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**Training International Medical
Graduates as Physician Assistants**

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MEDEX Northwest, the University of Washington's Physician Assistant (PA) Program, has trained 28 International Medical Graduates (IMGs) since 1993. The success of this venture is in contrast to other PA programs.

In the 1970s Washington State permitted IMGs to work as PAs without specific additional training. During this time there were provisions for "informally trained" individuals who had received on-the-job training to be licensed as PAs (with a limited scope of practice). In the 1980s PA practice was limited to graduates of accredited and approved programs and then to individuals who were certified PAs. When this occurred IMG-PAs were no longer eligible for new licenses. Beginning in 1993 the University of Washington agreed to consider IMGs as candidates for admission to the MEDEX PA program.

MEDEX selection includes 3 group interviews for each candidate as well as writing samples, student interactions, and orientation content. IMG candidates who were not selected were selected out due to one or more of the following: language issues, incomplete knowledge of the PA role, interviewer concerns about potential dissatisfaction with the PA role, and/or general communication concerns.

The academic performance of MEDEX IMGs has created few issues during the didactic phase of the program and they tend to be typically "mid-range" students academically. Some IMGs had communication difficulties or role socialization and transition concerns. It was not unusual for this group to have issues regarding a lack of assertiveness and discomfort dealing with crisis.

The clinical performance of the MEDEX clinical training model includes close student monitoring and frequent clinical site visits. This allows faculty observation of the IMGs and how they adapt as PA students. The IMGs—many of who had been working as translators or lower level health workers in the US—generally made

an easy transition to the clinical phase of training. Most expressed gratitude to be back in significant clinical roles. All graduated “on time” and none were required to repeat any clinical rotations. All MEDEX IMG PAs passed the national PA certification examination on the first try. Individual characteristics, employment choices and geographic distribution are detailed. We conclude that IMGs not eligible for medical licensure in the US may be an overlooked applicant pool for PA education and deployment. Application screening and a well-designed admissions process may be the best criteria for successful matriculation.

Introductory physiology: An initial exploration of patterns of physician practice over time in British Columbia

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Objective

This poster will present preliminary results from a program of research designed to explore the sudden transformation in perception in British Columbia (Canada) from a “surplus” of doctors in the early 1990’s to a “shortage” only a few years later, despite a stable overall ratio of physicians per capita. This poster will focus on changes in the patterns of practice of physicians by specialty, age and sex

Method

We have linked anonymised, individual-level payment data for all fee-for-service physicians in the province of British Columbia with physician demographic information including age group, sex and specialty for the years 1992 to 2006. Payments in each year are being valued at constant (2006) fee levels, to eliminate the effects of fee change. As a result, we are able to analyze changes over time in “real” output per physician.

Preliminary and Anticipated Results

Early analyses confirm that there was no decline in overall supply of physicians per capita. Female physicians represented a much larger share of overall supply at the end of the period than at the beginning but, perhaps surprisingly, the sex-mix-change was not a dominant source of change in patterns of service provision. While the average number of days on which physicians saw a minimum number of patients declined for all physician specialty groups, overall provision of services, per capita and per physician, actually increased. However, this overall result masks significant changes in the age-specific activity levels of physicians. Younger physicians are, in general, providing fewer services than their older counterparts were at similar ages, while older physicians appear to be overcompensating. Age effects trumped sex effects. We anticipate that this is having a significant effect on changes in the *types* of services being provided, and perhaps on the accessibility to services for different patient age groups.

Conclusion

Measuring and understanding changes in physician supply is clearly far more complex than simply counting the number of trained physicians. There have been large changes in patterns of practice over our period of analysis. A better understanding of the physiology of physician supply will help in untangling the surface inconsistency between stable aggregate physician supply per capita, and the public perception of increasing difficulties in accessing physician services, at least for some specialties and locations.

The scalable record: an e-Portfolio from individual to workforce

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The NHS Education for Scotland (NES) e-Portfolio is a web-based system that supports assessment, reflective practice and competency development for a rapidly expanding diversity of health professionals across the NHS. The ePortfolio grew out of a successful Scottish pilot for trainee doctors, and subsequently rolled out across UK Foundation Schools and seven Medical Royal Colleges.

Objective

Although the software has been customised for over twenty user groups, it has remained imperative that NES ePortfolios developments simultaneously meet core common functions across groups but also can be customised for specific group requirements. To meet these demands three separate research strands have been employed to ensure that users' (individuals, deaneries or national groups) requirements are grounded in the best evidence available.

Methods and findings

From the first (2005) pilot, usage statistics, e-surveys and focus groups have been employed to shape system improvements, enhance functionality and meet the monitoring and planning requirements of regulatory bodies. This research has been both internal (eg just under 70% of reflective entries were shared with an educational supervisor thereby suggesting a dynamic supervision relationship where the ePortfolio supports ongoing learning and development in a training context)¹ and external (eg the British Educational Communications & Technology Agency study² found that "e-portfolios support lifelong learning when institutions across all phases work together in a regional approach to make the learner's pathway relatively straightforward and share the knowledge they are gaining from current implementation").

After initial scoping work around topics of effectiveness in postgraduate portfolios,

research identified a wide range of primary studies with little attempt to synthesise core findings, NES commissioned a systematic review on the topic, and examined the migration of portfolios to the electronic medium as a subsidiary question. Amongst the findings there is good evidence that if well implemented, portfolios effectively further both personal and professional learning, particularly if the learner receives regular feedback from a mentor³.

Finally an internal research stream continues to determine whether the data entered into the e-portfolio is meeting appropriate standards of use, and to produce information which informs continued delivery of a high quality educational service. A more detailed appraisal of the type and complexity of the data entered into the e-Portfolio to date has suggested the requirement for a two-phase approach to this analysis. Phase I will involve an in-depth audit of the 07/08 Scottish Foundation trainee data to comprehensively answer the following questions:

- 1) Have Foundation Trainees and support staff met nationally agreed portfolio requirements?
- 2) Have Foundation Trainees used e-portfolio learning tools adequately (Presented Evidence)?
- 3) How does certificate of performance status (satisfactory or unsatisfactory) correlate with quantifiable aspects of the assessment tools?

Phase II will build on these findings through a prospective research programme exploring the educational implications of Foundation Trainees' learning processes in relation to their preparation for specialist training and continual delivery of sound patient care.

Conclusion

Not only does this system accommodate the mobility of healthcare professionals but it supports workforce planning and quality assurance by providing a rich source of data about process and activity.

Medical Workforce in a Developing Country

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Objective

An appraisal of postgraduate training in Pakistan was undertaken in 2006-2007 for the Pakistan Higher Education Commission (Biggs 2008). Aspects of the workforce are examined.

Method

Universities, medical colleges and hospitals were visited and meetings held with consultants and 1,200 trainees.

Findings

Pakistan has 161 million people (WHO, 2008) and 131,642 registered practitioners (Pakistan Medical & Dental Council (PMDC) 2008) or 82 doctors per 100,000. 70% of the people are in rural areas and adult literacy is below 50%.

1. *Family practice.* 80% of the population depend upon family doctors for health care and 110,000 non-specialists are registered. There is little training for family medicine and published evidence of poor clinical care. Training programs are badly needed.

2. *Staffing of the health system.* There is a well-structured system for healthcare delivery but staffing in rural areas presents problems. There is opportunity for initiatives such as increased salaries and on-site housing, but funds are short.

3. *Trainee contributions to health care.* Trainees have a major role in clinical care but the paucity of programs that include provincial centres reduces their usefulness. Trainees in the armed forces have planned postings to military hospitals far from main centres; this model needs wider adoption.

4. *Data and women doctors.* PMDC gathers no information on work patterns at the 5-yearly registration of doctors; workforce planning is therefore handicapped. About 60% of medical students in Pakistan are women and it was repeatedly said that most leave medicine soon after graduation. There was no data

however, and no way of confirming this. Collection of data at an annual registration is urgently needed.

5. *Medical migration and health funding.* Mullan 2005 found that Pakistani graduates registered in 4 western countries equalled 11.7% of registered doctors in

Pakistan. Syed et al. 2008 gave some reasons: poor salary structure for postgraduates, poor quality of training and poor work environments in government hospitals. In 2006-2007, specialist trainees received small incomes and many had no stipend. I found low standards of maintenance in many hospitals. Government expenditure on health in 2005 was 2.1% of gross domestic product; per-capita expenditure was 49 'international dollars' per year (WHO 2008). Expanded funding of health care is needed.

Conclusion

There are too few doctors in Pakistan and extension of training programs outside population centres would help distribution of the workforce. Absence of data makes workforce planning almost impossible. Migration loss could be reduced, given government will and funding of stipends and facilities. The country has established postgraduate training and committed teachers; higher priority for health is essential.

Expanding and Redirecting Physician Resident Positions by the U.S. Department of Veterans Affairs

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Background/Rationale

Despite the recognized need for expanding training opportunities in graduate medical education (GME), the Department of Veterans Affairs (VA) is the only U.S. Federal agency increasing funding for physician residents. VA is not only concerned about addressing the looming shortages of physicians, but also about the content and context of their training experiences. Authorization to increase GME positions was granted after a year-long, data-based study by both internal and external advisory groups.

Objective

- To address physician workforce shortages by expanding resident positions in specialties of greatest need to U.S. veterans and the Nation
- To address the uneven geographic distribution of residents to improve access to care
- To foster innovative models of education, while enhancing VA's leadership role in U.S. GME

Participants

Applicant healthcare facilities, their affiliates, peer reviewers, Office of Academic Affiliations

Main outcome measures

- Positions awarded in a demographically sensitive manner to facilities with appropriate educational infrastructure and training capacity.
- Positions awarded to high-quality residency programs implementing new medical education models with transformative potential.

Method

Proposals from VA healthcare facilities in collaboration with their university affiliates were selected based upon a quality review by a panel of peers and an econometric model of training capacity, including clinical service generation by broad category (i.e., medicine, surgery, or psychiatry) and the availability of facility resources.

Setting

The largest single provider of healthcare training in the U.S. – a national system of hospitals and clinics providing integrated care to persons who served in the U.S. military

Results

698 positions (of 2,000 planned over 5 years) have been distributed to 72 VA facilities. 80% were awarded to facilities located in the U.S. southeast, southwest, west, and northwest – areas of high growth in service demand and historical underrepresentation of training positions. Trends in specialty distribution vis-à-vis VA and U.S. workforce needs will be presented. A new pilot program stressing educational innovations awarded 21 positions to 6 sites. Proposed innovations, including patient-centred care, patient safety, interdisciplinary care, continuity, and greater ambulatory exposure, will also be discussed.

