

# Emergency Medicine Skills

*Are primary care physicians adequately prepared?*

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## SUMMARY

Family physicians who completed postgraduate training at one center were asked to identify important patient management and procedural skills in emergency medicine and to indicate their perceived competence, both at the completion of training and in their current practice setting. There were several important skills in which many respondents did not feel competent, suggesting a need to reevaluate educational opportunities.

## RÉSUMÉ

On a demandé à des médecins de famille ayant complété leur formation postdoctorale dans un centre d'identifier certaines habiletés importantes en termes de prise en charge du patient et de techniques dans le domaine de la médecine d'urgence, et d'indiquer quelle perception ils avaient de leur compétence, au terme de leur formation et dans leur contexte actuel de pratique. L'enquête a révélé que les répondants se sentaient incompetents au niveau de plusieurs habiletés importantes, suggérant le besoin de réévaluer les expériences éducatives.

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FAMILY PHYSICIANS PROVIDE A large proportion of care in Canadian emergency departments. They must initially manage all forms of sudden illness and injury, in addition to more frequent and less serious occurrences that fall reasonably into the realm of primary care.

All Canadian postgraduate training programs in family medicine require formal clinical rotations in emergency medicine, normally in a closely supervised tertiary care facility. The rotation aims to provide not only a body of core knowledge but exposure to and opportunities to perform specific relevant patient management and procedural skills. Yet, even with carefully identified training objectives,<sup>1</sup> educational opportunities rely heavily on opportunistic clinical exposure and chance patient encounters.

In any form of psychomotor skill training, educational strategies must ensure not only the acquisition of a particular skill, but also competence and retention of that skill over time. In recent years, national licensing bodies and specialty organizations have identified sets of skills and competencies required for certification.<sup>2,3</sup>

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## PURPOSE AND QUESTIONS

We endeavored to develop a mechanism to evaluate the overall effectiveness of postgraduate emergency medicine training in providing the specific management and procedural skills that physicians feel they need. This information can be used to modify the format or specific opportunities offered to postgraduate physicians in our family medicine program during clinical emergency medicine rotations.

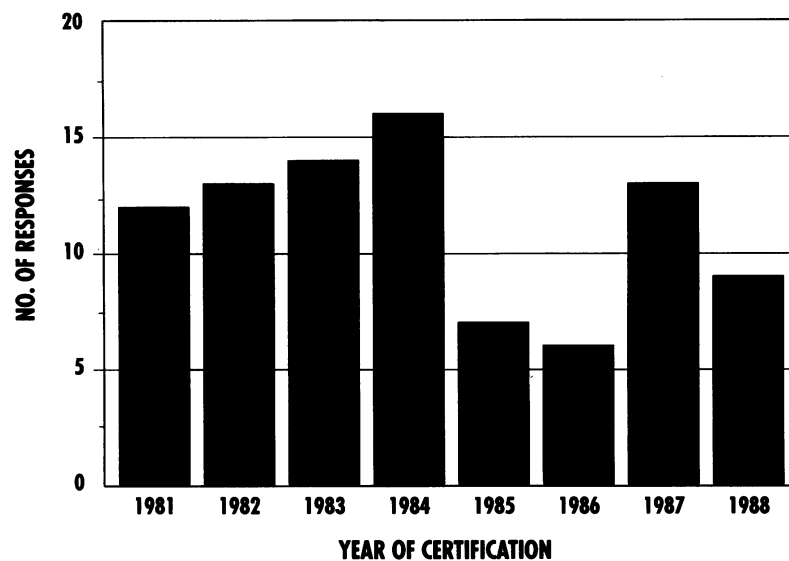
The study sought to answer three questions:

1. Which management and procedural skills pertinent to acute care were considered important in family practice?
2. What was the perceived level of competence in identified skills at the completion of postgraduate training?
3. What was the current level of performance for identified skills in the practice setting?

## METHODS

The study polled all 132 physicians who completed postgraduate training in the family medicine program at Queen's University (Kingston, Ont) from 1981 to 1988. The questionnaire asked about the year training was completed, additional postgraduate training, current practice profile, continuing education preferences, and how frequently seriously or critically ill patients were managed.

