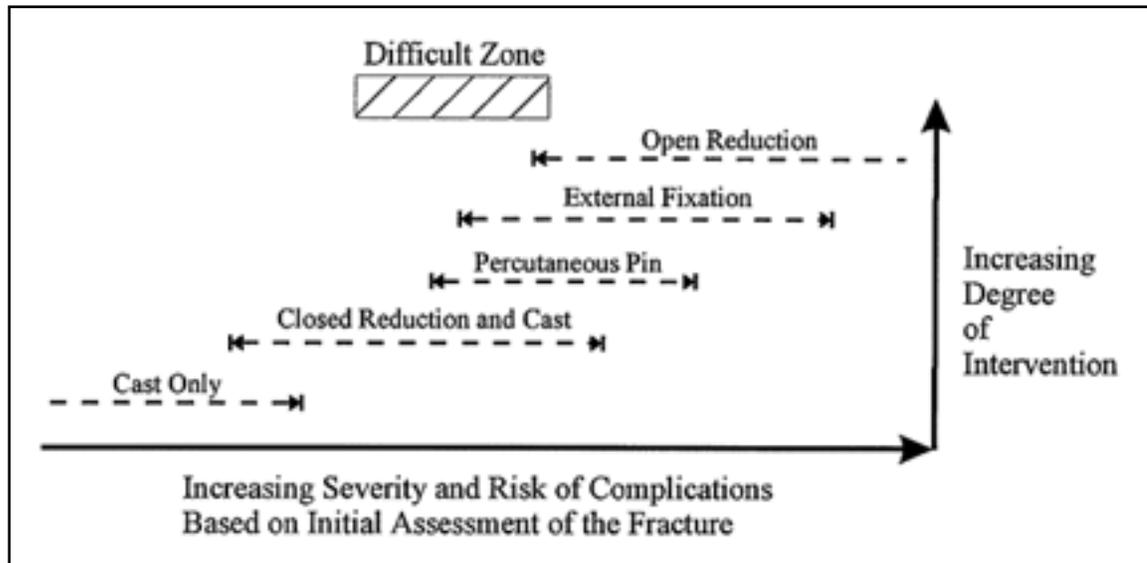


Fig. 2. Overlapping options for management in relation to the initial condition of distal radial fractures (DRFs). The "difficult zone" refers to fractures where optimum management can be difficult to determine in rural practice.

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Managing Colles' fractures in rural practice



Fig. 3. Posteroanterior (top) and lateral (bottom) views of a severe DRF.

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Managing Colles' fractures in rural practice

Table 1. Characteristics of Colles' fractures

Characteristic	Comments
Degree of dorsal angulation (Fig. 4, top)	<ul style="list-style-type: none"> <li>• Less likely to remain stable at higher degrees, greater risk of midcarpal instability, radiocarpal joint pain or reduced grip strength</li> </ul>
Degree of radial angulation (inclination) (Fig. 4, middle)	<ul style="list-style-type: none"> <li>• Less likely to remain stable at higher degrees</li> <li>• Less significant correlation with outcome than radial shortening</li> </ul>
Degree of radial shortening (Fig. 4, bottom)	<ul style="list-style-type: none"> <li>• &gt; 5 mm: less likely to remain stable, &gt; 10 mm: more likely to have symptoms</li> <li>• Seems to correlate significantly with poorer outcome, especially if it increases on follow-up x-rays</li> </ul>
Depth of comminution from the dorsal surface toward the volar surface and severity of comminution	<ul style="list-style-type: none"> <li>• Owing to the mechanism of injury, comminution tends to occur on the dorsal surface of the radius. Casting is more likely to fail if the comminution extends volarly to the midaxial plane of the radius or is more severe.</li> </ul>
Degree of intrarticular involvement	<ul style="list-style-type: none"> <li>• Less likely to remain stable at higher degrees</li> <li>• Increased risk of poorer functional outcome</li> </ul>