Implications

As U.S. medical schools expand enrolment, national or regional shortages of GME positions and/or impact on U.S. training for international medical graduates (IMGs) is expected. Nevertheless, VA is the only U.S. Federal agency that has chosen to increase GME positions. VA is expanding its support of GME in a manner which takes into account educational infrastructure, population demographics, and the need to reform the organization and content of medical education itself. This approach is supplemented by parallel efforts to expand VA associated health

trainees to meet the present and projected future shortages of nursing, psychology, and other healthcare professionals.

Conclusion

Ground-breaking methods for expanding physician residency positions have been developed and implemented. VA's allocation model is proving to be sensitive to demographic shifts in the population served and some discipline-specific workforce needs. Present efforts aim to redirect the organization and content of training to better prepare the next generation of physicians for work in a more collaborative, effective, and efficient healthcare environment.

US family medicine residency training in rural areas

Authors

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Objective

Family physicians continue to provide the majority of care to rural areas in the United States. The decline in family medicine student interest and match rates have serious implications for rural family physician supply. In 2000, a baseline survey found that only 33 family medicine residency programs—7.3% of the total that existed at the time of the survey—were located in rural areas.

Method

The authors surveyed all U.S. family medicine residency programs about the current status of their rural training. Using the same survey items from the 2000 survey questionnaire, residency program directors were asked to identify their rural training sites. The questionnaire also focused on how much time residents spent training in rural places. ZIP codes and Rural-Urban Commuting Areas (RUCAs) were used to identify and describe rural and urban practice sites.

Population

Surveys were mailed to 460 family medicine residency programs. Closed, military, and Puerto Rico programs were excluded. Of 439 eligible programs, 354 responded (80.6%).

Results

There continue to be only 33 programs located in rural areas (7%). 49% of all programs considered rural training to be a 'very important' part of their mission. All of the rural programs were at community-based hospitals, although 31% of rural programs were university-administered. 53 programs (15%) reported having a formal 'rural training track.' 60% of rural programs had a formal 'rural training track' compared to only 11% of urban programs. Finally, the vast majority of residency training continues to take place in urban settings. Of 7593 residency training FTEs, 487 FTEs (6%) took place in rural locations. 84% of all rural training continues to be done by rural residency programs.

Conclusion

Despite the pressures facing family medicine and primary care, rural family medicine training programs continue to exist and train rural family physicians. However, there has been a decline in the amount of time that residents spend training in rural areas. A small number of rural residency programs continue to provide the majority of rural training in the United States.

TRAINING RURAL GENERAL SURGEONS FOR THE FUTURE

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Introduction

Recent workforce projections have identified an imminent crisis in RGH surgical staffing. Over the next 8 years, 11-14 replacement rural surgeons will be required. Since a fifth of Scotland's population lives in a remote, rural or island setting, preservation of this important workforce is critical.

The North of Scotland Deanery is responsible for postgraduate medical training across the 5 Health Boards in northern Scotland (Grampian, Highland,

Orkney, Shetland and Western Isles). This area includes 6 Rural General Hospitals (RGH) which offer an acute general surgical service as well as limited non-specialist elective surgery. The Rural General Surgeons are also required to treat patients with orthopaedic, urological, obstetric and other non-general surgical complaints.

However, recent changes to surgical training in the UK have meant that the "generality" of surgery has been lost, with trainees mainly limited to their own specialty and an increasing tendency towards tertiary sub-specialisation. In recognition of the special needs of the rural surgeons, a new curriculum module for Remote and Rural (R&R) Surgery has been approved by PMETB (Postgraduate Medical Education & Training Board). Trainees wishing to specialize in this area are required to gain specific competencies and to have evidence of completion of these modules to achieve a CCT. Rural Surgery is not currently popular with many current trainee general surgeons, who have usually been attracted into tertiary subspecialties in urban settings. Until now, training towards R&R competencies has not been readily available.

Pilot project

To this end, the North of Scotland Deanery has developed a 2-year specialist Remote and Rural Surgical Fellowship which will equip trainees with the necessary competencies to become RGH surgeons and introduce them to the benefits and pleasures of a rural medical lifestyle. Funding has been obtained in partnership between the Scottish Government and local Health Boards. The Fellowships will be advertised internationally and will be available to surgeons who are already on, or are eligible to be on the GMC Specialist Register, as well as to current trainees in General Surgery in the UK. Training will be tailored to individual requirements and will be undertaken in both RGHs and major teaching hospital settings, with specific end-points and assessments. We are also exploring options for proleptic consultant appointments with partner Health Boards.

It is hoped that this tailored training opportunity will provide the necessary surgical workforce for our rural areas. We plan to train 2-4 fellows at any one time

and it is expected that the first Fellowship will commence at the end of 2008.

2005 Generalist Physician Supply and Distribution in Rural United States

Authors

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Objective

This study examines the supply and geographic distribution of allopathic (MD) and osteopathic (DO) generalist physicians in rural United States, including international medical graduates (IMGs). The prevailing uneven distribution of and lack of access to physicians in many rural locations may be increasing because, among other reasons, declining numbers of US-educated MDs, USMGs, are entering family medicine residencies. Efforts to address rural shortages depend on having up-to-date information on physician practice location and an understanding the contribution of DOs and IMGs.

Method

The distribution and supply of generalist physicians (family/general practitioners, general internists, general paediatricians) for rural areas overall and within large, small and isolated small rural areas at the national, Census Division and state levels was examined. Rural categories were defined using the Rural-Urban Commuting Areas (RUCA) taxonomy. Physician-to-population ratios were calculated, as were the percent of physicians, within each geographic level. The distribution of rural physicians, as well as the role of rural DOs and IMGs, was assessed using data from the American Medical Association and American Osteopathic Association 2005 Master files and Claritas population data.

Population Studied

The 2005 population of rural generalists (n=30,847) who were clinically active, not in residency training, non-federally employed and aged 70 or younger were examined.

Principal Findings

Nationally, generalist physicians represented 41.6, 58.9 and 68.1 percent of all physicians in large, small and isolated small rural areas, respectively, while generalist-to-population ratios decreased as rurality increased, ranging from 61.1 to 35.7 per 100,000 for large rural areas compared to isolated small rural locations. Ratios at the Census Division and state levels varied considerably from the national results. DOs and IMGs made substantial contributions to the rural health workforce, representing 10.4 and 19.3 percent, respectively, of all rural generalists although their relative contribution varied geographically. Rural generalist DOs were more likely to practice in small and isolated small rural areas than MDs. Rural generalist IMGs, while less likely than USMGs to practice in rural areas, were more likely to practice in persistent poverty counties.

Conclusion

Rural areas, especially the smallest and most isolated, have relatively low generalist physician supply, although this distribution varies widely geographically. Generalists are an essential component of rural healthcare, to which DOs and IMGs make a notable contribution.

Implications for Policy, Delivery or Practice

Having adequate access to health care is associated with improvements in health status. A basic element of access, particularly for rural patients, is having a generalist physician. We identified many locations in which few generalist physicians practice. This situation coupled with the growing shortfall of newly-trained generalist physicians, makes access to healthcare among rural residents a pressing concern. DOs have been a fixture in certain rural areas and the recent increases in their numbers might help ameliorate rural physician shortages – but only if DOs can be attracted to rural-oriented, generalist residency programs. Similarly, IMGs may continue to meet an important need in many rural areas, but for this to occur, they too will need to be attracted to rural-oriented, generalist residencies.

Uncommitted Gen Xers or Workaholic Boomers? How Hours

Spent in Clinical Care Vary for General Surgeons of the Same Age in Different Birth Cohorts

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Objective

Anecdotal reports suggest that younger and female general surgeons' work fewer hours than their older, male counterparts but studies have not examined how hours worked vary for different birth cohorts at the same age. This analysis investigates the influence of gender, age, and cohort effects on the number of hours general surgeons worked in patient care in North Carolina between 1980 and 2006.

Method

Annual physician licensure files were concatenated from 1980-2006 and all active, in-state physicians reporting a primary specialty in surgery were identified. The data set contained 16,042 observations on 1,818 general surgeons. Surgeons were divided into 7 birth cohorts, ranging from a pre-Depression cohort born before 1912 to a Generation X cohort born between 1965 and 1979. The outcome variable of interest was hours worked per week in clinical care. Descriptive and bi-variant analyses were used to examine differences in hours worked by birth cohort, age group, and gender of general surgeons. Differences between male and female surgeons were analyzed for the latter two cohorts only due to the small number of female surgeons in practice in earlier cohorts.

Results

Averages of 594 general surgeons were observed annually between 1980-2006. General surgeons worked an average of 52.5 hours per week in clinical care, compared to 44.8 hours for physicians in other specialties. Hours per week steadily declined as general surgeons aged. Between ages 30 to 39 surgeons worked an average of 57.6 hours per week but by age 60-69 they worked 45.7 hours per week. Female surgeons were an average 10 years younger than their male

counterparts. Since younger surgeons work longer hours, when the data were viewed in the aggregate female general surgeons appeared to work approximately the same number of hours per week as male general surgeons (51.8 versus 52.5 hours per week respectively). However, after controlling for the age of the surgeon, the data revealed that female surgeons worked fewer hours in all age categories but particularly between ages 30 and 39 when they worked nearly 5 fewer hours per week and between ages 60 and 69 when they work 6 fewer hours per week. When analyzed by cohort, the general trend is toward fewer hours worked by successive birth cohorts at the same age. Between the ages of 30 and 39 the WWII cohort (born 1928-1945) worked an average of 60.6 hours per week compared to Generation Xers (born 1965-1979) who worked 56.8 hours per week at the same age. This differential was even greater between ages 40-49 when the WWII cohort worked an average of 56.5 hours per week compared to GenXers average of 50.1 hours per week.

Conclusion

The empirical findings from this research support anecdotal evidence that female surgeons and surgeons in more recent birth cohorts work fewer hours at the same age. Existing projections of physician supply do not account for gender, age, and cohort effects. Most models are based on cross-sectional data that tend to produce substantial errors if gender-age-cohort patterns change over time. Given the rapidly changing demographics of the physician workforce, future models of physician supply need to incorporate age-gender-cohort effects into supply estimates.

Impediments to Delivering Care: Findings from Canada's 2007 National Physician Survey

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Objective

In light of medical workforce shortages in most jurisdictions in Canada, the 2007 NPS sought to describe impediments identified by physicians in providing care for their patients and to pin point variations by broad specialty group, age, geographic practice setting and levels of professional satisfaction. An understanding of the barriers to care identified by physicians will allow planners and policy makers to optimize the use of our current resources, and enhance their ability to recruit and retain physicians.

