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Postgraduate Education for Rural Family Practice

SUMMARY

In this article, the author sketches the rural family-practice setting and outlines the postgraduate educational needs of rural family physicians. He then identifies some of the problems and deficiencies that currently exist and puts forward some recommendations. (*Can Fam Physician* 1988; 34:1057-1060.)

Key words: family medicine, rural practice, postgraduate education

RÉSUMÉ

Dans cet article l'auteur esquisse la pratique familiale en milieu rural et décrit les besoins éducationnels postdoctoraux du médecin de famille en milieu rural. Il identifie ensuite certains problèmes et déficiences que l'on constate actuellement et propose quelques recommandations.

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THE POSTGRADUATE education needs of rural family physicians is a timely topic. This article is based on a study of rural family physicians done in the Spring of 1987,¹ a review of the literature, my personal experience, and the consensus of a wide range and large number of practising rural family physicians, including the executive of the Ontario Medical Association's Section on Rural Practice. While I have made every effort to canvass as broad a segment of opinion as possible, the views expressed are my own and do not necessarily reflect the official position of any organization.

The Rural Family-Practice Setting

Rural family practice is a challenging and rewarding career, quite distinct and different from family practice in a large urban centre. Each rural-practice setting is unique. In general, rural family physicians have more hospital responsibility for patients in all kinds of situations, with little specialist back-

up. Available referral sources are fewer and more distant.

Rural hospitals do not usually have FRCS obstetricians or FRCS anesthetists or full-time emergency physicians. This circumstance is unlikely to change in the foreseeable future. Even if all deliveries in one area were turned over to an obstetrician rather than to family physicians, one obstetrician could not possibly provide the necessary 24-hour-a-day, seven-day-a-week coverage that several family physicians doing obstetrics can provide by working together. Similarly, if all anesthetics in a given area were administered by one full-time FRCS anesthetist, 24-hour-a-day, seven-day-a-week coverage of anesthesia for emergencies such as obstetric deliveries, trauma, or even routine appendectomies could not be provided as readily as by three or four general-practice anesthetists working together. Except in busy summer holiday months in resort areas, most community-hospital emergency departments in rural areas lack sufficient numbers of patients to justify the cost of keeping full-time emergency physicians on staff. Fortunately, most rural physicians do emergency medicine rotations and obstetric deliveries, while a significant number do GP anesthesia. These services are vitally important to their communities.

In order to predict physician-training needs for the rural parts of the country,

it is important to know physician-distribution data, including the proportion of rural physicians who do select activities such as obstetrics and GP anesthesia, and awareness of which of these services are in shortest supply. Unfortunately, the literature is limited. The CMA Databank survey of 1982² showed that 12.2% of Ontario GP/FPS and 2.5% of Ontario specialists practise in rural communities, defined by Stats Canada as those communities with a population under 10 000. A survey of Ontario family physicians made in 1987 found that 17% practise in communities of under 10 000 population.³

A 1987 survey of full-time rural family physicians¹ found that 93% do emergency medicine rotations, 77% do obstetric deliveries, and 37% do GP anesthesia. Their postgraduate training averaged 2.5 years. One-third had completed specific family-medicine training programs, while a further one-third had achieved their CCFP as practice-eligible candidates. By contrast, a broadly based Ontario study³ conducted in 1987 found that only 40% of Ontario family physicians in active practice do obstetrics. Further analysis of the data showed that 58% of family physicians in communities of fewer than 10 000 persons practise obstetrics. The CMA Databank survey of 1982 found that 7.4% of all GPs do GP anesthesia.² A report tabled in 1982 of 35 Northern Ontario hospitals with fewer

than 100 active beds demonstrated a definite need for more GP anesthetists.⁴ In the past, many rural GPs did both obstetrics and GP anesthesia.

