

Linking General Internal Medicine Residency Training to Human Resource Needs and Roles in a Changing Health Landscape

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Abstract

Recently, there have been frequent calls for more generalists in the health care system, including General Internal Medicine (GIM). At the same time, the Royal College of Physicians and Surgeons has published a report on unemployed and under-employed specialists throughout Canada. GIM residency programs aim to ensure all graduates have future employment positions that will benefit Canadians. However, there is currently little linkage between the educational and healthcare systems in terms of utilizing future health care needs to inform postgraduate training. There is a lack of consensus on how to plan future health care workforce needs. There is, however, consensus that this is important for both the population and for future physicians. Predictions must also take into account context, such as Saskatchewan's significantly rural and aboriginal population. Difficulties in health care workforce planning include economic factors, differences in physician scope of practice, and regional variations in scope of practice. To fully prepare graduates for both core GIM competencies and competencies tailored to their future practice, it is necessary for us to understand the range of scope of GIM practice in Saskatchewan. It is crucial to understand both current and anticipated perceived scopes of practice and practice opportunities for General Internists in order to plan physician resource needs and the required educational resources.

Keywords: general internal medicine, human health resources, medical education

Introduction

In the Royal College of Physicians and Surgeons' objectives of residency training document, General Internal Medicine (GIM) is defined as "a subspecialty of Internal Medicine which embraces the values of generalism, is aligned with

population needs, and promotes the practitioner's ability to adapt their practice profile when a population's needs change" (1). If this statement holds true, the end result of the ideal residency training program is the production of adaptable and competent physicians that are ready to practice immediately upon completion of a GIM residency. However, in order to train GIM residents for their future

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practice realities, we first need a reliable method of predicting the demand for GIM specialists and identifying the current and future scopes of GIM practice in different community settings in order to match training to population need.

This discussion paper was completed as background information for our mixed methods research study on the GIM health human resource needs in Saskatchewan and the potential to link needs with GIM residency training. This paper describes the role of workforce prediction in residency program development providing justification for our study. The GIM training program at the University of Saskatchewan is a newly accredited program with the Royal College of Physicians and Surgeons of Canada. It is a two year sub-specialty program which follows three years of internal medicine training. The residency program aims to be effective in ensuring that all graduates have secure job positions in the future that are an asset to the province. It is apparent, however, that it is not clear what the provincial human resource needs are for General Internal Medicine nor what scope of practice each graduate would need. To initiate a pilot project to identify human resource needs, we first identified themes regarding needs-based residency training to build the foundation for our own investigations into scope of practice and population needs.

Health services in the province of Saskatchewan are provided by thirteen governing bodies, including twelve regional health authorities and the Athabasca Health Authority, which provides service to the Athabasca basin (2). Currently, the presence of GIM is variable across the province. Training of GIM in Saskatchewan takes place at a number of distributed sites in addition to Saskatoon. Distributed sites include Regina, Prince Albert, and Swift Current (3). Saskatchewan has a large rural, remote and aboriginal population (4). Whether the current distribution of GIM employment and training is sufficient to meet population needs has yet to be determined.

Predicting the roles and numbers of physicians needed in the workforce is a very difficult task, as reflected by the scarcity of data providing comprehensive predictions about the future healthcare workforce. Despite the lack of data, there is a recurring demand for robust predictive methods in health human resources to aid in training and hiring of GIM and other specialties. Keeping in mind that health professionals currently being trained will still be practicing in four to five years, predictions producing an inappropriate distribution of specialties and scope of practice can be costly if wrong and will have a lasting impact on service delivery for years to come (5). Despite its challenges, the ability to correctly predict the needs of the health care system has important benefits. Knowledge of which professions are needed to serve certain roles in certain locations allows for both improved career planning for medical students and more robust planning of health

systems. Planning could potentially ensure that the right provider is present for the right patient at the right time.

One recurrent theme in the literature is the need for more General Internist care to meet the increasingly complicated health needs of Canadians (6, 7). However, when the question changes from "Are General Internists needed?" to "How many General Internists are needed?" there does not seem to be a satisfying answer. Three categories of challenges appear to complicate workforce planning predictions for General Internal Medicine: 1) the unpredictable and fluid nature of the healthcare system, 2) the variation in practice patterns between GIM in the same health region, and 3) the variation in health needs and health professional distribution between health regions. The benefits and the challenges of health human resource planning will both be described in further detail.