Method

Secondary data analysis was conducted using the 2007 National Physician Survey (NPS). The survey was completed by 10,270 family physicians (FPs) and 8,969 specialists, representing 32% and 31% of all eligible respondents respectively

Results

The most common impediments to care provision identified by Canadian physicians in the 2007 NPS are as follows:

- system funding (identified by 56% of all respondents)
- availability of personnel (identified by 48% of all respondents)
- paperwork (identified by 46% of all respondents)

Bureaucracy (identified by 45% of all respondents)

Variations by Age

Younger physicians tend to identify greater impediments to care than older doctors. For instance:

- 61% of physicians under 35 report system funding as a major impediment to their delivery of care, versus 41% of physicians over 65.

- 52% of physicians under 35 identify the availability of personnel as an impediment, as compared to 28% of physicians over the age of 65.

Variations by Broad Specialty Group

There are clear variations in the impediments identified by FPs, versus physicians and surgeons in other specialties. For instance:

- Paperwork is identified as a barrier to care by 57% of FPs, but only by 34% of other specialists.
- Availability of personnel is an issue for 53% of other specialists as compared to 43% of FPs.

There is also a divergence within the specialty disciplines. For instance:

System funding is a major concern for surgical specialists, reported by 66% of surgeons, versus 46% of laboratory medicine specialists

Variations by Geographic Practice Setting

Disaggregating the reported impediments to care by geographic patient care setting provides some revealing insights. While there is much discussion of the inadequacy of healthcare resources within rural areas, the NPS reveals some interesting findings:

- System funding is identified as an impediment by only 46% of physicians in a rural practice setting versus 60% of those in an urban/suburban practice setting.

Availability of personnel is identified as a barrier

Variations by Levels of Professional Satisfaction

Unsurprisingly, there is a correlation between levels of professional satisfaction and the extent to which physicians identify impediments to care; physicians that report being dissatisfied with their professional life also report facing high impediments to care. For example:

- Of those physicians who say they are “very dissatisfied” with their

professional life, 78% also identify system funding as a major impediment to care delivery (versus the mean of 56% for all physicians identifying this as an impediment).

Conclusion

In an era of physician shortages, impediments identified by physicians in Canada provide key insights that may assist planners, regulators and educators to optimize the recruitment, retention and productivity of physicians

Clarifying recruitment & retention myths and realities: findings from Canada’s 2007 National Physician Survey

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Objective

Recruiting and retaining physicians to their cities and regions is a day-to-day challenge faced by policy planners and health authorities in all countries. Canada’s 2007 National Physician Survey (NPS) asked physicians to identify the factors contributing to their choice of practice location. This poster aims to identify key variations observed in response to this question.

Method

Secondary data analysis was conducted using the 2007 National Physician Survey (NPS). The survey was completed by 10,270 family physicians (FPs) and 8,969 specialists, representing 32% and 31% of all eligible respondents respectively.

Results

The most common reasons identified by Canadian physicians for choosing their practice location were as follows:

- Liked the location (57%)
- Practice opportunity was available (50%)
- Availability of medical support system (43%)

Variations by Age

- The availability of career opportunities for their spouses is key for younger physicians. A quarter of physicians within the 35-44 age group identified this as a reason for selecting their practice location, versus 15% of those in the older age bracket of 55-64. On a related note, family reasons was identified by almost half (48%) of those between 35-44 as compared to a third of physicians between 55-64.
- Financial recruitment incentives may play a role (albeit a lesser one) in recruiting some younger physicians. 19% of those under 35 and 10% of those between 35-44 say that this factor played a role in choosing their practice location.
- Liking the location where they practice is more important to the upcoming generation of doctors (identified by 64% of those under 35) as compared to older physicians (53% of those over 65). There is no observable variation between those in the 35-44 and 55-64 age category with 58% of both groups identifying liking the location as a factor.

Variations by Geographic Practice Setting

- Surprisingly, there is a negligible difference in the percentage of respondents from an urban/suburban practice setting versus a rural setting who say they chose their location because of the availability of a practice opportunity (53% and 51% respectively).
- Financial recruitment is a factor for a significant proportion of those practicing in rural (18%) and

geographically isolated (26%) areas.

Conclusion

The findings of the 2007 NPS bring to light some findings that have implications for the discourse on recruitment and retention strategies:

- Findings from the NPS validate and quantify the notion that jurisdictions looking to attract upcoming physicians must be able to offer employment opportunities for spouses and possess the social infrastructure that would attract families, given that these are important determinants for new doctors in choosing their practice location.
- There is almost no difference in the proportion of rural physicians versus urban physicians who say they chose their location because of the opportunity to practice. This would suggest that the availability of work opportunities (or the lack thereof) is *not* significantly impacting on doctors choosing to practice in urban or rural settings.

Health Human Resource Self Sufficiency in Canada

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Objective

Having the right supply and mix of health care providers is a goal for all health care systems. Despite health human resources (HHR) planning efforts, few countries have been successful in creating and maintaining a stable, adequate health workforce. In the traditional approach to HHR planning, self sufficiency has been defined almost exclusively in terms of

numbers. It is the capacity to produce or recruit enough new health care professionals each year to compensate for attrition (i.e., retirements, turnover, out migration) and keep pace with population growth.

In 2008, the Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources (ACHDHR) developed a paper entitled *How Many Are Enough?*, which outlined a new, inclusive approach for self sufficiency in Canada that explores factors, beyond capacity, to produce and recruit new health care professionals.

Method

Through the literature review of academic and grey literature on both domestic and international health workforces the paper assessed the traditional definition of self-sufficiency used in Canada and the strategies that jurisdictions have typically used to achieve it. The paper explores the pressures in the current system that affect self sufficiency, including the mobility of the workforce, advances in research, new technologies, changes in health care delivery, workforce, and the impact of policy decisions and efforts to manage the health care system.

Findings

The literature showed that gaining a better understanding of population health needs, use of technology, health promotion, implementing new models of service delivering and allowing practitioners to work to their full scope of practice may not only be more cost effective, but may also bring countries much closer to self sufficiency than simply increasing the production of health care professionals.

Conclusion

The paper proposes a new, more inclusive, approach to self sufficiency in Canada. This approach takes into account not only production and migration, but needs-based workforce planning, allowing health care providers to work to their full scope, retention strategies, the ability to retool the workforce, career ladders, education opportunities including options for life-long learning, and the importance of targeted recruitment.

Based on the exploration of factors for self sufficiency beyond numbers of health care providers such as health promotion,

technology, scopes of practice, and models of service delivery, the paper identifies a number of requirements for attaining self sufficiency as well as the roles that various stakeholders must play in order to implement them effectively.

Medical Revalidation – Principles and Next Steps

The Report of the Chief Medical Officer for England's Working Group

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Purpose

The UK Government White Paper Trust, Assurance and Safety – The Regulation of Health Professionals in the 21st Century stated the revalidation is necessary for all health professionals. Professional regulation should be about sustaining, improving and assuring that standards of the overwhelming majority of health professionals as well as identifying and addressing poor practice or bad behaviour. The primary purpose of revalidation is public protection. It must reflect the above approach to regulation, supporting the continuous improvement in professional behaviour and practice of healthcare professionals.

The purpose of revalidation is to ensure that licensed doctors remain up to date and continue to be fit to practise. Revalidation will not only protect patients and raise standards of care, but also reassure the public and maintain their confidence in the profession. It is important therefore, that the patient and public voice is strongly heard, both in designing the mechanisms for revalidation and in the actual process of revalidating individual doctors.

Revalidation has three elements:

- to confirm that licensed doctors practise in accordance with the

- GMC's generic standards (relicensure);
- for doctors on the specialist register and GP register, to confirm that they meet the standards appropriate for their specialty (recertification); and
- to identify for further investigation, and remediation, poor practice where local systems are not robust enough to do this or do not exist

Doctors who take part in the revalidation will be granted a licence to practice, and will be reassessed every 5 years. In time other healthcare professionals will be expected to revalidate

Method

There are five key challenges which successful implementation must address effectively:

- **The logistical challenge** is to ensure that the system of revalidation can deal with about 150,000 doctors who are actively practising in the UK and phase their revalidation cycles in a way that is manageable for individual doctors, employers and commissioners. The system will also have to identify and keep in view the hard to reach groups of doctors and those who move 'in and out' of the system.
- **The methodological challenge** is to design and implement valid, reliable, proportionate and fair systems through which standards are selected, agreed and assessed.
- **The connecting challenge** is to make effective and appropriate links between other systems of organisational quality assurance, service accreditation, patient safety and quality improvement.
- **The information challenge** is, over time, to develop and make routinely available data on outcomes and processes of care that can facilitate objective assessment of performance of individuals, teams and organisations and place the contribution of each in proper context.

- **The cultural challenge** is to allay fears and to create a climate and set of attitudes whereby revalidation is primarily a dynamic to support doctors in improving the quality of their practice and is viewed in this way by all constituents (the health professionals, patients and managers). Embedding patient experience, participation and voice throughout the process of revalidation will be vital to this.

The system will require that a standardised module of appraisal, agreed by the GMC, should be included in all appraisal systems. The other aspects of appraisal will be a matter for local employers and those who contract with doctors. This standardised module will be derived from *Good Medical Practice*. Initially the revalidation module will simply ensure that appraisal, together with other evidence, informs a judgement on whether the evidence presented supports revalidation or not over the five years of a revalidation cycle and gives doctors feedback on areas of their practice that may need development.

Administrations in Scotland, Wales and Northern Ireland will work with the GMC, the Academy of Medical Royal Colleges and the Department of Health for England to agree appropriate systems that are consistent in outcome across the United Kingdom, whilst reflecting the different processes and systems in different parts of the United Kingdom.

In England, the Department of Health has established the NHS Revalidation Support Team, which was formerly the Appraisal Support section of the Clinical Governance Support Team, to provide expert professional leadership for the design and delivery of new appraisal arrangements in England. They will work closely with stakeholders on the piloting, evaluation and implementation of appraisal, and ensure that the professions, employers and commissioners are informed and involved in both design and rollout of the new arrangements. The Revalidation Support Team will also consider the BMA's proposals on job-planning for secondary care. The team will work closely with the Devolved Administrations to ensure

consistency of approach where possible and appropriate.