Figure 1. RESPONDENTS BY CERTIFICATION YEAR



A list of 26 management and procedural skills pertinent to emergency medicine was provided.<sup>4</sup> For each identified skill, the respondent was asked agree or disagree with the following statements.

1. "This skill is important to clinical practice in a primary care setting."
2. "At the completion of my postgraduate training, I was comfortable with my ability to exercise this skill."
3. "In my current practice setting, I am comfortable with my ability to exercise this skill."

We used a ranking scale of 1 to 5, 1 indicating strong agreement and 5 indicating strong disagreement. We identified as "important in their current practice setting" skills for which at least 70% of the respondents had given a response of 1 (strongly agree) or 2 (agree) on question 1. For skills so identified, we considered that at least 70% positive responses (strongly agree or agree) to questions 2 and 3 indicated overall comfort with execution of that skill.

The questionnaire was field tested with a random sample of 10 physicians from the identified group. Because we made no significant changes to the questionnaire after testing, the responses from the test group were included with responses from the other 122 physicians polled.

A single mailing was carried out, with a personal letter from one of the authors explaining the nature of the study.

## RESULTS

### Response rate

A total of 90 questionnaires were completed and returned within 8 weeks, for a return rate of 68% (Figure 1). There were 46 responses from physicians completing training in the years 1981 to 1984 and 44 responses from physicians completing their training in the years 1985 to 1988.

### Respondent characteristics

Almost all respondents (88 of 90) were practising exclusively in a family medicine setting. Eighty percent (72/90) were in centers with a population base of less than 150 000; 46% (41/90) in a setting with a population of less than 50 000.

Almost all respondents (87/90) were spending at least 20 hours each week in clinical practice. They spent 71% of their time in the office; urgent care and emergency department responsibilities accounted for 10% of their practice.

Of those physicians working in areas with populations of less than 150 000, 64% (46/72) indicated that they were required

to manage critically ill patients at least once a year; 43% of this group (31/72) managed critically ill patients at least monthly.

### **Management and procedural skills**

Table 1 indicates the 11 skill areas identified by the total response group as "important." In the group working in an area with a population of less than 150 000 (72/90), endotracheal intubation and plastic surgical procedures were also identified as important.

By contrast, the five least important skills as indicated by the collective response (<50% strongly agree or agree) were surgical airway, anesthetic preparation for intubation, venous cutdown, central venous access, and intravenous nerve blocks.

### **Skill competence**

Of the 11 skills deemed important by the whole group, in only six did the respondents feel comfortable with their performance (>70% agreement) when they completed their residency training (Table 2). They still felt competent at these skills in their current practice setting. In general, people who felt competent in these skill areas at completion of residency training were the ones who felt competent at them in practice.

There were five "important" skills in which less than 70% of the group felt comfortable by the completion of their postgraduate training: advanced cardiac life support principles, pediatric resuscitation, casting techniques, x-ray interpretation, and patient transport principles. With the exception of patient transport principles, these skills had apparently further eroded. For example, 38% of the total group (34/90) felt competent in pediatric resuscitation at the completion of their training; only 32% (29/90) indicated that they were still comfortable with their performance of this skill in their current practice setting, suggesting that clinical practice does not provide sufficient opportunity for skill retention.

In the large group of physicians practising in centers of less than 150 000 who considered endotracheal intubation and plastic surgical procedures important, only 60% (54/90) and 50% (45/90), respectively, felt comfortable with their performance.

## **DISCUSSION**

Our findings support the established belief that most family physicians will manage patients seeking acute care, often in the emergency department.<sup>5</sup> Family physicians are sometimes required to resuscitate seriously ill or injured patients, often requiring the use of specific management or procedural skills that they are expected to have acquired in undergraduate or postgraduate training.