Why Prediction is Necessary: The Benefits

Incorporating Practice Needs into Residency Training

Medical education throughout the country is becoming increasingly competence based at all stages. Competency based medical education (CBME) is a type of outcome based education where the focus of curriculum development is on the end product of training instead of on course length or instructional processes (8). A competency based curriculum values the acquisition of observable skills as the ultimate measure of resident competence. To aid in developing CBME training programs, Series II of the Draft CanMEDS 2015 Physician Competency Framework contains an outline of milestones to guide medical training at each stage of education, from undergraduate medical education to residency and into professional practice (9). Milestones define which abilities are expected of a physician at particular points in training. These milestones are broad, with the intent that they be tailored to the specific discipline and stage of training. Therefore, despite the complexity of defining the generalist scope of practice, the unique competencies used in GIM daily practice must be identified in order to include competency based training in the GIM program.

In this way, residency training takes a developmental approach to training residents. Rather than basing training on rigid timeframes, milestones recognize points at which a resident is able to handle a particular task. Training is therefore based on outcomes, which can be matched to the skills needed to be a competent physician in the resident's future practice location (8). The concept of milestones is made possible by the use of Entrustable Professional Activities (EPAs). An EPA refers to a task that is entrusted

to a resident by an attending physician. Each EPA requires a particular set of competencies in order to complete. Therefore, the constituent competencies can be inferred by observing an EPA (10).

Identifying the range of a general internal medicine specialist in the context of a physician's practice location is a far more useful measure of a community's service needs compared to the number of generalists previously employed in a region. The generalist scope should be inductively described by analyzing what General Internists actually do in practice rather than deductively from the roles filled by other subspecialties. Once these roles are identified, milestones and EPAs can be adapted to identify the progression of skills that residents need to attain competence. Curriculum design must be conducted in reverse order, beginning with the identification of learning outcomes and skills, and working backwards through the milestones and onto instructional methods (8).

Benefits of Outcome Based Training for Students

In light of recent physician unemployment reports, medical students across Canada are calling out for comprehensive human health resource plans to aid in career planning (11). Residents are hindered by a lack of career counselling as well as trouble discovering jobs that are available. It may aid in the process of matching personal interest with jobs in communities that have a need for that interest if residents were better able to access job postings early in their training. The ability to reliably predict whether jobs are available in a student's chosen career path may also make a difference between remaining in a general field like GIM or continuing to sub-specialize. In addition, better identification of roles filled by other supporting health professionals can remove the service burden from residents. This may reduce the overproduction of physicians in certain specialties and sub-specialties, while preventing an impact on patient care delivery through the adjustment of residency seats (11).

Recognition of the Unique Health Needs of Aboriginal Communities

Health Human Resources has also been of particular interest to Aboriginal communities as of late, since Aboriginal communities have unique health needs compared to the rest of the population. Overall, Aboriginal health outcomes continue to lag behind the overall health of Canadians, with higher rates of diabetes, hypertension, cardiovascular disease, and obesity compared to non-Aboriginal Canadians (12). Beginning in 2005, the First Nations and Inuit Health Branch of Saskatchewan created the Aboriginal Health Human Resources Initiative (AHHRI)

in response to these health disparities. The goal of the AHHRI "is to achieve and maintain an adequate supply of qualified First Nations, Inuit, and Métis health care providers, appropriately educated and supported to ensure culturally competent and safe health care, as well as facilitate the adaptation of health care educational curricula to improve the cultural competence of graduates providing health care services" (13). Since 15.6% of Saskatchewan's population self-identified as Aboriginal in the 2011 National Household Survey (14), the province has a vested interest in ensuring that health professionals have the proper skills and training to meet the unique needs of the Aboriginal population. Ensuring that residency training is responsive to community needs, including the needs of Aboriginal communities, is necessary and must be undertaken in a collaborative and culturally-minded manner.