The Department of Health will ask the NHS Revalidation Support Team to develop pilots in England to explore how appraisal might strengthen the formative and developmental core of appraisal as an aid to reflective practice. The primary focus of revalidation must be to support doctors to improve quality of care and develop their own talents, rather than solely to detect the small proportion of doctors who cause concern.

A range of patient and colleague questionnaires, often called "360° feedback", have been developed by several different organisations and are either in use or are being researched across a number of specialties, sectors and countries. Many trusts already ensure annual MSF as part of local clinical governance processes.

The task now is to

- secure agreement about the principles and criteria that these feedback tools must meet in order to be acceptable for relicensure purposes;
- agree the way such tools are administered;
- consider whether they can encompass the "whole practice" of doctors who work in multiple sites;
- agree how information from MSF will be fed back to individual doctors; and
- discuss whether MSF will be required for every appraisal, or only a proportion of them.

Next Steps

Revalidation represents the biggest change to medical regulation since 1858. The White Paper emphasises the need for careful implementation, based on good evidence and piloting.

This report has described how the vision for revalidation set out in the White Paper has been developed and taken forward. It identifies much that has been achieved, but also a number of areas where further detailed work is required before revalidation can be implemented. All stakeholders recognise the need to make progress but the work must be carefully planned and the details rigorously piloted.

Several approaches to piloting will be needed to:

- test the concepts,
- evaluate the potential impact;
- describe the components and processes, and
- assess the state of readiness of the different sectors and localities.

Some of this work is already underway:

- the research on questionnaires has provided valuable early information on their validity and reliability;
- work has started to review the readiness of health boards in Wales to support the revalidation process
- other options are also being explored with individual Trusts, specialties and sectors.

The sense of urgency and desire to make progress must be balanced with the need to get it right.

This points to a careful, incremental approach that enables all concerned to benefit from early learning and allows the revalidation model to be refined and strengthened as it matures.

England, Scotland, Wales and Northern Ireland Administrations will work with the GMC, Royal Colleges, employers, commissioners, patients and other key stakeholders to use the pilots in 2008 and 2009 to achieve this.

Conclusion

The introduction of revalidation, as a significant change, is naturally a source of concern to some, but its benefits to doctors, patients, the public, commissioners and employers are potentially enormous. At governmental and national level it will require close cooperation between the administrations of the England, Scotland, Wales and Northern Ireland and with the GMC, the Academy of Medical Royal Colleges, the profession itself, employers and commissioners.

Revalidation will provide rigorous and evidence based assurance to patients that their positive view of their doctors is firmly based. It will provide more effective support to doctors in reflecting on their practice and developing their talents. It will help a small number of doctors to improve on those areas where they need help to

meet the standards of their peers. It will provide the means to secure the investment in audit, appraisal and continuing professional development that doctors themselves seek. It will cement further the trust that the people of the United Kingdom have in the medical profession, and give doctors the ongoing means to sustain that trust. It will contribute to the quest to make health care both safer and higher quality.

Specialty Trends among Physician Assistants: United States

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Objective

With physician assistants (PAs) entering the US health workforce at increasing rates (5,500 annually), or about one for every four entering US-trained physicians, these providers may now be reaching a critical mass to affect health policy and healthcare delivery. In 2008, there are 65,000 employed PAs, with 88% working full-time. Although PAs were developed to ease historical shortfalls in the primary care workforce, many PAs practice in medical and surgical specialties as well. The role of PAs in offsetting future physician shortages will be affected by their distribution among the specialties. This paper examines the relative use of PAs by specialty, compares specialty prevalence between physicians and PAs, and analyzes trends in specialty choice among PAs.

Method

Data from the American Academy of Physician Assistant Master file and from the American Medical Association for the years 1996-2006 were analyzed. Descriptive statistics outline specialty distribution for physicians and PAs. Ratios of physicians to PAs in each specialty are presented and trends identified.

Findings

The proportion of PAs working in a primary care specialty (family/general practice, general internal medicine, or paediatrics) declined from 51% in 1996 to 36% in 2006. The corresponding decline among physicians was from ___ to 34%. Among the primary care specialties, PAs were more likely to practice in family/general medicine than were physicians (26% of all PAs versus 13% of all physicians in 2006) and less likely than physicians to work in general internal medicine, general paediatrics, or obstetrics/gynaecology. The 2006 ratio of physicians to PAs varies widely among specialties, from 6:1 in family/general medicine to 24:1 in general internal medicine and 35:1 in general paediatrics. Among the surgical specialties, PAs are most visible in orthopaedic and cardiothoracic surgery, where the physician: PA ratio is between three and four. These patterns have become more pronounced over the past decade, with an increase in the relative prevalence of PAs in all of the surgical specialties.

Implications of findings and policy relevance

Specialty choice for PAs is likely influenced by a variety of factors, including individual background and interests, educational emphasis, financial incentives, debt, and the willingness of physicians and practices to employ PAs. Funding for federal policies promoting primary care roles for PAs has decreased dramatically. As larger numbers of PAs gravitate toward surgical practice, and since physician shortages may be most acute in primary care, it is timely to consider the best ways for PAs to contribute to access, quality, and efficiency of the healthcare system. Are PAs better suited for generalist roles, in which they address a wide variety of problems that are often of lower acuity, or for roles requiring a narrower range of specialized knowledge and skills?

Comparative analysis of physician to PA numbers by specialty offers insight into emerging trends. If PAs are to be a partial solution to shortages in primary care specialties, policies and incentives may be required.

Emergency Medicine Trends in the Use of Physician Assistants and Nurse Practitioners

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Objective

To understand trends in emergency medicine visits, we analyzed a 10-year period (1995-2004) by provider, patient characteristics, and diagnoses. Because of reported medical labour shortages, we focused on how doctors, physician assistants (PAs) and nurse practitioners (NPs) shared emergency medicine visits.

Method

Data taken from the National Hospital Ambulatory Medical Care Survey allowed us to analyze over 1 billion (1,034,758,313) "weighted" emergency room visits for 1995 to 2004. The majority of patients were female (53.2%); the mean age of all patients was 35.3 years old. By 2004, physicians were the provider of record for emergency visits at 92.6%, with PAs at 5.7% and NPs at 1.7%. Emergency visits increased for all three providers over the ten years. However, patients seen by PAs increased significantly when compared with those seen by physicians or NPs. Medications were prescribed for three-quarters of the visits and were consistent in the mean number of prescriptions written across the three prescribers. Controlled substances accounted for 29.8% of prescriptions written by physicians, 29.3% by PAs, and 26.9% by NPs. No significant differences emerged when urban and rural settings were compared.

Conclusion

Factors that may explain the expansion of the roles and utilization of NPs and PAs may include increasing acceptance, clarification of legal and regulatory aspects of practice, staffing adjustments for overcrowded patient care circumstances,

shortages of fully-trained doctors, and the limitation of working hours of physician postgraduate trainees. Emergency department visits are forecasted to outpace the population demand with PA/NPs used in greater numbers. In view of an increasing demand for emergency medical services and a continuing shortage of physician personnel, policies are needed for workforce planning to meet the demand.

Understanding the Dynamics of the Medical Workforce: The MABEL longitudinal survey of doctors

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Objective

The aim of the "MABEL" survey (Medicine in Australia: Balancing Employment and Life) is to investigate the dynamics of the medical workforce in Australia, including patterns of work, choices of job, location, and working hours. The study explores family circumstances, working conditions, and incentives, and how changes in these impact on doctors' attitudes to work and productivity, and on overall medical workforce supply levels. The study is one of the few longitudinal studies of the Australian medical workforce, offering opportunities to explore workforce dynamics over time, and identify influences on doctors' workforce participation patterns that may be of use in developing policies for workforce support and management. The study has a Policy Reference Group with representatives of government health departments and other key stakeholders such as rural workforce agencies. This is designed to ensure that the questions investigated are relevant to current policy issues and decisions, and that the findings generated by the study are translated into the policy context.

Design

MABEL is a cohort study with annual waves of data collection, for four years in the first instance.

Setting

MABEL is a national study of the Australian medical workforce.

Participants

All doctors in the Australian medical workforce will be sent an invitation to participate in the first wave of the study in May 2008 (approximately 56,000 doctors). Pilot studies indicate that we are likely to achieve a response rate of 17%-20%, thus obtaining a sample of approximately 10,000 doctors. The sampling frame includes all groups of doctors working in clinical roles, including: general practitioners; specialists; specialists in vocational training programs; and non-specialist hospital doctors (e.g., junior medical officers).

Main outcome measures

The key outcome measures for the MABEL study include the number of hours worked and workforce participation decisions such as changing jobs, moving locations, choosing a specialty field, and leaving medical work. The study will investigate the relationship of these outcomes to key determinants such as demographic characteristics, job satisfaction, and job characteristics. A discrete choice experiment is also included, which examines doctors' preferences and trade-offs for different types of jobs.

Results

Separate analyses will be performed for the four broad doctor types (general practitioners; specialists; specialists in vocational training programs; and non-specialist hospital doctors). Comparisons will also be made by geographic location (metropolitan, regional and remote areas).

Data from the study will be used to estimate a structural labour supply model of factors influencing hours worked. This will be incorporated into a micro simulation model, which can then be used to examine the costs of potential policy changes and the effects of these changes on labour supply. Both the effects of changes in pecuniary and non-pecuniary factors can be examined.

Preliminary baseline data from the first wave of the study will be presented.

Conclusion

MABEL provides a new evidence base about Australian doctors' decision-making about work. This will assist in improving support for doctors and identifying effective policy levers for the medical workforce.

Progress of the Canadian Taskforce on IMG Licensure

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Objective

The Canadian Taskforce on IMG Licensure originated in a Health Canada (HC) sponsored Symposium at the AFMC Annual Meeting in 2002. Its mandate: develop recommendations to integrate IMGs into Canadian practice. Taskforce recommendations became part of a broader pan-Canadian initiative of HC addressing urgent Human Resource Issues. A Steering Committee shepherded the implementation of these recommendations, many of which have affected educational programs at medical schools. We outline taskforce recommendations and report on implementation progress for these HC funded projects.

Method

A formative and summative staged evaluation. The formative evaluation included a document/data review, project manager interviews, government/agency official interviews, and a project survey. The summative evaluation commences in the autumn of 2007 with a completion date of March 2008. Summative design uses multiple lines of evidence to render an informed assessment of how well each project did in attaining its objectives: a review of the outputs created by the projects, performance indicator data, statistical data from CAPER and regional projects, surveys of IMGs and educational institutions, and interviews with project managers and licensing authorities.

