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A survey of recently trained general practitioner anesthetists in Ontario. Part I: Does residency training adequately prepare them for practice?

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A decreasing availability of anesthetic services has been identified in rural communities. The Society of Rural Physicians of Canada recommends the use of general practitioner anesthetists (GPAs) to address this shortage. GPAs must be trained to deliver adequate care. This survey evaluated the degree to which Ontario residency programs prepare GPAs for various aspects of practice and examined the use of continuing medical education resources by GPAs. In this article, Part I of a report on the survey, the adequacy of Ontario residency programs for GPAs is addressed. All family physicians (n = 41) who had undergone advanced skills training anesthesia in Ontario between 1995 and 2000 were polled. Thirty-one of 41 GPAs responded. Eighty-seven percent were still practising as GPAs, 85% of whom remained in Ontario. GPAs generally felt very to extremely well prepared for their anesthesia duties. Areas where residency training could have been augmented included: pediatrics, neonatal medicine, intensive care, chronic pain, regional blocks, trauma management and administrative functions as they relate to GPAs. Eighty-four percent of respondents wanted a certification exam implemented. Educational coordinators of PGY3 advanced skills in anesthesia programs should be encouraged to consider these findings in the refinement of their curricula. The importance of developing a national society that will represent the needs of GPAs was recognized.

Une baisse de la disponibilité des services d'anesthésie a été relevée dans les communautés rurales. La Société de la médecine rurale du Canada recommande de faire appel aux omnipraticiens anesthésistes (OPA) pour lutter contre la pénurie. Les OPA doivent recevoir une formation appropriée pour dispenser des soins adéquats. Cette enquête a évalué la mesure dans laquelle les programmes de résidence en Ontario préparent les OPA aux divers aspects de la pratique, et a examiné l'usage que font les OPA des ressources d'éducation médicale continue. Le présent article, première partie du rapport sur l'enquête, porte sur la suffisance des programmes de résidence de l'Ontario pour les OPA. Tous les médecins de famille (n = 41) qui avaient suivi une formation spécialisée poussée en anesthésie entre 1995 et 2000

ont été sondés. Trente et un des 41 OPA ont répondu. La proportion des OPA toujours actifs s'est établie à 87 %, dont 85 % n'avaient pas quitté l'Ontario. En règle générale, les OPA estimaient qu'ils avaient été très bien à extrêmement bien préparés pour leurs fonctions en anesthésie. Les domaines de la formation en résidence qui pourraient être renforcés comprenaient la pédiatrie, la médecine néonatale, les soins intensifs, la douleur chronique, les blocs nerveux régionaux, la prise en charge des traumatismes et les fonctions administratives relevant des OPA. Parmi les répondants, 84 % souhaitaient qu'un examen de certification soit mis en application. Il faudrait encourager les coordonnateurs en éducation des programmes de formation postdoctorale poussée de niveau 3 en anesthésie à tenir compte de ces constatations lorsqu'ils raffineront leurs programmes d'études. On a reconnu l'importance de la mise sur pied d'une société nationale qui représenterait les besoins des OPA.

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Introduction

General practitioner anesthetists (GPAs) are a valuable resource for remote and rural communities that would otherwise be left with inadequate anesthetic, obstetrical and surgical services. It has been estimated that GPAs administer 25% of general anesthetics in Ontario.¹ Throughout Canada, 6.6% of anesthetic care is delivered in rural hospitals and GPAs are responsible for delivering 60.6% of those services.² Rourke notes that 6% of Ontario births occur at small hospitals and that there is a diminishing availability of epidural and cesarean section capabilities due to a decline in available anesthetists.³ Not only are rural communities currently underserved by anesthetists holding Royal College of Physicians and Surgeons of Canada (RCPSC) certification, but the availability of these certified anesthetists in rural Canada continues to decline.^{4,5} Canadian residency positions in anesthesia have decreased by at least 15% since 1986 despite an increased demand for their services.⁶