Now many rural physicians are choosing to do either GP anesthesia or obstetric deliveries, but less often both. Given the effect of lifestyle factors, this trend is likely to increase and might lead to figures such as the following: 66% doing emergency medicine rotations, 50% doing obstetrics, and 25% doing GP anesthesia. This projection may be overly optimistic, given the general exodus of family physicians from obstetrics and the disappearance of GP anesthesia training positions. Very few rural GPs do any major surgical operations now. This feature of practice is becoming limited to very remote areas, and the trend is unlikely to change. A major study of these physician manpower issues in rural Ontario hospitals is now being planned.

Educational Needs of Rural Family Physicians

Given the rural Ontario setting, what training is required to produce competent, confident, rural family physicians? One frequent, though impractical, response is the suggestion that a "comprehensive rural family-medicine training add-on program" be designed. Such a program might take some such shape as this: the standard two-year family-medicine program plus a one-year emergency-medicine (CCFP(EM)) program, plus a one-year course in anesthesia, including pediatric and ICU anesthesia, plus an additional six months training in obstetrics, plus a three-month rural practice apprenticeship, and a final three-month period of elective study. Total time: five years! Although such a course would satisfy almost all training requirements, it is clearly unnecessary, undesirable, and impractical. Such a requirement would effectively extinguish any prospective interest that residents might have in practising in a rural setting.

The postgraduate educational needs of rural family physicians can be better met by a compact, flexible, integrated training program rather than by an "add-on" model.

Emergency medicine

Emergency medicine is a basic part of rural family practice. Training in both adult and pediatric emergency

medicine, preferably with some intensive care-unit (ICU) experience, is a necessity. Advanced cardiac life-support (ACLS) training and, preferably, advanced trauma life-support (ATLS) training should be included. This is particularly important because small community hospitals lack the specialist back-up available to emergency physicians in urban settings.

Obstetrics

Despite policies of transferring high-risk pregnancies to tertiary-care settings when possible, unavoidable and unexpected difficulties and complications often arise during labour and delivery. In this situation, the rural family physician turns to another rural family physician for consultation. Minimal training in obstetrics is not enough for physicians practising in this setting. For obstetrics, quality in terms of experience and skills in such techniques as the use of forceps is more important than the length of time spent in training. Ideally, six months' training, including neonatology, would be provided for prospective accoucheurs.

The issues of training and other factors surrounding FP obstetrics are complex and have been addressed by various groups. The Report of the Ad Hoc Committee on Training Programs in Canada in Obstetrics and Gynaecology for Primary Care Physicians, for instance, is an excellent source of information.⁵ Dr. Michael Klein and colleagues also discussed these issues in detail and recommended increased involvement of family-physician role models and community hospitals in the teaching of obstetrics.⁶ The report of the Canadian Medical Association on obstetrical care in Canada recommends more "hands-on" experience in obstetrical training through greater use of community hospitals.⁷ All three groups support the idea of six months of training, including neonatology. This training period could consist of "three months combined in the clerkship and internship level followed by three months in an appropriately structured residency position".^{5,7} This level of training would be ideal for most rural family practitioners.

Anesthesia

As well as administering epidurals for obstetrics and general anesthesia for elective and emergency operations, the GP anesthetist is often called in to assist cases of life-threatening trauma and

medical cases. This is because of his/her anesthesia/ICU experience. Ideal training would last one year and would include active ICU experience and pediatric anesthesia, along with a core of at least six months general adult anesthesia, including obstetric anesthesia. A good quality GP anesthesia program with six months anesthesia training should be adequate, particularly for experienced physicians who wish to return to residency to develop this additional skill. A longer requirement would effectively eliminate this program as a realistic option.

General

The rural family physician should also have specific education and training in public health and community health/disease patterns particular to rural practice. This education should include a working knowledge of occupational and environmental agricultural health problems relating to matters such as farm accidents and safety. These topics are not generally included in medical education, although journal and textbook references are available.^{8,9} Of course, in addition to these special training needs, the rural family physician requires a firm foundation in geriatrics, pediatrics, internal medicine, surgery, and psychiatry. Hands-on experience in responsible residency positions is essential.