Workforce Planning: The Challenges

The Economics of Prediction

There are many features of the healthcare system that are inherently difficult to predict, namely those involving interactions between human decision-making and economic trends. The ability of a health region to support a particular specialty or procedure depends on the amount of resources available to fund hospital beds, operating room space, and specialized equipment, which may vary from year to year as the economy fluctuates (11). The economy also impacts retirement of physicians. For example, economic downturn may cause physicians to postpone their retirement, creating a deceptively saturated workforce (11). Even after physicians express the intent to retire, their retirement often occurs as a trailing off of service with no predictable end date (15). Predicting whether or not a medical resident will stay in the province in which he or she trained, or even remain in the same specialty, creates the added challenge of predicting when and where to make an accurate count of the future workforce (16).

Practice Pattern Variability

A number of different methods have been used to attempt to match physician supply to physician need, with varied success. A common practice is to identify a supply-based ratio to describe physician need in terms of the number of physicians practicing per resident population in a particular catchment area (17). This is problematic because there is not a single physician-to-population ratio appropriate to meet the needs of all communities served. Physicians vary in terms of the number of hours they work, their practice intensity during these hours, and their practice patterns.

Another predictive method involves expressing physicians in full time equivalents. While this method does account for some practice variation, it does not capture practice patterns of physicians that are not fee-for-service, nor does it capture the effectiveness of care provided. Tracking healthcare utilization is another predictive method, but describing the effectiveness of the care being provided is still a challenge (18). Needs-based planning is a better method to ensure the effectiveness of service delivery, allowing for practice variability to be matched to health needs. However, these models still need to be optimized.

Regional Differences in Scope of Practice

The final challenge in predicting future physician supply and demand lies in the regional health differences that exist both provincially and nationally. As has been noted by the College of Physicians and Surgeons of Ontario, "A physician's scope of practice is determined by the patients the physician cares for, the procedures performed, the treatments provided, and the practice environment." Based on this definition, the scope of practice will change among General Internists depending on regional variations in community health needs. The scope of practice also must be able to adapt to changes that arise in the health needs of the populations they serve (4). For example, women are entering their first pregnancies at more advanced ages than were seen in the past due to social factors and the advancement of reproductive medical technologies. GIM had to adapt to better serve this demographic, and as a result, many General Internists now also practice Obstetrical Medicine as a specialized area of interest in the GIM field (19).

A physician's scope of practice is also influenced by the availability of support from other specialists and health professionals, as the utilization of interprofessional teams becomes an increasingly common practice throughout the province. As other specialties become trained to provide services that physicians provided in the past, it creates a reduced need for physicians to fill these roles (6). There may be growing pains as a new health care provider takes over a role when these roles overlap in the continuum of health care (20). This transition must be monitored to ensure that communication is effective and that each profession knows what is expected of him or her so that patient care is not compromised (21).

With regard to the future roles of GIM, the healthcare model in Saskatchewan is currently being redesigned to have a greater emphasis on primary care and interprofessional collaboration. Since GIM is a general specialty with a large role in preventative and continuous care, there may very well be an increased role for GIM in population health once this new model is in place (22).

Many other professions contribute to the primary care team; therefore planning must be done in a system-wide manner instead of on a micro-scale, and conducted separately for each profession (21). Fragmented policy production is problematic because system-wide strategies are needed to ensure that delivery of care is effective. As Framework 15 of the National Health Service (NHS) Constitution suggests, "Better patient care will only be delivered by co-operation and partnership across the system, because workforce strategy is intimately connected with decisions about service configuration, models of care, quality and cost" (5). In short, defining scope of practice for GIM is not a simple task, and it must be examined by combining micro-level projects on the macro, system-wide scale, producing a range of scope of practice.

Conclusion

Creating a residency training program that is competency based is a multi-step process that must be carried out systematically. It is apparent that there are many factors and influences on workforce planning which will impact educational planning. The range of scope of GIM practice in Saskatchewan must be identified, both in terms of what roles all GIM share, as well as how these roles differ in different practice contexts. Accurate needs-based predictive models that take the entire health system into account need to be developed and updated in order to identify the correct services for the correct locations. In order to make competency based medical education sustainable, there must be real-time methods of communicating changing needs to the GIM residency program so that training can be proactive instead of reactive.

It is necessary for us to understand the range of scope of GIM practice in Saskatchewan to fully prepare graduates for both core GIM competencies and competencies tailored to their future. It is crucial to understand both current and anticipated perceived scopes of practice and practice opportunities for General Internists in order to plan physician resource needs and the required educational resources.

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