Balancing primary versus specialty care

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INTRODUCTION

Despite consensus in the USA and abroad that primary care is a critical component of any health care system, there is a considerable imbalance between primary and specialty care in the USA. The proportion of specialists is over 70% of all patient care physicians, whereas in other industrialized countries 25 to 50% of physicians are specialists[1]. The current specialty physician supply in the USA is more than sufficient to meet the demand for treatments that all physicians agree are necessary, regardless of specialty[2]. Based on staffing patterns in classic Health Maintenance Organizations (HMOs), research indicates there are about 3.1 times more pathologists, 2.5 times more neurosurgeons, 2.4 times more general surgeons, 2.0 times more cardiologists and neurologists, 1.9 times more gastroenterologists, 1.8 times more ophthalmologists, and 1.5 times more radiologists in the nation than would be needed[3]. Furthermore, the interest of medical students in primary care careers dropped from 36% in 1982 to 14% in 1992[4,5].

This review paper examines factors associated with the imbalance between primary and specialty care, the consequences of such an imbalance, and suggests strategies to balance primary and specialty care. Moreover, ultimately to improve the health status of populations, nations should strive to balance medical, behavioural, and social interventions. To provide a common conceptual base, I will first draw out the major distinctions between primary and specialty care.

DEFINING PRIMARY AND SPECIALTY CARE

Primary care may be distinguished from specialty care by the time, focus, and scope of the services provided to the patients. Primary care is first contact care or the portal to the health care system[6], whereas specialty care, if needed, generally follows primary care. In a managed care environment where financing and provision of services are integrated, primary care providers serve as 'gatekeepers', an important role in controlling cost, utilization, and the rational allocation of resources. Primary care is also longitudinal[7]. Primary care providers follow through the course of treatment and coordinate various activities including initial diagnosis, treatment, referral, consultation, monitoring, and follow-up. This coordinating role is especially important in the provision of continuing care for chronic conditions.

Primary care focuses on the person as a whole whereas specialty care centres on diseases or organ systems (e.g., infectious disease specialist, cardiologist)[8]. Primary care providers see patients at their initial interface with the health care system. Patients present with a variety of illnesses and concerns that represent early stages of disease that are not easily classified by organ system or diagnostic label. Often patients have multiple problems, and the provision of specialty care to one problem may make another worse. Primary care thus provides an integrating function, balancing the multiple requirements of the patient's problem(s) and referring patients to appropriate specialty care when needed.

Primary care is comprehensive in scope and includes health promotion, disease prevention, health maintenance, counselling, patient education, diagnosis and treatment of acute and chronic illnesses[6]. Primary care providers serve the role of patient advisor, advocate, as well as system 'gatekeeper'[9]. Specialty care, in contrast, tends to be limited to illness episodes, the organ system, or disease process involved. The difference in scope is also reflected in how primary and specialty care providers are trained. Primary care students spend a significant amount of time in ambulatory settings becoming familiar with a variety of patients' conditions and problems. The average amount of time that USA medical students spend in the outpatient setting during the required clerkships is 90% in family practice, 35% in paediatrics, 26% in obstetrics and gynaecology, 20% in internal medicine, and 13% in surgery[10]. Students in medical subspecialties spend significant time in inpatient setting, exposed to the state of art in medical technology.

Primary care providers are predominantly trained in family medicine/general practice, general internal medicine, and general paediatrics[11]. These primary care physicians are often called 'generalists'. Physicians in non-primary care specialties are referred to as specialists. They may be divided into six major functional groups, including: (1) the subspecialties of internal medicine; (2) a broad group of medical specialties; (3) obstetrics and gynaecology; (4) surgery of all types; (5) hospital based radiology, anaesthesiology, and pathology; and (6) psychiatry[12]. Physicians from these specialties as well as nonphysician

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providers (NPPs) may also provide services within the domain of primary care. NPPs, such as nurse practitioners and physician assistants, are becoming a significant force in medicine[13]. There are approximately 100 000 nurse practitioners[14] and 27 000 physician assistants[15] practising in the USA today, half of whom practise primary care[12]. However, the absence of full training to render comprehensive, continuing health services (including preventive measures, early diagnosis, rehabilitation and supportive therapy, as well as the diagnosis and treatment of acute or episodic disease states) requires that these providers work in close consultation with fully trained primary care providers to provide patients with comprehensive health care[6].

EXPLAINING THE IMBALANCE BETWEEN PRIMARY AND SPECIALTY CARE

The principal determinant of need for primary care physicians is the demographics of the general population. The major driving force behind specialists is the development of medical technology. The rapid advances in medical technology continuously expanded the diagnostic and therapeutic options at the disposal of physician specialists. The majority of patients, significantly freed from financial constraints thanks to third-party payment, turned to physicians who could provide them with the most up-to-date, sophisticated treatment. Since population has increased significantly more slowly than technological advancement, there is a growing gap between primary and specialty care in the physician workforce. Between 1950 and 1990, primary care physicians in the USA have been relatively stable, at 75 to 85 per 100 000 population[16]. The number of specialists increased from approximately 60 per 100 000 population in 1950 to over 160 per 100 000 population in 1990. The rapid advance of medical technology expands the demand for specialty services and provides an impetus for specialty development.