Specific training in family medicine should remain a cornerstone of all family doctors' education. The resident should spend some of the training time allotted to family medicine in a rural-practice setting. This arrangement would allow the resident to experience the pleasures and difficulties of rural practice in an appropriate learning environment. Close attention should be given to the development and co-ordination of flexible integrated programs, ideally through university Departments of Family Medicine.

Problems with Existing Programs

Examination of some of the existing problems with training may suggest appropriate solutions. Generally speaking, there is a lack of training in skills needed for rural practice. Often feelings of inadequacy result from a lack of hands-on training and from holding subordinate, rather than responsible, residency positions. One-year rotating internships often lack a specific family-medicine training component and allow

too little time for specific skills training for rural practice.

Two-year family medicine programs are often tailored to meet the needs of graduates planning to practise in urban areas. Sometimes these programs can be too rigid to accommodate the specific training needs of rural physicians. Fortunately, however, there are some exceptions. The University of British Columbia provides one recently published example.^{10, 11}

Residency cutbacks have compounded the problems by making it difficult for graduates to design a personal year-and-a-half, two-year, or two-and-a-half year rural training program. General practice anesthesia has been particularly hard hit by the cutbacks, and anesthesia departments now choose to fund FRCS residents rather than GP anesthesia positions. In Ontario, in fact, only the University of Toronto anesthesia program offers funded GP anesthesia courses (one year). The other medical faculties will consider a GP anesthesia position only if outside funding is available or if there is a drop-out spot to fill.

This problem is further compounded by the refusal of the Ontario Ministry of Health to fund programs that do not lead to licensure, certification, or fellowship.

These problems, unless corrected, will interfere with the provision of competent, confident, rural family physicians with appropriate expertise, particularly in emergency medicine, obstetrics, and GP anesthesia.

Recommendations

The Report of the CMA Task Force on Education noted the need for special training for physicians planning to practise in rural and remote areas. Recommendation VII proposes:

That sufficient extra residency training positions be funded to allow some family physicians to develop areas of special competence.¹²

In August 1987, the CMA General Council passed the following recommendation:

That appropriate training in specialty areas of medicine be provided to family medicine residents within the existing two years of residency training program where possible and asked for enough flexibility within prelicensure clinical training pro-

grams to prepare physicians for a variety of practice situations in Canada (e.g., rural, isolated, urban) without undue prolongation of the training period.¹³

It should be possible to integrate most of the training for rural family physicians into a flexible two-year family-medicine program with the possible addition of a further six to 12 months training as needed. Specific training in family medicine should include some time spent in a rural family-practice setting. Rural occupational and environmental medicine should be included in the family-medicine curriculum. Adult- and pediatric-emergency training is essential with, ideally, some ICU experience. Residents might choose "an obstetrics stream" in which more extensive hands-on experience provides a period of six months training in obstetrics and neonatology that is integrated into the family-medicine program.

It should be possible to choose a "GP anesthesia stream" which would allow three to six months training in anesthesia during the senior family-medicine year, followed by a further six-month anesthesia block. This program would allow time for ICU and pediatric anesthesia, in addition to general adult and obstetric anesthesia within a two-and-a-half-year family-medicine program. Many physicians consider that a high-quality six-month anesthesia program should be adequate. The College of Family Physicians of Canada's Board of Directors addressed this issue in November 1986, and passed the resolution that "good quality family practice anesthesia training programs, specifically six month training programs, continue to be available." Funding arrangements should be addressed. Given the present residency-program cutbacks, it is unlikely that anesthesia departments will resume funding of GP anesthesia programs. Therefore GP anesthesia could best be funded specifically and directly through family-medicine training programs as a training option.

The importance of hands-on learning experience must be emphasized. Responsible residency positions may be more realistically achieved by shifting hospital rotations from tertiary university-type hospitals to large community hospitals where there is a smaller superstructure and complement of senior residents. Consideration could be given to including more Northern hos-

pitals, such as those of Thunder Bay and Sudbury, in the new selection. This change might have the additional benefit of making residents familiar with more Northern settings and encouraging their return to those areas.