There is consensus that, before graduation, all medical students must be competent in skills considered essential to manage common emergencies.<sup>6,7</sup> Until recently, however, undergraduate educational objectives have concentrated on assessing the knowledge base of individual students. Only recently has attention been drawn to an apparent lack of coordination between undergraduate and early postgraduate training, which has led to deficiencies in exposure to common problems and technical procedures.<sup>8</sup>

Postgraduate program directors have identified a fairly consistent set of management and procedural skills relating to acute care.<sup>9,10</sup> Studies have also shown that physicians do not master many of these skills well enough to feel comfortable once in practice. It has also been shown that those graduates who receive adequate supervision during training are most likely to continue performing procedures in their practice.

The profile of our respondents confirmed that most graduates from our family medicine program will ultimately practise in smaller centers, where primary care physicians provide the bulk of emergency department coverage. In fact, almost half the group said they manage critically ill patients at least once a month on average. It is thus essential that they be adequately prepared. A doctor's skill in ACLS principles, peripheral venous access, patient transport principles, pediatric resuscitation, or x-ray interpretation could strongly affect the final outcome for a seriously ill patient. In smaller centers, where subspecialist backup is often unavailable, primary care physicians take on more care; it is not surprising that respondents in smaller centers added endotracheal intubation to the list.

**Table 1. IMPORTANT MANAGEMENT AND PROCEDURAL SKILLS  
(MORE THAN 70% AGREEMENT)**

IDENTIFIED SKILL	PERCENTAGE AGREEMENT	NO./SAMPLE
Suturing techniques	90	81/90
Superficial infections	89	80/90
Wound exploration and debridement	88	79/90
Radiographic investigations	87	78/90
X-ray interpretation	84	76/90
Analgesia	81	73/90
Peripheral venous access	78	70/90
Casting techniques	74	67/90
Pediatric resuscitation	74	67/90
ACLS principles	73	66/90
Patient transport principles	71	64/90
Endotracheal intubation <sup>a</sup>	72	52/72
Plastic surgical procedures <sup>a</sup>	71	51/72

<sup>a</sup>Additional important skills identified by subgroup in centers with population base <150 000.

It is a matter for concern that a large percentage of physicians, many of whom are required to manage and resuscitate seriously ill patients, did not feel comfortable with several essential emergency skills. They implied that they lacked opportunities through their own practice setting to acquire competence in some skills or, presumably, through ongoing CME activities.

The interpretation of a survey like ours must be limited to analysis of generalizable trends. While our response group included program graduates over an 8-year period, the relatively small sample size allows only a descriptive statement of findings. Moreover, our group were relatively homogeneous because they all trained at the same medical center. Therefore, it would be inappropriate to generalize findings to other postgraduate centers across Canada. Research based on questionnaire analysis can

be enhanced by accompanying objective data. A logical next step to this study would be an attempt to evaluate actual skills in these areas objectively, both in the late postgraduate phase of training and at designated intervals following entry into practice.

The emergency department setting will continue to provide valuable clinical experience for postgraduate trainees in family medicine programs. Emergency department physicians readily accept the responsibility of ensuring some exposure to the unique skills and circumstances of the acute care setting. But, in spite of best efforts, opportunities to acquire and maintain these skills are currently less than optimal and entirely too dependent on chance patient encounters. This survey supports a reevaluation of the educational opportunities in emergency medicine offered to primary care physicians. ■

**Table 2. PERCEIVED COMPETENCE IN IMPORTANT SKILLS  
(AGREEMENT IN TOTAL RESPONSE GROUP)**

SKILL	ADEQUATE TRAINING		COMPETENCE IN PRACTICE SETTING	
	%	NO./SAMPLE	%	NO./SAMPLE
<b>MORE THAN 70% AGREEMENT</b>				
Analgesia	72	65/90	77	69/90
Peripheral venous access	83	75/90	79	71/90
Radiographic investigations	77	69/90	76	68/90
Superficial infections	81	73/90	87	78/90
Suturing techniques	83	75/90	82	74/90
Wound exploration and debridement	78	70/90	82	74/90
<b>LESS THAN 70% AGREEMENT</b>				
ACLS principles	66	59/90	46	41/90
Casting techniques	67	60/90	58	52/90
Patient transport principles	46	41/90	56	50/90
Pediatric resuscitation	38	34/90	32	29/90
X-ray interpretation	63	57/90	59	53/90

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