Degree of intra-articular step deformity	<ul style="list-style-type: none"> <li>● Less likely to remain stable at higher degrees</li> <li>● &gt; 2 mm step deformity: increased risk of poorer functional outcome</li> </ul>
Degree of displacement of the radial fragment medially or laterally	<ul style="list-style-type: none"> <li>● Less likely to remain stable at higher degrees</li> </ul>
Presence and degree of associated ulnar styloid fracture	<ul style="list-style-type: none"> <li>● Less likely to remain stable at higher degrees</li> <li>● Increased risk of distal radioulnar joint instability if the fracture is through the base of the ulnar styloid</li> </ul>
Associated radial styloid fracture	<ul style="list-style-type: none"> <li>● Less likely to remain stable at higher degrees</li> </ul>
Patient's age	<ul style="list-style-type: none"> <li>● A younger patient may have been fractured with a higher energy mechanism, hence might have a poorer outcome owing to soft-tissue damage.</li> <li>● Younger or higher-functioning patients require more aggressive management to ensure less disability.</li> </ul>
Degree of associated soft-tissue injury (mechanism of injury)	<ul style="list-style-type: none"> <li>● Higher energy mechanism of injury might correlate with poorer outcome owing to soft-tissue damage, regardless of the degree of other characteristics.</li> </ul>

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Managing Colles' fractures in rural practice

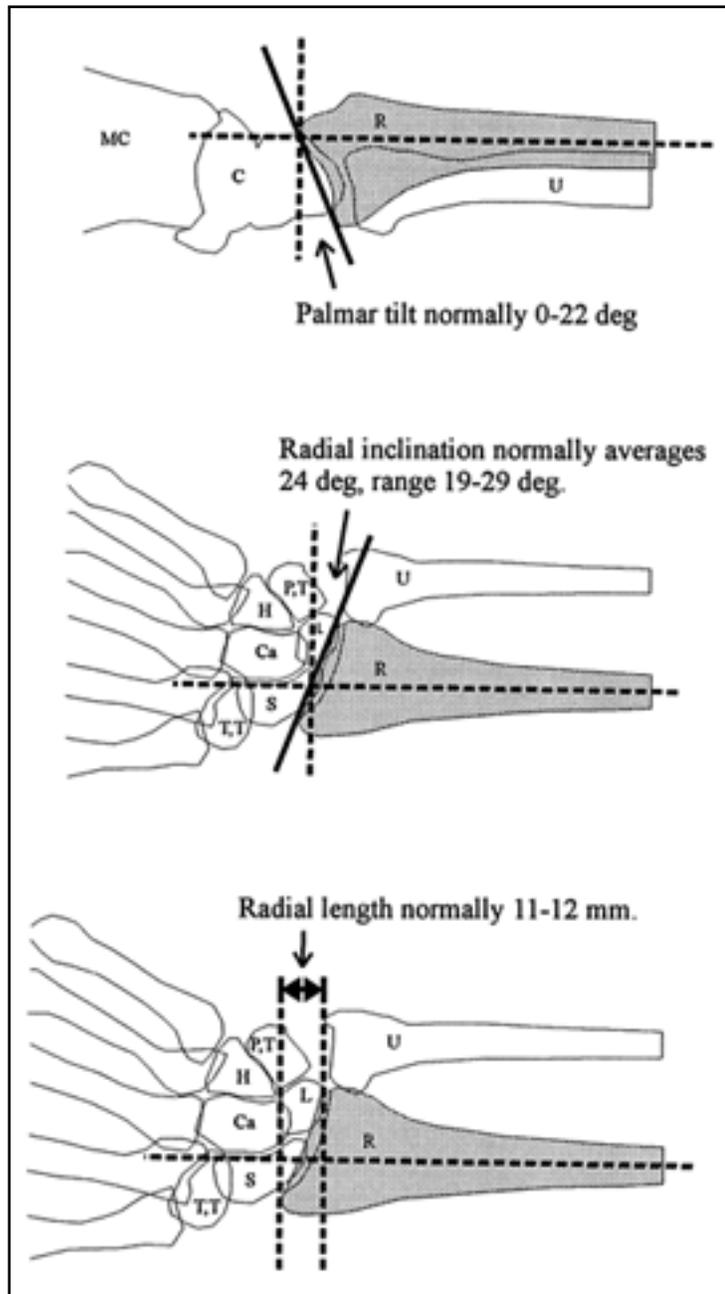


Fig. 4. Normal anatomy of the distal radius in lateral (top) and posteroanterior views (middle and bottom), showing the radius (R), ulna (U), carpal bones (C), metacarpals (MC), trapezoid and trapezium (T,T), scaphoid (S), capitate (Ca), hamate (H), lunate (L), and pisiform and triquetral

(P,T) bones. Ulnar styloid fractured through its base rather than more distally High kinetic energy mechanism of injury Development of pain not relieved by recasting