Similarly, it has been shown that medical students and residents who experienced some rural family-medicine training were more likely to return to that setting to practise.¹⁴ Thus, medical-school curricula could be improved by incorporating rural medicine.^{9, 15}

Appropriate, flexible, integrated, postgraduate training programs for rural family practice require careful development and co-ordination by university Departments of Family Medicine. The appointment of a rural family-practice training co-ordinator to family-medicine programs would facilitate this process. A syllabus of required skills should be developed.

Continuing medical education is another important factor in helping all physicians, including rural family physicians, to maintain their skills. Universities might offer support of CME by such means as the Perinatal Outreach Program. Programs of this type could be extended to other fields such as GP anesthesia and emergency care. Short refresher modules that are skill- and experience-oriented and that provide one to two weeks of training would be of value, particularly in obstetrics, neonatology, and anesthesia.¹⁶

Overview

Rural family practice offers a unique, challenging, and rewarding career. Competent, confident, rural family physicians with appropriate expertise, particularly in emergency medicine, obstetrics, and GP anesthesia, are essential to the well-being of their communities. Therefore their potential, rural family physicians must acquire special knowledge and technical skills. To this end, it is particularly important that appropriate training resources be made available. Compact, flexible, integrated, training programs, with an emphasis on hands-on training in responsible residency positions, are required. ■

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BRIEF PRESCRIBING INFORMATION ASPIRIN*

(acetylsalicylic acid tablets, U.S.P.)

THERAPEUTIC OR PHARMACOLOGICAL CLASSIFICATION: Analgesic, anti-inflammatory, anti-pyretic and platelet aggregation inhibitor.

ACTIONS: Acetylsalicylic acid (ASA) interferes with the production of prostaglandins in various organs and tissues through acetylation of the enzyme cyclo-oxygenase. Prostaglandins are themselves powerful irritants and produce headaches and pain on injection in man. Prostaglandins also appear to sensitize pain receptors to other noxious substances such as histamine and bradykinin. By preventing the synthesis and release of prostaglandins in inflammation, Aspirin* may avert the sensitization of pain receptors.

Acetylsalicylic acid's antipyretic activity is due to its ability to interfere with the production of prostaglandin E in the brain. Prostaglandin E, is one of the most powerful pyretic agents known.

Acetylsalicylic acid's inhibition of platelet aggregation is due to its ability to interfere with the production of thromboxane A₂ within the platelet. Thromboxane A₂ is, for a large part, responsible for the platelets' aggregating properties.

INDICATIONS: ASPIRIN (acetylsalicylic acid) is indicated for the relief of pain, fever and inflammation of a variety of conditions such as influenza, common cold, low back and neck pain, dysmenorrhea, headache, toothache, sprains and strains, fractures, myositis, neuralgia, synovitis, arthritis, bursitis, burns, injuries, following surgical and dental procedures.

Aspirin is also indicated for the following uses, based on its platelet aggregation inhibitory properties:

- for reducing the risk of morbidity and death in patients with unstable angina and in those with previous myocardial infarction;
- for reducing the risk of transient ischemic attacks (TIA) and for secondary prevention of atherothrombotic cerebral infarction;
- for prophylaxis of venous thromboembolism after total hip replacement in men;
- for reduction of adhesive properties of platelets in patients following carotid endarterectomy to prevent recurrence of TIA and in hemodialysis patients with a silicone rubber arteriovenous cannula.

CONTRAINDICATIONS: Salicylate sensitivity; active peptic ulcer.

WARNINGS: ASA is one of the most frequent causes of accidental poisonings in toddlers and infants. Tablets should be kept well out of the reach of children.

A possible association between Reye's syndrome and the use of salicylates has been suggested but not established. Reye's syndrome has also occurred in many patients not exposed to salicylates. However, caution is advised when prescribing salicylate-containing medications for children and teenagers with influenza or chickenpox.

PRECAUTIONS: Administer salicylates cautiously to patients with asthma and other allergic conditions, a history of gastrointestinal ulcerations, bleeding tendencies, significant anemia or hypoprothrombinemia.