A Canadian Journal of Rural Medicine News summary⁷ of a 1999 Conference on Advanced Skills in Rural Canada hosted by the Society of Rural Physicians of Canada (SRPC) and the College of Family Physicians of Canada reported support for the idea that family practitioners with advanced skills training in anesthesia (GPAs) are a solution to the escalating shortage of RCPSC anesthetists in underserved areas. However, the News article also stated⁷ that "generalists should ... perform an advanced skill equally as well as a specialist." At present, Canada does not have a certification exam or a regulatory body to evaluate the competency of GPAs before they begin practising anesthesia. The last published practice audit of Ontario GPAs was conducted 27 years ago and it revealed considerable shortcomings in Ontario GPAs with regard to their anesthesia skills and knowledge.⁸ The results of that audit are outdated and no longer reflect the proficiency of present-day GPAs. To ensure that quality health care is being delivered we must periodically re-examine the activities and capabilities of Ontario GPAs.

Advanced skills residency programs potentially can train rural GPs to deliver certain anesthesia services with the same level of competence that is expected of RCPSC-trained specialists. The primary goal of

this survey, therefore, was to examine the adequacy of Ontario residency training programs for GPAs. Specific strengths and weaknesses of Ontario advanced skills training programs were explored with the aim of facilitating the delivery of improved anesthesia care to rural populations.

Secondary areas of investigation in this survey included demographic information on GPAs, the perceived need for a certification exam, reasons why GPAs quit practising anesthesia, reasons why GPAs decided to undergo RCPSC training in anesthesia, and the degree to which PGY3 training in anesthesia helped GPs to prepare for non-anesthesia related aspects of their practices. The survey also identified the activities and needs of GPAs for continuing medical education (see Part II, [page 271](#)).⁹

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Methods

A list of all physicians who had completed their 3rd-year of postgraduate (PGY3) training in advanced anesthesia skills from 1995 to 2000 was requested from the following Ontario universities: University of Western Ontario in London, University of Toronto, McMaster University in Hamilton, Health Sciences North at Lakehead University in Thunder Bay, University of Ottawa, and Queen's University in Kingston. Addresses for the identified physicians initially were obtained using the software database, MDSelect: Canadian Medical Directory on CD-ROM,¹⁰ telephone directories and personal communications. A second mail-out was conducted after attempting telephone contact with all nonresponders. All returned surveys were confidential and coded for mail tracking only.

The survey was 7 pages in length and consisted of 25 questions. Questions regarding demographics and practice activities consisted of fill-in-the-blank and check-the-box formats. Certain questions employed Numeric Rating Scales (NRS) ranging from 1 to 5 with the corresponding anchoring descriptors "not," "mild," "moderate," "very" and "extremely." The factors listed under these NRS questions were validated based on pre-existing studies of this nature^{8,11,12} and on an unpublished survey by Dr. Neil Donen (Dr. Neil Donen, Director, Continuing Medical Education, Capital Health Region, Victoria: personal communication, 1999). Questions were validated by a research group in the Family Medicine North: NWO (Northwestern Ontario) Family Medicine Residency Program. Statistical analysis was performed using the SPSS/PC+ computer software package. The analysis of variance (ANOVA) technique was used to analyze the relationship between the university where PGY3 training took place and the degree of preparation for practice.

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Results

The universities provided names of 41 physicians who had undergone additional skills training in anesthesia. Current addresses could not be found for 7 physicians. There were 3 whose addresses were confirmed over the telephone but who did not respond to the survey: at least 2 of these were still practising as GPAs in Canada. Thirty-one of the 41 physicians responded to the survey.

Demographic data on the 31 respondents is listed in [Table 1](#). As in all tables and figures, where n equals less than the total subpopulation analyzed, respondents have neglected to answer the specific question. Of those who continued to practise as GPAs in Canada, 85% remained in Ontario. Only 1 respondent had undergone RCPSC training and indicated that "increased skill level" and "increased knowledge level" were extremely important advantages of doing so.

The relative importance of various factors influencing 3 respondents to quit practising anesthesia is depicted in [Figure 1](#). As in all the figures, the vertical lines represent one standard deviation from the mean. Each physician in this group ranked "location" (of practice) as an extremely important factor in his or her decision to not practise anesthesia.