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Managing Colles' fractures in rural practice

Table 2. Complications of Colles' fractures

Redisplacement after reduction

Pain

Loss of grip strength

Reflex sympathetic dystrophy (algodystrophy, shoulder-hand syndrome)

Reduced range of movement

Finger stiffness

Osteoarthrosis/osteoarthritis of the radioulnar or radiocarpal joints

Neuropathies of the median, radial or ulnar nerves

Deformity/malunion

Degeneration of the radiocarpal joint

Demineralization

Volkman's ischemia

Late rupture of the extensor pollicis longus tendon and other tendons

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Managing Colles' fractures in rural practice

Table 3. Limits of acceptable disruption in an active patient

< 5 mm radial shortening

< 10°-20° dorsal angulation from the normal 11° palmar (volar) tilt of the radial surface on the lateral view, ideally > 0° palmar tilt

< 10° loss of normal radial inclination or final inclination > 10°-15°

< 2 mm articular surface step deformity

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Managing Colles' fractures in rural practice

Table 4. Reasons to consider referral for Colles' fractures

Greater degrees of radial shortening, dorsal angulation, radial inclination or radial fragment displacement, suggesting potential instability

> 2 mm step deformity of the radius in the radiocarpal joint

Complex joint involvement

Comminution of the radius extends from the dorsal surface volarly beyond the midaxial line of the radius on the lateral view, or is more severe

Fracture fails to maintain position or is stable after reduction only in an extreme casting position

Ulnar styloid fractured through its base rather than more distally

High kinetic energy mechanism of injury

Development of pain not relieved by recasting

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Managing Colles' fractures in rural practice



Fig. 5. Hematoma block, showing orientation of the injection.

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Managing Colles' fractures in rural practice

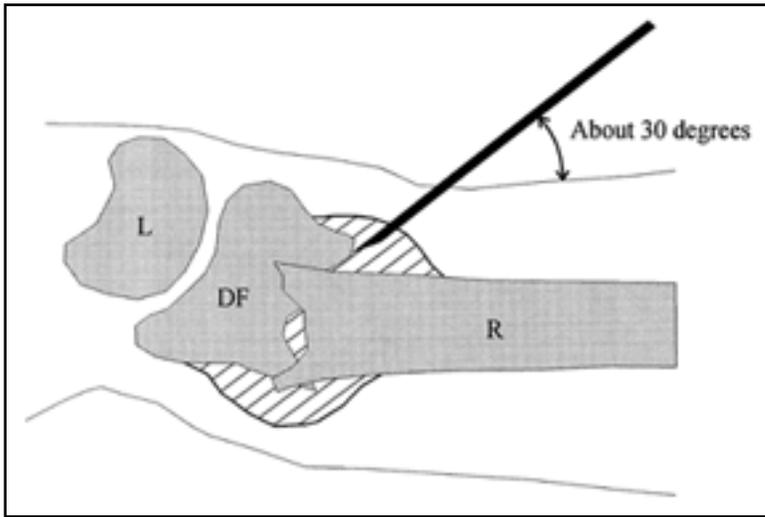


Fig. 6. Placement of the needle tip in a hematoma block, showing the lunate (L), radius (R), distal radial fragment (DF) and hematoma (diagonal lines).

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### Managing Colles' fractures in rural practice

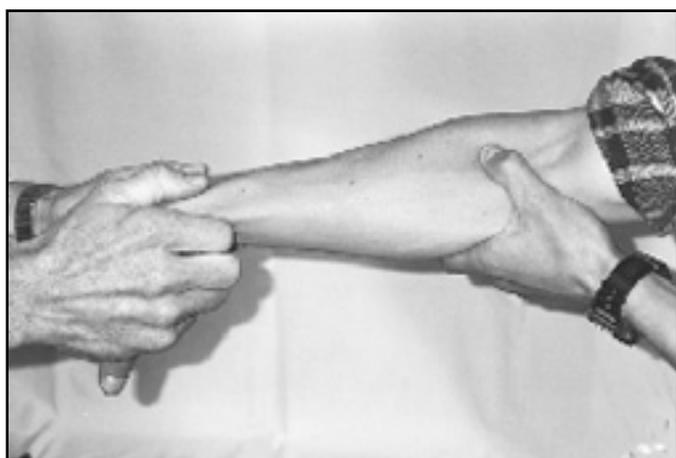


Fig. 7. Two-handed closed reduction.