In addition to these factors, higher reimbursement for specialists relative to primary care physicians also contributes to the current imbalance. In 1992, the median net income for physicians (after expenses but before taxes) was $148 000[17,18]. A quarter of physicians, most of them primary care physicians, had incomes of $100 000 or less. A quarter, primarily specialists, had incomes of $223 000 or more. Despite a resource-based relative value scale (RBRVS), now implemented for Medicare physician payment, primary care physicians continue to receive lower payments than specialists for comparable work because physician payments are based on historically determined, estimated practice costs as well as total work effort[19,20]. Moreover, many insurance companies would pay for hospital-based complex diagnostic and invasive procedures using high technology, but not for routine preventive visits and consultations. Such a practice not only encourages career choices in subspecialties and the provision of intensive specialty services, but discourages potentially important primary care services as well as deterring patients from early care-seeking behaviour.

Specialists not only earn higher income, they have more predictable work hours, and enjoy higher prestige both among their colleagues and from the public at large[21,22]. Problems that have contributed to the difficulty in recruiting physicians to rural areas include: longer working hours during the day, as well as on call, less financial reward for service, and a greater degree of professional isolation, including less access to the highly technological approaches to diagnosis which are part of the usual medical centre approach to the patient[23]. Among factors affecting medical students' career choice, society's perception of value, intellectual challenge, and lifestyle factors (hours worked, community amenities, for example) were ranked as very important along with financial reward[24–26]. Medical education environment, organized according to specialties and controlled by those who have achieved their leadership positions by demonstrating their ability in narrow scientific or clinic areas, emphasizes technology intensive procedures and tertiary care settings, and may deter the choice by students of primary care specialties[27,28].

CONSEQUENCES OF THE IMBALANCE BETWEEN PRIMARY AND SPECIALTY CARE

One consequence of having too many specialists is that they have been regarded as the major force driving up the volume of intensive, expensive, and invasive medical services and therefore the costs of health care[3,29–35]. The surgery rate grew at twice the rate of the population from 1979 to 1986[36]. Higher surgeon supply increases the demand for initial contacts with surgeons[37]. Many now frequently performed operations, such as coronary artery bypass, hip replacements, carotid endarterectomy, arthroscopy, laparoscopy, and heart and liver transplantation, were little known 30 years ago. Technological developments also include new drugs for treating ulcers, depression, and heart disease, new diagnostic tests based on genetic engineering, new imaging advances like magnetic resonance, the increased application of computers to diagnosis and treatment, new endoscopic equipment and technique, and breakthroughs in the field of micro-, minimal-incision, and laser-assisted surgery[38]. Systematic comparison across industrialized countries shows that the USA has higher rates of coronary surgery, diagnostic imaging, neurosurgery, treatment for end-stage renal disease, and cancer chemotherapy than any other countries[39,40]. As the disease prevalence is too low to support all the specialists,

many of the procedures performed might be unnecessary. The Congressional Subcommittee on Oversight and Investigations estimated that nationwide there were 2.4 million unnecessary operations performed annually, resulting in a cost of $3.9 billion and 11 900 deaths[41,42]. Primary care services are less costly than specialty services because they are less technology-intensive.

In addition to cost, seeking care directly from specialists is often less effective whereas primary care facilities make it possible for people to obtain services before their illness becomes severe[7,43]. While higher levels of primary care manpower are associated with lower overall mortality, and lower death rates due to diseases of the heart and cancer, in contrast, the number of specialty physicians is positively and significantly related to higher mortality rates[44,45]. Primary care physicians have been the major providers of care to minorities, the poor, and people living in underserved areas such as rural towns and inner cities[46–49]. The continual shortage of primary care physicians could exacerbate access to care particularly for the underserved.

STRATEGIES TO BALANCE PRIMARY AND SPECIALTY CARE

To achieve a better balance in the proportion of primary care physicians and specialists, continual efforts are needed to improve the geographic and specialty distribution of physician labour forces. Medical schools should strive to develop students' competencies in skills, values, and attitudes relevant to the practice of primary care. Their curricula should be oriented toward issues of special concern to generalists such as outpatient experience, public health concepts and disease prevention, and cultural, ethnic, and population-specific knowledge, and provide students with opportunities to work with the poor, minorities, uninsured, and practice in rural or underserved areas[28]. Clinical skills must be current and practitioners should be capable of managing the large volume of information and continue life-long learning[50].