Results

Effectiveness of these projects is being evaluated. Formative stage assessment has documented substantial progress. Products to date include creation of the

National Assessment Consortium, developing a national database to track IMGs from system entry to practice, creation of a web-based "Information Centre for IMGs", creation of a modularized national Faculty Development program and creation of 5 provincial / regional IMG assessment projects.

Conclusion

Substantial progress is being made on recommendation implementation

What factors influence medical career decisions throughout the continuum of a physician's professional life?

Findings from the 2007 National Physician Survey

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Objective

- 1) Highlight personal, professional, and contextual/environmental factors that may influence career related decisions.
- 2) Address six stages – childhood, medical school, residency, first years of practice, mid-career, semi-retirement – in which significant career-related decisions are made.
- 3) Inform physician recruitment and retention.

Method

Secondary analysis - 2007 National Physician Survey (NPS).

Participants

NPS completed by 19,239 physicians in Canada, 733 second year residents, and

2,819 medical students (representing 32%, 28% and 31% of each group respectively).

Results

Over half of all medical students in 2007 (MSs) decided to become a physician during or before high school.

Personal factors:

Family (40% of MSs had an immediate family member in a health related occupation); spouses/partners (for at least 20% of MSs, and 60% of 2nd year residents (PGY2s)); children (5% of MSs & 20% of PGY2s have children; 18% of physicians aged < 35 were on maternity/paternity leave in the previous year); and debt (for 80% of MSs and 65% of PGY2s). Among the 65% of PGY2s who had debt entering residency, 20% of 2nd year family medicine residents (FMs) purposely chose a short residency program and 15% of 2nd year residents in other specialties (SMs) purposely chose a specialty they believed had a high earning potential. Personal health is also a factor for 6% of physicians aged 45-54 and 5% of semi-retired physicians.

Professional factors:

Doctor-patient relationship (85% of FMs vs 54% SMs vs 83% MSs); Intellectual stimulation (65% FMs vs 88% SMs vs 93% MSs); Workload flexibility (79% FMs vs 50% SMs); Influence of a mentor (26% FMs vs 44% of SMs); Teaching opportunities (23% FMs vs 37% SMs); Research opportunities (2% FMs vs 28% SMs).

Familiarity with different specialties within medicine varies – among 1st year MSs, only 2% were not at all familiar with the work of family physicians, compared with 39% and 44% with the work of internal and psychiatric specialists respectively. Hopes for which specialty to pursue remain quite constant throughout medical school: 27% of 1st year MSs and 30% of 3rd/4th year MSs hoped to enter family medicine.

Practice patterns can change throughout ones' career: e.g. while 31% of PGY2s (58% of FMs) plan to practice as locum tenens in the 2-3 years after completing residency, 32% of physicians aged <35, and 24% of semi-retired physicians have provided locum services in the previous year. 84% of physicians aged < 35, 71% aged 45-54, and 57% of semi-retired

physicians in group or interprofessional practice.

Contextual/environmental factors:

83% of practicing physicians work in the province they grew up. Among practicing physicians who grew in provinces in Canada with medical schools, 74% went to medical school and 59% did their residency in their home province.

Reasons for selecting current work location: liked it - 64% of physicians <35, 56% aged 45-54; spousal career opportunities -26% of physicians <35, 19% aged 45-54; university affiliation - 40% specialty physicians. 71% of FMs are being actively recruited for a practice location.

Conclusion

Much is known about the influences and desires of medical students, residents and practicing physicians, yet much still needs to be learned to successfully support a stable, committed workforce of satisfied physicians able to meet the health care needs of Canadians. Medical career development should be aligned with new and evolving models of care.

THE INTERNATIONAL MEDICAL GRADUATE SPONSORSHIP SCHEME

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Objective

- To sponsor overseas doctors for registration with the General Medical Council of the United Kingdom to enable them to take up Fellowships and pursue higher specialist training before returning to their own country
- To support and promote training for doctors from overseas whilst ensuring patient safety
- To support and foster links between postgraduate institutions in the UK and overseas

Requirement for Sponsorship

International Medical Graduates (IMGs) are not automatically eligible for registration with the General Medical Council (GMC).

As there are many historical training exchange links between hospitals and academic institutions in the UK with Australia, Canada, New Zealand and the USA, there is a need to arrange GMC registration for visiting IMGs.

The sponsorship scheme offered by the Royal College of Surgeons of Edinburgh is approved by the GMC and for suitably qualified candidates is a straightforward route to registration.

The Australian Rural GP Pipeline within the Australian Health Workforce Framework

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Objective

This poster presents the Australian Health Workforce framework for health workforce planning and implementation, informed by the thinking and experience of Health Workforce Queensland and other Australian rural workforce agencies. It brings together the many factors influencing the health workforce in rural and remote communities and graphically shows the interdependence of five factors.

The workforce supply factor of this framework is examined from a rural perspective to identify the potential workforce supply. The shortage of health care professionals, including General Practitioners has been well documented.

There are very mixed messages about the future supply that is to become available through the increase in graduates from Australian Universities and Medical Schools.

The poster presents available data and projects the potential supply of rural General Practitioners and the policy and practice changes that will be needed to ensure the supply of quality rural GPs.

Method

A literature search of official reports on the number of graduates from Australian Medical Schools and workforce projections was conducted in 2008. The Australian Health Workforce framework was developed by Health Workforce Queensland and a number of service partner consultants.

Health Workforce Queensland developed the workforce projections for each 'length' of the "Australian Rural GP pipeline". The use of the pipeline / water flow concept is an interesting image given the 100 year drought that Australia is currently experiencing. This drought can be related to the "drought" of rural and remote GPs and health workforce. The 'flow' of the predicted "tsunami" of medical graduates, through the internship year to the GP training and then to placement in rural and remote Australia is examined.

The success or otherwise of a range of strategies to increase the number of medical graduates and therefore increase the number of rural GPs is examined.

Emerging Findings

- It is clear that there will be an increase of Australian trained medical graduates by up to 85%. It is also clear that there is no comprehensive plan to accommodate these increases. The system is not ready.
- Health Workforce Queensland has endeavoured to present this picture so as to examine the impact, implications and to consider some potential solutions.
- Strategies will be required to resolve the supply and demand factors as well as infrastructure requirements to accommodate the training and service needs.

- The impact of the increased medical graduates at each stage requires new approaches and the policy and implementation systems as well as support and coordination systems will require significant change.

Conclusion

A comprehensive and coordinated policy and implementation approach is required to address the supply and demand issues regarding the current and future shortage of general practitioners to meet the needs of rural and remote Australian communities.

Study of Physician Supply and Access to Health Care in the Adirondacks

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The Center partnered with the Adirondack Rural Health Network (ARHN) in a collaborative effort to better understand the effect of physician supply on health status outcomes. The ARHN conducted a community assessment in 2004 that included a sample survey of individuals who reside in their six-county region. The survey asked about health status, use of preventive services, and access to primary health care. The Center analyzed the effect of physician supply on two types of outcome variables: the probability of having a primary care physician and the probability of obtaining preventive health care services, such as blood pressure checks, cholesterol tests and flu shots. Population density, primary care physician supply, and standard control variables such as age, income, marital status, gender, possessing health insurance, and current health status were utilized as predictor variables.

Primary care physician supply exerted a statistically significant effect on the probability of having a primary care physician, and having a primary care physician exerted a very strong positive effect on the probability of obtaining the various preventive healthcare measures. This research underscores several important factors. Population density consistently predicted physician supply, and the local supply of physicians exerted

a statistically significant impact on health outcomes by affecting the probability of having a physician.

e-Learning for Healthcare (e-LfH) is a partnership between the Department of Health (England), the NHS and professional bodies, which is revolutionising the way UK healthcare training is delivered.

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Background

The advent of the digital age, and almost universal access to high-speed internet connections, provided the opportunity to change medical training radically within the NHS.

e-LfH began in radiology. Despite the need for more radiologists, and an excess of applicants, the labour intensive nature of training meant it was not possible to increase training capacity without adversely affecting the delivery of healthcare.

A radically different, more flexible, approach to meeting demand was required.

In a unique collaboration, the Royal College of Radiologists and Department of Health developed an IT based solution – the Radiology Integrated Training Initiative (R-ITI).

Objective

- Develop a blended learning solution to deliver the 3-year postgraduate curriculum;
- Determine knowledge content suitable for e-learning;
- Deliver 600 hours of high quality e-learning as the cornerstone of a

nationally quality assured integrated training system;

- Deliver a Learning Management System to integrate e and non-e learning into learning paths
- Pilot in three Radiology Academies (new training facilities);
- Roll out the e-learning to all UK radiology training schemes, taking account of variable end-user IT facilities.

Method

e-LfH's innovative yet robust web based e-learning enables the delivery of nationally quality assured, standardised training. Sessions provide 'blended learning' solutions that combine traditional teaching methods with modern e-learning techniques and technologies that allow trainees to experience real-life scenarios and study at a time and pace that suit them.

Findings

R-ITI delivered against all its objectives. Radiology now has a National Quality Assured training system that delivers the entire 3-year radiology core curriculum through an instantly accessible, time flexible, interactive electronic learning platform.

In the first year of implementation, UK training capacity increased by 12%.

R-ITI has revolutionised thinking around training, development and assessment of doctors, and has won many national and international awards. This successful model for the delivery of generic and professional health care training led the Department of Health to establish the e-Learning for Healthcare programme.

e-LfH is now developing complementary e-learning for acute medicine, anaesthesia, audiology, dentistry, dermatology, emergency medicine, endoscopy, ENT, foundation doctors, ophthalmology, pathology and primary care, as well as induction, statutory and mandatory training for all healthcare staff. Staff will build a transferable lifetime record of skills and knowledge that will support healthcare professionals from the moment they leave university to the end of their career.

DH has established a community interest company to make **e-LfH** products available internationally

Conclusion

Described by the Chief Medical Officer as “the most positive development in medical education in 20 years”, e-LfH’s high calibre content and formal, structured learning pathways enable both trainees and tutors to maximise the learning opportunities in both clinical and classroom settings. Trainees have greater confidence – based on better knowledge – when applying their learning. “Safer practice is an important benefit from this ground breaking innovation.”

The impact of Generation Y physiotherapists in the workforce: a study of Curtin physiotherapy graduates 2000-2004.

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Background

Within healthcare, multidisciplinary models continue to grow. They rely on a sufficient workforce in all professions to ensure effective management of medical practitioner’s patients. Physiotherapy is the largest contributor to healthcare after nursing and medicine therefore it is important to understand the dynamic employment characteristics of the profession.

Questions: What are the workforce trends for recent physiotherapy graduates? What are their satisfaction levels and motivating factors for employment? How many remain in physiotherapy and what are their future career intentions?