Demographic information for respondents still performing anesthesia as a GPA in Canada is shown in [Table 2](#). The mean number of anesthesiologists and operating rooms at each centre was 4 and 3, respectively. On average, respondents were on call 2 nights per week.

[Figure 2](#) depicts the distribution of the 27 GPAs practising in Canada by the size of their community. The majority (44%) serviced populations in the category of 20 000 to 50 000 people.

[Figure 3](#) indicates how the GPAs divided their hours at work. The mean number of hours per week spent on anesthesia, emergency and family medicine were 13–16, 13–16 and 5–8, respectively.

[Table 3](#) reflects the opinions of all respondents to the institution of a certification exam following the PGY3 year and to the ideal length of a PGY3 training program. Twelve months was the optimal duration of such a program according to 90% of respondents. Eighty-four percent indicated there should be a certification exam for GPAs. Twenty-two percent commented that a certification exam would lend credibility, recognition or validity to GPAs, and 10% believed an exam would demonstrate competency. Thirteen percent thought exam questions should be of a practical nature and applicable to GPAs, and 6% believe the exam should be standardized across the country. Sixty-five percent did not comment.

[Figure 4](#) and [Figure 5](#) indicate the degree to which all respondents felt prepared for various aspects of general practice and for specific aspects of anesthesia practice. The additional year of anesthesia training left GPAs feeling "very" well prepared to "extremely" well prepared for practising both anesthesia and emergency medicine. Respondents' mean rankings for degree of preparedness for general surgical, gynecological surgical and orthopedic cases were also between "very" and "extremely" well prepared.

The mean response for ability to perform administrative duties related to anesthesia was "not" well prepared.

[Figure 6](#) depicts the percentage of the 31 respondents who commented on an increased need for PGY3 training in specific areas of anesthesia. Twenty-six percent believed further training in pediatric anesthesia would be beneficial, and 23% indicated that residency programs should include more training related to intensive care and/or ventilator management. Only one respondent stated that the PGY3 program required "no extra" changes.

While 90% of respondents thought that residency training should remain at 12 months, the most common requests for further training related to pediatrics and neonatal medicine (39%), intensive care unit (ICU) and ventilation (23%), regional blocks (16%), chronic pain (13%), administration duties (13%), obstetrics (13%), trauma (10%) and central line placement (6%). Reflecting these comments, GPAs felt no more than "moderately" prepared for administration, neonatal ICU, chronic pain and regional blocks.

The opinions of all respondents who gave a general comment (61%) were tabulated. Sixteen percent indicated that an association of GPAs should be formed and they cited the following reasons: a need to clarify the role of GPAs, to suggest guidelines on what cases to undertake, to provide continuing medical education and practice audits and to bring recognition to GPAs.

There were no statistically significant differences between subgroups when stratified according to either the university where training took place or the size of the practice population.

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Discussion

The results of the study suggest that PGY3 training programs in anesthesia are effective in supplying small Ontario communities with competent anesthesia care. Generally, respondents perceived themselves as "very" well to "extremely" well prepared for their anesthesia duties. Eighty-three percent of the respondents were still practising as GPAs, 85% of whom remained in Ontario. Only 11% of the practising GPAs worked in communities with populations larger than 50 000. The attrition rate of GPAs trained in Ontario compares favourably with that of Manitoba-trained GPAs, 44% of whom had quit practising anesthesia after 5 years.¹³

The training also provided GPs with additional skills that left them feeling "very" well to "extremely" well prepared for working in an emergency department, thereby further improving delivery of care to their communities. Most GPAs divided their time between anesthesia and emergency medicine, with a mean of only 5–9 h/wk spent on family medicine. It should be considered whether additional skills

training drains primary care resources in small communities and whether some such communities could actually support fully trained specialists in anesthesia and emergency medicine.

Those who quit practising anesthesia did so primarily due to preferences of practice location rather than concern over their abilities.

The population size of this study was kept small in order to sample only recent graduates of the Ontario residency programs (thereby reflecting current curricula). We should be cautious about drawing conclusions from a small data pool. In particular, the study lacks the statistical power to detect any effect of either practice size or location of residency training on issues such as practice activities and degree of preparedness for practice.