Fig. 8. One-handed closed reduction.

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Managing Colles' fractures in rural practice



Fig. 9. Initial padding after reduction. Note the correct degree of flexion in the wrist.

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Managing Colles' fractures in rural practice



Fig. 10. Volar plaster slab.

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## Managing Colles' fractures in rural practice



Fig. 11. Application of tensor wrapping. Note that the correct degree of pronation/supination is "neutral."

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Country cardiograms case 7:  
Complete atrioventricular block associated with inferior myocardial infarction

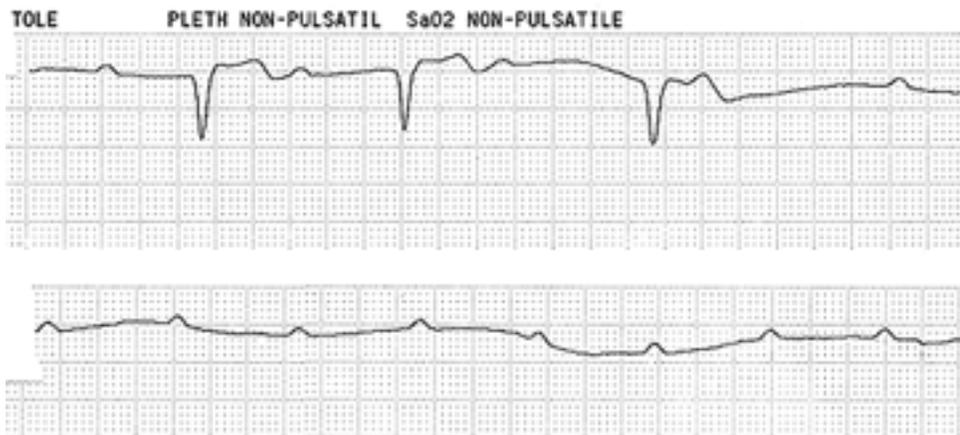
Hugh R. Hindle, MB BS, CCFP  
Hinton Medical Clinic, Hinton, Alta.

Can J Rural Med vol 3 (1):38

This paper has been peer reviewed.

### Findings

The ECG shows complete atrioventricular (AV) block indicated by dissociation of the P waves from the QRS complexes. Slightly widened junctional escape beats activate the ventricles. Q waves and ST elevation in the inferior leads suggest a recent inferior infarction, confirmed by a raised creatine kinase level. The patient subsequently remembered a few hours of severe "heartburn" 2 nights before.



What I should have done was to apply transcutaneous pacemaker pads, made sure that electrical capture was possible and arranged transfer for consideration of urgent transvenous pacing and angiography. However, lulled by his apparent stability, I admitted him to our hospital. By this time the patient needed to void. With the curtains drawn around him the following display appeared on the monitor.

The now unconscious patient responded promptly to atropine and was rapidly transported to a tertiary care hospital. He required transcutaneous pacing intermittently during transfer. Subsequently a transvenous pacemaker was necessary. Angiography showed critical circumflex disease requiring angioplasty and stenting. Normal AV conduction resumed after 10 days and he eventually made a good recovery.

Complete AV block is a common complication of myocardial infarction, occurring in 10% to 12% of patients with inferior infarctions and half as frequently with anterior infarctions.<sup>1</sup> AV block associated with anterior infarction is usually secondary to extensive myocardial necrosis; consequently death rates approach 50%.<sup>2</sup>

Ischemia of the AV node, due to occlusion of the right coronary artery or, less frequently, the circumflex artery, causes complete AV block with inferior infarction. Generally the block is transient, the escape pacemaker reliable and any bradyarrhythmias respond well to the administration of atropine.<sup>3</sup> Reflex vagal activity, frequently seen with inferior infarction, is also important in the development of complete AV block. The intense vagal stimulation of micturition precipitated asystole in this patient.

Although complete AV block associated with inferior myocardial infarction usually resolves spontaneously, it should not be regarded as a benign condition. Temporary pacing is necessary in 60% of patients and in-hospital death rates are 3 to 4 times higher than they are for inferior infarction without complete AV block. Much of the increased mortality can be explained by an association with larger infarct size, but complete AV block is independently associated with a twofold increase in death rates.<sup>1,2</sup> Next time I will call for the plane right away!

## References

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