Patients taking ASA daily are at an increased risk of developing gastrointestinal bleeding following the ingestion of alcohol.

Caution is necessary when salicylates and anticoagulants are prescribed concurrently, as salicylates can depress the concentration of prothrombin in the plasma.

Diabetics receiving concurrent salicylate-hypoglycemic therapy should be monitored closely, and reduction of the sulfonylurea hypoglycemic drug dosage or insulin requirements may be necessary.

High doses (3 g daily) of ASA during pregnancy may lengthen the gestation and parturition time.

Salicylates can produce changes in thyroid function tests.

Sodium excretion produced by spironolactone may be decreased by salicylate administration.

Salicylates in large doses are uricosuric agents, smaller amounts may depress uric acid clearance and thus decrease the uricosuric effects of other drugs.

Salicylates also retard the renal elimination of methotrexate.

ADVERSE EFFECTS:

Gastrointestinal: nausea, vomiting, diarrhea, gastrointestinal bleeding and/or ulceration, dyspepsia, heartburn.
Ear: tinnitus, vertigo, hearing loss.

Hematologic: leukopenia, thrombocytopenia, purpura, anemia.

Dermatologic and hypersensitivity: urticaria, angioedema, pruritus, skin eruptions, asthma, anaphylaxis.

Miscellaneous: mental confusion, drowsiness, sweating, thirst.

SYMPTOMS AND TREATMENT OF OVERDOSAGE:

Symptoms: in mild overdosage these may include rapid and deep breathing, nausea, vomiting, vertigo, tinnitus, flushing, sweating, thirst and tachycardia. In more severe cases, acid-base disturbances including respiratory alkalosis and metabolic acidosis can occur. Severe cases may show fever, hemorrhage, excitement, confusion, convulsions or coma and respiratory failure.

Treatment consists of prevention and management of acid-base and fluid and electrolyte disturbances. Renal clearance is increased by increasing urine flow and by alkaline diuresis but care must be taken in this approach to not further aggravate metabolic acidosis and hypokalemia. Acidemia should be prevented by administration of adequate sodium containing fluids and sodium bicarbonate. Hypoglycemia is an occasional accompaniment of salicylate overdosage and can be managed by glucose solutions. If a hemorrhagic diathesis is evident, give vitamin K. Hemodialysis may be useful in complex acid base disturbances particularly in the presence of abnormal renal function.

DOSAGE:

Analgesic and antipyretic:

Adults: 1-2 tablets (325 mg to 650 mg) orally every 4 hours.
Children under 12: 10 to 15 mg/kg every 6 hours, not to exceed a total daily dose of 2.4 g.

Anti-inflammatory:

Adults: 3 tablets (975 mg) 4 to 6 times a day, up to 30 tablets daily, may be required for optimal anti-inflammatory effect. A blood level between 15 and 30 mg per 100 mL is in the desirable therapeutic range.

Children: 60 to 125 mg/kg daily in 4 to 6 divided doses.

Platelet aggregation inhibitor:

- for prophylaxis of venous thromboembolism after total hip replacement in men: 2 tablets (650 mg) twice a day, started 1 day before surgery and continued for 14 days;
- for all other platelet aggregation inhibitory uses: 1 to 4 tablets (325 to 1300 mg) daily, according to individual needs and generally accepted standards for each indication.

AVAILABILITY: Each white tablet with the Bayer Cross* contains 325 mg (5 gr) acetylsalicylic acid. In packages of 12, 24, 48, 100, 200 and 300.

Also supplied as ASA 500 mg tablets U.S.P., in packages of 30, 50 and 100.

Flavoured Children's Size ASPIRIN*; each peach coloured tablet, with pleasant orange taste, contains 80 mg (1 $\frac{1}{4}$ gr) acetylsalicylic acid. In bottles of 24.

All Sterling ASA preparations are sodium and tartrazine-free.

Product Monograph available to health professionals upon request.

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