Of note, we did not hear from 10 of the 41 recent graduates. Two of these were confirmed to be practising anesthesia in Canada as GPs. The status of the other 8 remains unknown. Those who had a negative experience with anesthesia as a GP may have been more reluctant to disclose their opinions. On the other hand, those who had concerns regarding GPAs and their training might have had the most incentive to complete the survey.

GPs identified general, gynecological, orthopedic and obstetrical surgeries as areas in which they felt "very" to "extremely" well prepared. Whether PGY3 training in these strong domains should be sacrificed for increased training in the weaker domains is not clear from this study. It would seem, however, that pediatric and neonatal training should be increased, perhaps at the expense of the more straightforward anesthetic cases in gynecology. Further exposure to ICUs and high-risk cases might provide experience with ventilation and central lines. Since over 10% of respondents indicated a need for more regional blocks and obstetrical anesthesia training, instruction in orthopedic and obstetrical anesthesia should probably not be decreased. The educational coordinators of Ontario PGY3 advanced skills in anesthesia training programs are encouraged to consider these findings in the refinement of their curricula.

Eighty-four percent of respondents felt there should be a certification exam following the completion of additional skills training. Such a majority in favour of instituting a certification exam should not be ignored. GPs would feel more secure with some validation of their roles in the health care system and an assurance that their skills meet an acceptable standard of care.

When asked to produce general comments 16% of all respondents (26% of those who left a comment) wanted the formation of an association to represent GPs. This study identifies some priorities that should be considered for such an association:

- to validate, define and regulate the roles of GPs in the health care system;
- to review curriculum development for additional skills training;
- to set a standardized, practical and relevant certification exam for residents completing their advanced skills training; and

- to assist GPAs in administering their hospital anesthesia departments effectively.

We hope that the results of this study will encourage the SRPC, the RCPSC and the Canadian Anesthesiologists' Society to continue their combined efforts toward the establishment of a representative body for Canadian general practitioner anesthetists.

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References

1. Rourke J. Small hospital medical services in Ontario. Part 4: Anesthesia services. Can Fam Physician 1991;37:1889-92.
2. Iglesias S, Strachan J, Ko G, Jones LC. [Advanced skills by Canada's rural physicians](#). Can J Rural Med 1999;4(4):227-31.
3. Rourke JTB. Trends in small hospital obstetric services in Ontario. Can Fam Physician 1998;44:2117-24.
4. Donen N, White IW, Snidal L, Sanmartin CA. Canadian anaesthesia physician resource planning — Is it possible? Can J Anaesth 1995;42(4):348-57.
5. Yang H, Byrick R, Donen N. Analysis of anesthesia physician resources: projected Ontario deficit

- in 2005. Can J Anaesth 2000;47(2):179-84.
6. Donen N, King F, Reid D, Blackstock D. Canadian anesthesia physician resources: 1996 and beyond. Can J Anaesth 1999;46(10):962-9.
 7. [Advanced skills in rural Canada](#). Can J Rural Med 1999;4(3):160-3.
 8. Vandewater SL, Kraus AS. Family physician anesthetists: continuing education, observations, evaluation. CMAJ 1973;109(12):1228-31.
 9. Sansom R, Doig G, Morris K. [A survey of recently trained general practitioner anesthetists in Ontario. Part II: Does continuing medical education adequately meet their needs?](#) Can J Rural Med 2001;6(4):271-4.
 10. MD Select: Canadian Medical Directory on CD-ROM. Don Mills (ON): Southam Information Products, Ltd. 2000.
 11. Craig M, Nichols A, Price D. Education for general practitioners proposing to administer anaesthesia in rural general practice. Anaesth Intensive Care 1993;21(4):432-41.
 12. Watts RW, Bassham M. Training, skills and approach to potentially difficult anaesthesia in general practitioner anaesthetists. Anaesth Intensive Care 1994;22(6):706-9.
 13. Donen N. Family practice anesthesia – A follow-up. Can J Anaesth 1995;42(5)(Part II):A49B.