The means of financing medical training and physician services should be improved. The current system of graduate medical education payments through Medicare, the largest source of funds for residency programmes (exceeds $3 billion annually) that bases its payments on the number of trainees contributes to specialty-oriented training and creates disincentives for primary care training[3,51,52]. The National Institutes of Health further contributes billions of dollars annually for basic research, much of which is carried out under the auspices of specialty departments[53]. A possible solution is to encourage and provide priority funding for primary care residency slots and primary care related research. Hospitals whose graduates actually went into primary care in underserved areas should be rewarded. Since fee-for-service reimbursement favours the practice of specialists, who employ more technology and perform more procedures than generalists, its predominance will continue to act as a deterrent to the entrance of physicians into primary care. Reimbursement to providers and patients should emphasize preventive, primary care services, and stress the attributes of primary care (i.e., first contact, longitudinal, person focused, comprehensive, and coordinated). Deductibles and co-payments should not apply to primary care services, since reduced access to primary care is associated with higher costs and poorer outcomes[54,55]. Since physicians tend to practice in affluent urban areas, it is necessary differentially to reward providers who practise in 'less desirable' areas or care for socially disadvantaged populations.

A more rational referral system should be established that achieves a reasonable division of work based on the frequency and severity of health problems in the populations[7]. In general, primary care physicians provide preventive services (e.g., health examination, immunization, mammograms, Papanicolaou's smears), treat frequently occurring and less severe problems. Problems that occur less frequently, or require complex diagnostic or therapeutic approaches may be referred to specialists. The medical team that comprise both primary care physicians and specialists should discuss and decide upon the specific division of labour. The formulation of new practice guidelines based on patient-oriented clinical research and their dissemination should contribute to updating and improving the diagnostic and therapeutic practices of practising physicians. Disincentives for non-referred specialist care should be established.

A variety of federal programmes has demonstrated success in increasing the supply of primary care services available to underserved populations, and should be continued. These programmes include the National Health Service Corps (which conditions scholarship support on a commitment to future service in an underserved area), the Migrant and Community Health Programs (designated to provide primary care services to the poor and underserved using federal grants), support of primary care training programmes, and support of Area Health Education Centers. Research indicates physicians' personal characteristics play a significant role in their practice location decision[21,56,57]. Physicians are more likely to be attracted to rural practice if they have a rural background or exposure to rural practice settings in their clinical training. To ensure a sufficient supply of rural physicians, one comprehensive approach would be to assist rural persons in the competition for admission to medical school, foster premedical training in rural settings, emphasize rural background in the admission policies of medical schools, and use rural preceptorships or externships by medical

schools and rural residency training programmes to expose students to medical practice in small towns and rural areas.

BALANCING MEDICAL, BEHAVIOURAL, AND SOCIAL INTERVENTIONS

Since health status is determined by environmental, behavioural, and social factors, as well as medical care[5,59], medical intervention alone, even though primary care focused, is not sufficient significantly to improve the health status of a population. A clean, toxic-free environment and sanitation reduce exposure to microorganisms that cause various air-, water-, and food-borne diseases. Most of the causes of the current leading chronic diseases such as heart disease, cancer, and injury, can be associated with a host of behaviour risk factors: cigarette smoking, alcohol abuse, lack of exercise, unsafe driving, poor dietary habits and uncontrolled hypertension[60–62]. In addition, nutritious foods help increase resistance to disease elements, and low birth rates maintain the initial changes brought through environmental and nutritional improvement. Social factors are external to the individual and examples of social risk factors include low income, poor education, long-term unemployment, unstable family environment, and lack of community structure and cohesion. All these are linked to poor social outcomes which are associated with poor health outcomes.

Like behavioural risk factors, social risk factors tend to come in clusters and therefore should be dealt with as a whole. Medical intervention should be incorporated into a coherent, intertwined strategy that also includes social and behavioural interventions. Such a comprehensive programme should focus on the community (e.g., a county), rather than individuals, with broad based participation from local health department, inter-disciplinary teamwork among health care providers (i.e., practising physicians, hospitals, HMOs, health centres), social services agencies, community organizations, and citizen groups. A community-wide information system could be developed based on data available from the health department, providers, and insurance companies. Epidemiologic analysis of the frequency of clinical problems and an assessment of social and environmental factors would need to be done. Consensus could then be reached on the priority conditions that should be addressed in a comprehensive manner. For each priority health problem, primary care physicians would identify patients at risk, provide appropriate counselling and education, as well as preventive services, inform the patients of relevant community services, and refer patients to specialized services when needed. Primary care physicians not only work in their clinical setting, but also occasionally in the community-schools, prisons, chronic disease hospitals, and other places where professional activities supportive of the public health of the population occur. Primary care services, when properly linked to community social services on the one hand and specialty services for consultation and referral on the other, achieve better and more sustained health outcome.

Many industrialized countries have emphasized primary care in their health care systems and have been rewarded with better health status and lower overall costs than in the USA. Significant progress can be made to improve the balance of primary versus specialty care when there is a commitment to reorient thinking about the importance of primary care within a specialty-oriented health care system.

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