Method

Design

Self-administered questionnaire

Participants

Contactable entry-level physiotherapy graduates (2000-2004) from Curtin

University of Technology who responded to the survey.

Results

There were 256 respondents (62.9%). Most respondents (76.5%) were employed full-time in physiotherapy, 5.1% were employed part-time as a physiotherapist, 3.5% were working part-time in physiotherapy with concurrent part-time employment in another profession, and 14.9% were inactive in the profession. Forty-nine point eight percent were Australian Physiotherapy Association (APA) members; 44.9% undertook 10-50 hours of Continuing Professional Development (CPD) in 2006. Of those working as physiotherapists, 79.3% worked in major Australian cities; 92.2% were clinicians; 43.0% spent some time in musculoskeletal (orthopaedic) physiotherapy. The highest salaries were earned by those working rurally, males, those completing over 100 CPD hours and those working privately. Satisfaction with physiotherapy was indicated by 72.0% of respondents, with higher levels amongst rural workers, APA members, those completing over 100 CPD hours, senior and principal physiotherapists. One-hundred-and-eighteen respondents believed they would leave physiotherapy within 10 years. The three best aspects of working in physiotherapy were ‘helping people/people contact’, ‘flexibility’ and ‘working in a healthcare team’. Major areas suggested for improvement were ‘remuneration’, ‘recognition for skills/experience’ and ‘marketing’.

Conclusion

Although the majority of respondents were satisfied with working in physiotherapy, prospective employment predictions suggest serious implications in the short to medium term. Planning for physiotherapy workforce recruitment and retention to avert the exacerbation of current shortages is essential.

Strengthening Australia’s Generalist Primary Care Workforce

Authors

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Background

Australia is recognised as having a health care system equal to the best in the developed world, and it is underpinned by a generalist approach, as provided by general practitioners (GPs). A systematic literature review of the place of generalism in the 2020 primary care team concluded that health care systems based upon a generalist primary care workforce underpinned by generalism will be well equipped to deliver cost-effective, equitable and accessible health care. The review also identified three policy options to strengthen Australia's generalist primary care workforce, including: increasing the importance and status of primary care generalists; enhancing educational content and settings that strengthen a generalist primary care workforce; and building and transferring evidence about strategies that strengthen generalism in the 2020 primary care team. To contextualise the policy options, a 'Strategic Framework' was developed to articulate the inputs and activities required in order to produce outputs and outcomes of a generalist primary care workforce.

The author (LN) received a research fellowship from the Australian Health Workforce Institute (AHWI) to build upon the systematic review and conduct a project (Generalist Primary Care Workforce- **GenPCW**) to develop a National Operational Action Plan to strengthen a generalist primary care workforce, using the strategic framework and policy options from the generalism review

Method

To inform the development of **GenPCW** a key stakeholder consultation processes is being conducted to ensure that the GenPCW project is informed by policy, practitioner and researcher perspectives. Key stakeholders were recruited on the basis of their extensive expertise in primary health care workforce reform. Consultations are being conducted either face-to face or via telephone, are being transcribed as field notes, and analysed and synthesised using thematic analysis.

Results

To date over 40 key stakeholders have been contacted via email, of these 23 have been consulted, comprising 3 government policy advisors; 7 primary care organisations managers; 6 academic GPs; 6 primary care practitioners; and one consumer representative. Key emerging themes include: the *importance of a generalist approach*, particularly with the new Australian Governments emphasis on whole patient care; the *timeliness* of the topic due to the health workforce crisis; the *challenges* to a generalist approach from the specialist professions; the importance of viewing generalists within the context of *primary care team approaches*; the need to develop a *measure of a generalist primary care approach*; the importance of exploring *patient perspectives* about the role and value of generalists; and the need to explore how evidence about generalists is framed to inform *workforce reforms* within an evidence-based policy context.

Conclusions

Consultations have identified key researchable areas to underpin the strengthening of Australia's primary care workforce including: Why is strengthening a generalist primary care workforce the way to reforming Australia's health workforce? What are the patient perspectives on / or preferences for a generalist primary care workforce? What career pathways would strengthen a generalist primary care workforce? and What processes can optimise an evidence informed policy approach to health workforce planning (using generalist primary care workforce as case example)?

Rural Medical Training Pathways

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Objective

Better Health, Better Care - SGHD 2007 supports a focus on sustainable remote and rural (R&R) services with an integrated

approach to service, workforce and educational planning. The Rural General Hospital (RGH) with Extended Primary Care Model has been described elsewhere.

As part of the re-design for R&R practice of existing Specialty Training Programmes, the Rural (Medical) Training Pathways (RTP) Group established 4 work streams to develop RTPs in:

- Rural (General) Surgery
- Rural Anaesthesia
- Rural General Practice (GP), including a hybrid Acute Medicine variant
- Rural Physician Medicine

Results

Each work stream has completed its work, having delivered a rural-track curricular modification for a design or re-designs of UK approved specialty training achievable through existing arrangements for UK Specialty Training through a North of Scotland Deanery hosting arrangement or as an add-on module for trained Specialists.

- Rural Surgery – (see poster XXX) is about to recruit to a Fellowship (1-2 years) for pre/peri/post-CCT (Certificate of Completion of Training) doctors from a General Surgery background
- Rural Anaesthesia – is about to recruit to a 1 year Fellowship for pre/peri/post-CCT doctors from an Anaesthesia background
- Rural GP – the North of Scotland has a bespoke R&R GP Specialty Programme, using a range of R&R training environments across the North of Scotland (see also poster XXX)
- GP with level 2 Acute Medicine competencies – the Royal College of Physicians of Edinburgh will be developing standards for (level 2) Acute Medicine training with GP Specialty Training fit for RGH practice. The North of Scotland Deanery will operationally these arrangements in due course.
- There are currently 2 trainee doctors in the North of Scotland General (Internal) Medicine Programme following the R&R track to CCT

Conclusion

Recruitment into the Fellowships (Surgery and Anaesthesia) will be linked to partnership with an employing Health Board.

Retention rates out of these programmes and into R&R trained doctor posts will be monitored.

Abstract submission from RRHEAL

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Background

NHS Education for Scotland (NES) is NHS Scotland's education and training body. Working with the 150,000 clinical non-clinical staff that makes up the NHS workforce in Scotland we help provide better patient care by designing, commissioning, quality assuring and, where appropriate, providing education, training and lifelong learning.

A fifth of Scotland's population lives in a remote, rural or island setting. The Remote and Rural Healthcare Educational Alliance (RRHEAL) develops multi-disciplinary educational solutions for this section of NHS Scotland's workforce and is based within NES.

Working to ensure a remote and rural focus around learner access, content and support we are gathering evidence to describe the educational design that suits rural learners and the impact that this has on local services.

This is done by working alongside a wide range of existing uni disciplinary NES projects as well as working with local health service planners to meet educational needs that are unique to the

setting and context of remote and rural healthcare services.

Objective

- To ensure maximisation of scarce resources within small communities
- To improve the range of skill available to Remote and Rural Communities

As part of a wide reaching work programme RRHEAL has worked with two projects that relate to medical staff:

1. Facilitating Tele Education for Orthopaedic staff and
2. Developing a Characterisation of the new GP Specialist Trainee education model for the remote and rural North of Scotland

Method

- Investigator familiarisation with the programmes through interviews with the educational planning faculty
- Interviews with a purposive sample from the 8 GP training sites
- Observations of video conference educational sessions
- Administered telephone survey

Findings

- The level of technical and administrative support is variable across the sites and trainer/learner expertise has improved with practise.
- Videoconferencing units in the regions studied are sometimes incompatible
- Video conferencing competences are currently acquired on an ad hoc basis; through observation and through experimentation and an identifiable skill set is emerging
- Training faculty list complications and frustrations as technical failings and human error

Discussion

Observations of good practice and VC etiquette will contribute to the design of induction programmes for remote learners and their trainers

- Recommendations about appropriate content and pedagogy can be made to both faculty and users of this type of To ensure staff competence appropriate to role and workplace education

Conclusion

Evidence of learner reaction, learning, behaviour change and impact on local services will be used to inform an emerging partnership with the Scottish Centre for TeleHealth and provide intelligence for rationalisation of the communications technology platform in Scotland.

RRHEAL has been able to provide a demonstration of the intended model of operation with established education partners that enhances the range of access content and support available to remote and rural staff and the people that they serve.

Physician Assistants in NHS Scotland: A Pilot Project

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Objective

Mounting medical manpower pressures in the NHS require innovative and appropriate solutions. NHS Education Scotland (NES) is currently investigating the potential role of Physician Assistants (PAs) as a new profession within the National Health Service.

Background

In October 2006 12 experienced PAs from the US were recruited for a 2 year period to work across 4 health boards in Scotland in a number of specialties. (Primary care, Emergency Medicine, Acute medicine and Orthopaedics.)

Participants

PAs are autonomous practitioners licensed to practice medicine under physician supervision. Currently 70,000 PAs work across all specialties in the US with extensive evidence supporting their successful incorporation into the workforce.

Expected staffing shortfalls consequent to medical training changes in the UK indicate a need for an experienced practitioner with a broad scope of practice providing workforce stability and flexibility. In the US the PA has a 'middle grade' role, though the complete extent of PA ability in Scotland continues to develop as the role becomes better defined

Design and Interim Results

An Evaluation has been commissioned by NES and is being undertaken by the University of Highlands and Islands Millennium Institute. After a cultural 'settling in', an interim report highlighted many positive qualitative PA attributes including excellent communication abilities, a hard work ethos, good team 'fit in' and wide scope of practice. PA cost effectiveness is unlikely to be defined on the basis of small numbers and other factors such as salary comparisons (Agenda for Change) and regulation.

Conclusions

After a positive interim project evaluation and an identified need for PAs, a decision regards the commissioning of a Scottish PA training scheme will be made by the Scottish Government.

Repopulating a skills base for rural medical practice – Rural Generalism.

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Introduction

In 2007, a review, "The expanding role of the generalists in rural and remote health – a systematic review"¹, was completed by a

consortium from Australian College of Rural and Remote Medicine for the Australian Primary Health Care Research Institute. It documented the decline of the skills base in rural medicine and from Australian and international literature a number of contributing factors were identified as well as potential solutions. The intent was to review the literature and explore policy implications for government.

Method

Peer-reviewed relevant literature was systematically searched in a number of health related databases. The search terms were selected through discussion of the topic areas and through the initial searching process to understand what terms were most meaningful according to the databases. The searches were modified according to the database and the search functionality available in each.

Findings

This review has concentrated on non-specialist generalist medical practice in Australia and particularly in rural and remote Australia.

- Definitions of medical generalism vary across jurisdictions and disciplines especially in the case of 'generalist' specialists whose numbers have declined steadily over the past 50 years and who are particularly scarce in rural and remote practice in Australia
- Differential rebates have accelerated growth in specialisation and sub-specialisation at the expense of generalist practice
- Generalist practitioners will increasingly provide anaesthetic, obstetric and minor surgical services in rural areas which are reliable and effective
- While doctors numbers have increased overall, primary health care practitioner supply decreased and specialist numbers increased nationally
- Medical practice in rural and remote communities is broader and more complex as distance from major secondary and tertiary centres increases
- Rural hospital and maternity services closures have devalued 'generalist' practice and contributed to the loss of a 'critical mass' necessary to provide

procedural services in many rural and remote communities

- Rural hospitals are as safe as, and more cost effective than, major secondary and tertiary hospitals
- Strong primary health care services result in good health care outcomes. Greater investment in primary health care and 'generalist' medical services may be more cost effective, efficient and equitable for rural communities compared with specialist and sub-specialist medical service providers
- Specific training and career pathways for 'rural generalists' has been developed in Queensland. It reflects the importance of broad procedural and cognitive skills supported by a training and career pathway with attractive remuneration for salaried medical officers
- Recruiting and retaining health professionals in rural and remote communities will remain difficult for some time. Mid-level practitioners like physician assistants, practice nurses and nurse practitioners can extend the reach of medical generalists and specialist services.

Conclusion

A number of policy implications were identified in the document. The loss of a skills base in rural medicine can, and in some instances, is being reversed by a number of strategies:

- Fund the expansion of the clinical teaching capacity of the health system, particularly in regional areas
- Establish regionally based mechanisms for planning and co-ordinating undergraduate education, vocational training pathways for medical graduates and junior doctors.
- Introduce incentives for junior doctors to undertake generalist training with clear training and career structure as well as preferential access to procedural training posts in hospitals
- Create articulated 'generalist' pathways in training within hospital and community sectors
- Address infrastructure needs in rural and remote areas to support training.
- Promote the re-establishment of generalist-led community teaching hospitals in both urban and rural areas to support redesign of regionalized medical vocational education and training

- The imbalance between sub-specialist and generalist medical practice is unaffordable and unsustainable and counter-productive to providing appropriate services in rural and remote communities.
- Promote recognition of rural and remote medicine as a specific discipline
- Fund education and training initiatives required for safe delegated practice arrangements
- Develop and trial accelerated pathways to vocational recognition for rural medicine generalists
- Extend rural generalist training and career structure initiative for shared accreditation and education at prevocational levels
- The role of generalists in the hospital setting be promoted in policy on hospital role delineation and privileging and credentialing processes
- Fund trials of mid-level practitioners in both autonomous practice roles as well as delegated practice arrangements with doctors to enhance the viability and sustainability of rural and remote medical generalist workforce
- Explore the integration of other disciplines into generalist primary health care in rural and remote communities, including nursing, Indigenous health workers and paramedics
- The model of increased community participation in planning, oversight and delivery of rural and remote health services may provide support for a more applicable suite of services including generalists from a range of disciplines

Expanding the healthcare role for rural and remote paramedics in Queensland to bolster the rural and remote health workforce.

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The Queensland Ambulance Service in collaboration with the Mount Isa Centre for Rural and Remote Health and Queensland Health developed and implemented a Graduate Certificate of Rural and Remote Paramedic Practice. The first 18 students graduated from the course in November 2007 and a further 24 paramedics should graduate by the end of 2008.

A preliminary review by the Australian Centre for Pre-Hospital research indicates that the course was well received in rural and isolated communities in Queensland and is supported by rural and remote health professionals and communities. A post course survey of graduates by MICCRH in 2007, revealed that graduates skills and knowledge increased and that they were already expanding their role.

There are still legislative and professional barriers to be overcome but this course could be expanded to provide a population health approach to primary health care. Integration with other disciplines in rural and remote communities, including nursing, medicine, Indigenous health workers and paramedics provide the basis for multidisciplinary teams while providing increased job satisfaction and the potential to attract and retain staff.

This poster presents an overview of the impact and potential of the Graduate Certificate in Rural and Remote Paramedic Practice.

Background

Severe shortages in the health care workforce in Queensland led to consideration of innovative ideas of thinking outside traditional health professionals roles in rural and remote locations to fill gaps in health service provisions. Consultation and research completed by the Queensland Ambulance Service (QAS) and Mount Isa Centre for Rural and Remote Health (MICCRH) demonstrated the capacity and desire of rural and remote paramedics to be trained and further integrated into the health system.

The QAS, MICCRH and Queensland Health (QH) worked collaboratively to develop the curriculum for a Graduate

Certificate of Rural and Remote Paramedic Practice (RRPP). The first cohort of students commenced in November 2006. 18 students graduated in November 2007 and 24 more students expect to graduate by the end of 2008. The rural and remote paramedics are called Isolated Practice Paramedics (IPP) on successful completion of the course. All of the students are QAS paramedics and are located in 24 different areas across rural and remote Queensland. The course was specifically designed to meet the needs of rural and remote communities in Queensland and focuses on the key issues of chronic disease management, injury and disease prevention and health promotion using a public health approach. The course enables paramedics to effectively increase the rural and remote health workforce with an expanded scope of practice which include additional clinical and population health skills.

Outcomes

- The Australian Centre for Pre-Hospital research (ACPHR) is conducting an evaluation of the RPPP programme over an 18-month period. An initial evaluation conducted in September and October 2007 found that there is significant scope for IPPs to play a role in rural and remote primary health care. The evaluation also indicated that this role is valued and strongly supported by existing rural and remote health professionals. Further information will be collected in late 2008 to evaluate how the first graduates are utilizing their new knowledge and skills and the impact on communities. The success of the programme depends on paramedics engaging with their communities
- A post course survey conducted by MICCRH in 2007, after the population health component of the Graduate Certificate, found that most of the IPPs felt that their skills in population health and health promotion had increased. Most of the paramedics indicated that the course provided them with the skills and knowledge to implement more health promotion and disease prevention into their practice with many reporting

increased job satisfaction and the desire to do further training.

Future Opportunities

- Further information will be collected in late 2008 to evaluate how the first graduates are utilizing their new knowledge and skills and the impact on communities.
- There are still professional and legislative barriers that need to be overcome in order for better integration of extended paramedic roles into health service framework. IPPs are only allowed to use their new skills and knowledge in isolated areas as defined by the Queensland Health (Drugs and Poisons) Regulation 1996. IPPs have identified many rural and remote communities not covered in the legislation that would benefit from the expanded paramedic role. IPPS are currently not allowed to practice in these areas because of the legislation.
- Support, education, policy change and political will are essential to overcome these barriers.
- Extending the curriculum to include other primary health care providers in rural and remote areas would provide the skills and knowledge required to meet the challenges of an increasing burden of chronic disease an areas of workforce shortage.

Conclusion

- Preliminary evaluation of the Graduate Certificate of Rural and Remote Paramedic practice indicates that the graduates are using their new skills and knowledge for the benefit of their rural and isolated communities.
- Integration of these expanded roles into the health system requires support, education, policy change and political will to overcome considerable professional and legislative barriers.
- The use of available health personnel to their maximum potential makes sense in rural and remote areas that have significant workforce shortages. The Graduate Certificate in Rural and

Remote Paramedic Practice could be used for other health professionals in order to provide population health skills and knowledge that are essential in rural and remote primary healthcare. Traditional health professional roles would need to be challenged and expanded. The success of such programmes would depend on the health professionals wanting and being allowed to expand their scope of practice.

The Diaspora of Physicians After Katrina

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The purpose on the study was to assess the effects of Hurricane Katrina on the practice locations of physicians practicing in the New Orleans metropolitan area.

In this analysis, the July 1, 2005 file of licensed physicians maintained by the Louisiana Board of Medical Examiners (LA BME) was used as the baseline file to identify all physicians with an active practice location in the three New Orleans parishes: Orleans, Jefferson and St. Bernard. The January 2007 AMA Masterfile was used to identify those physicians who indicated a primary active practice location in another location as of the end of 2006. The initial LA BME file included 4336 physicians and the AMA file was able to be matched and merged with 4253 (98%) records. The analysis consisted of descriptive analysis of the locations of the 2007 practice and the characteristics of the physicians.

The follow up file indicated that 2,357 had changed their practice location to another jurisdiction; 481(11%) were to another parish in the New Orleans urban area with over one-third of all physicians 1,465 (34.5%) moving to a place outside Orleans, Jefferson and St. Bernard parishes.

Of those, 926 (21.7%) indicated a primary practice location outside the state of Louisiana. Another 368 (8.6%) identified a practice location in Louisiana but in another Parish.

Of the physicians who moved out of state, the greatest number were practicing in Texas (152) followed by Florida (81), California (60), Mississippi (55), Georgia (54). Physicians were identified in 45 of the 50 states and the District of Columbia with 8 moving to Puerto Rico.

There was no difference in the gender distribution of those who did or did not move to another state, 21.4% of movers were males and 22.4% were females. Those who moved out of state were younger on average, 42.5 years, versus 49.9 years for those who remained in Louisiana. We were able to identify the state in which the physicians went to medical school and residency for a large proportion of the physicians, and, 18% (161 of 703) of those with data and reporting a move to another state went to the state where they did their residency training; 20% (137 of 682) moved to their state where they went to medical school; and 14% (113 of 788) to their birth state; 306 (33% of physicians leaving Louisiana) physicians returned to a state with one or more of those connections. A multiple regression analysis indicated that younger and primary care physicians were less likely to leave holding other characteristics constant. Gender and having trained in Louisiana were not significantly associated with staying in the city

The diaspora of physicians from Louisiana in the wake of the Hurricane Katrina, the subsequent flooding and attempts at reconstruction has reduced the physician supply substantially. More than one third of the physicians in practice in the city left to practice elsewhere with three-quarters of those leaving the state. Physicians chose to practice in states that were nearby, Texas being the most common out-of-state relocation, but the dispersion was very widespread with former New Orleans physicians moving to urbanized west coast and east coast states. One third of those who moved out of state has some prior connection to the destination state. The specific causes for departure cannot be determined without directly asking the

physicians but the places they chose to move to were either places they were familiar with or places where there were demand for their services and the opportunities to practice or remain in training. These were sufficiently abundant to allow for this relocation of a substantial portion of the city's physicians. It appears that there is sufficient demand for a large bolus of physicians to be absorbed into the national economy in the wake of a major, local disaster.

The changing face of U.S. osteopathic medical education

Author

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Within the last 20 years, the number of osteopathic medical colleges/branch campuses in the United States has nearly doubled, increasing from 15 to 28. Nine of those campuses were added within the last eight years, and several more are planning to open within the next two to five years. At the same time, class sizes of existing schools have expanded. In 2008 more than 3,100 DOs (doctors of osteopathic medicine) graduated from U.S. schools. By 2016 that numbers is expected to exceed 5,000. Currently nearly one in five students attending a U.S. medical school is attending an osteopathic medical school. This period of growth in undergraduate osteopathic medical education (OME) is both a cause and effect of the growing integration of osteopathic medicine into the U.S. medical care system. At the same time, this growth has created concern about clinical and faculty capacity, the adequacy of graduate medical education training systems, and the congruence of the traditional primary care mission in OME with the shifting choices made by today's osteopathic medical graduates. This poster will present data on the growth of undergraduate OME and the trends in graduate medical education and specialty selection of osteopathic medical graduates, and will highlight current concerns raised by the growth of OME.

Do changes to pay and working conditions influence hospital consultants' retirement plans?

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Background

Retention of older consultants becomes an increasingly important policy instrument as the workforce ages. It is important therefore to analyse the projected career durations of the existing workforce and to investigate how demographic and employment characteristics influence decisions about future labour market participation. New contracts for consultants were introduced in 2003 in the UK aiming to improve recruitment and retention through improved working conditions. They resulted in substantial pay rises and sought to restrict weekly working hours to a maximum of 48.

Aim

To analyse the determinants of consultants' planned retirement ages and to investigate whether improved working conditions had an effect on planned retirement ages.

Method

Analysis of data from a repeated national survey (2001 and 2006) of all NHS hospital consultants in Scotland. Response rates were 61% [1793/2923] and 56% [1920/3405] in 2001 and 2006 respectively. In both years consultants were asked to state their planned retirement age and their level of certainty. We first investigate the two surveys separately and compare effects of employment and personal characteristics on planned retirement age using cross sectional linear regression models. We then use the matched sample

of consultants who replied to both surveys to investigate changes in planned retirement ages using fixed effects regression. Responses are weighted throughout according to consultants' certainty about their plans.

Results

Cross sectional regression shows that on average, female consultants plan to retire earlier than males (2001: 58.5 vs 60.1 years, 2006: 59.0 vs 60.7 years). Consultants working in large general hospitals plan to retire significantly younger than those in teaching hospitals (2001: 59.7 vs 60.3 years, 2006: 60.2 vs 60.6 years). Pay had no significant effect on planned retirement age in either year. Hours worked had a positive and significant effect on planned retirement age in both years. In both surveys we found positive, significant effects of overall job satisfaction and having young children on planned retirement age.

Mean planned retirement age increased from 59.7 [SD=3.0] years in 2001 to 60.2 [SD=2.9] years in 2006. This partially offsets the reduction in projected remaining career service due to the increase of 1.5 years in average age. The increase in retirement age is largest in the youngest cohorts of consultants and differs across specialties. In the matched sample the only significant determinant of changes in planned retirement age between 2001 and 2006 was the change in overall job satisfaction.

Conclusion

Increasing the career duration of existing doctors is a valuable potential source of labour supply. Overall job satisfaction increased between 2001 and 2006 and was the only influencing factor on changes to consultants' retirement plans. It consequently provides a partial explanation for the increase in mean planned retirement age. NHS salary and working hours do not appear to directly influence retirement decisions. They could, however, be the underlying cause for the increase in job satisfaction.

Measuring the Flow of Physicians through the Canadian Medical Education System and Into Practice

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Objective

Canada maintains longitudinal, individual level databases that measure the flow and composition of the physician workforce from the time of application to medical school through undergraduate and postgraduate medical education and on into licensed practice. Although these databases are longstanding, there has been little effort to analyze them together to present a complete view of physician flows through the education system and into practice. This presentation provides an overview of Association of Faculties of Medicine of Canada (AFMC) databases, the long-term trends they measure and the insights they provide on Canada's physician workforce supply, composition and distribution.

Method

AFMC gathers data directly from Canada's faculties of medicine on an annual basis. Data files include records for all students applying to medical school and all enrolled undergraduate and postgraduate physicians-in-training. Records contain identifiers that facilitate linkage and longitudinal tracking. Data elements describe rank level, field of training and sociodemographic characteristics, such as age, sex, country of MD graduation and legal status. Practice location data is collected after physicians complete their postgraduate training - 2, 5, 10, 15, etc. years into licensed practice. Geographic data is merged with AFMCs medical education databases to provide metrics that span physicians' entire training and practice lives.

Findings

Application to medical school has experienced growth and decline over the past quarter century. Since 2001/02, the

number of distinct MD program applicants has increased 34% and the total number of applications submitted is up 51%. Following a period a decline, the relative number of males applying to medical school has increased 27% since 2002/03. Medical school intake decreased stepwise during the mid-80s to late-90s, marking a 16% overall downturn between 1983/84 and 1997/98. Since 1997/98, first year MD program enrolment has increased 63%, with almost 1,000 more students entering the system each year. Increased MD program enrolment has rippled through to post-MD training. Since 1998, there has been an overall 48% increase in first year post-MD trainees. The increase has been most pronounced within medical and laboratory specialties, with more modest gains in family medicine and surgical specialties. Faculties of medicine vary with respect to the proportional distribution of trainees across disciplines; some schools produce and train proportionately more family doctors, while others produce and train proportionately more medical, surgical and laboratory specialists. Approximately three-quarters of Quebec, Ontario and BC graduates continue to practice within their respective jurisdictions two years after completing training. By contrast, less than half of the physicians who complete training in the Atlantic Provinces and Manitoba are found practicing in their respective jurisdictions two years after completing training.

Conclusion

Canada is in the unique position of being able to measure the flow and composition of its physician workforce from the very early stages of training to the very final stages of licensed practice. While the data has been available for decades, we are only now bringing it together to produce a comprehensive view of the physician workforce.

**Medical school expansion in
Canada: regional campuses offer an
innovative approach to the
development of rural and northern
medical workforce**

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Objective

To describe expansion of undergraduate medical education in Canada, and the implementation of regional campuses in Canada as an innovative approach to the development and deployment of medical human resources.

Design

This is a descriptive study

Setting

We describe medical school expansion in Canada over the last 10 years, with a focus on the development of regional campuses. Canadian medical workforce is plagued by two problems: overall shortness of physicians and maldistribution of physicians in terms of their discipline and location of practice. Key stakeholders in health individually and together look for creative approaches to get the right number, mix and distribution of physicians. As part of overall expansion, medical schools have implemented regional campuses at a distance from their main campus.

Participants

We examined medical school expansion across all faculties of medicine in Canada; the development of regional campuses as one strategy contributing to medical school expansion; and specific strategies of four northern regional campuses intended to address the severe shortages of physicians in northern areas of Canada.

Results

Canadian faculties of medicine have responded to medical workforce shortages by increasing their number of admitted students from 1577 in 1997, to 2460 in

2007, an increase of 60% overall. As well as expansion of class size at existing campuses, seven faculties have created 10 regional campuses, often in medically underserved rural or northern areas that provide all four years of the MD Undergraduate degree. These campuses are intended in part to address the problems of reduced primary care career choice and recruitment and retention of physicians for northern and rural areas of Canada. Three faculties have implemented regional medical education campuses in northern areas of Canada. University of British Columbia opened, in 2004, a regional campus in the northern city of Prince George (number of first year students = 24). In 2005, the Northern Ontario School of Medicine, a new medical school in northern Ontario, opened two northern regional campuses admitting 56 students. In 2006, Université de Sherbrooke opened a campus in the northern region of Quebec in Saguenay/Lac-St-Jean (n = 24). These schools have adjusted admission processes, curricula, clinical settings, and use a technology infrastructure to teach across northern distances. The first students to complete their entire undergraduate program at a northern regional campus graduated in May 2008. Early results show comparability of educational experiences and student performance across regional campuses, increased selection of primary care and generalist specialties and rural postgraduate programs by students, and support from and early impact on northern underserved communities that host the programs.

Discussion/Evaluation

Canadian faculties of medicine have expanded and are attempting to find solutions to longstanding shortages of physicians in rural and northern areas of Canada through medical education initiatives. Early results suggest positive outcomes, but rigorous evaluation of educational comparability and workforce contribution of northern regional campuses is required to test the effectiveness of this intervention. Canada's experience and the developing findings have implications for other organizations of medical education attempting to address physician maldistribution.

Introduction of a Career Management Service for Foundation Doctors in Scotland

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Background

NHS Education for Scotland (NES) is responsible for the postgraduate training of doctors in Scotland. The Careers Manager was appointed in December 2006 and the career management service has been funded initially for 2 years. The Careers Manager provides a service in partnership with the four deaneries in Scotland.

Why the development was introduced

Due to the implementation of Modernising Medical Careers (MMC) doctors are required to make decisions about specialty training choice 18 months after graduating from medical school. The career management service prepares and supports doctors in this process in order that they can make well informed, realistic decisions about their career.

Objective

To ensure a consistent, national approach to the development and implementation of career management structures and services in the four deaneries, taking into account differing needs and circumstances.

What has been done?

1. Employment of a professionally qualified Careers Manager to lead the establishment and development of the service.
2. Development of a career management strategy.
3. Deanery career leads designated and career teams set up.
4. Design, delivery and evaluation of career management courses for foundation years 1 and 2.
5. Development and delivery of part 1 career skills training for

educational supervisors and foundation programme directors.

6. Production of a Scottish Medical Careers Handbook, dedicated careers website and Career Management Workbook for Doctors.
7. Provision of expert career counselling for 'doctors in difficulty'.
8. Research is being undertaken into the influence of the foundation programme on the specialty choice of trainees.
9. Networking and training events for university medical careers advisers.
10. Options appraisal for future development and sustainability of the service.

Future developments

A key objective for the future is to increase collaboration with medical schools and university careers services in order to promote a seamless approach to the development of career management skills from undergraduate to postgraduate.

The service will work towards quality standards accreditation with 'matrix' for careers information, advice and guidance.

The Integration of International Medical Graduates into the Physician Assistant Demonstration Project in Ontario, Canada

Author

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Objective

The objective of this abstract is to describe the process of integrating IMGs into Ontario's physician assistant (PA) demonstration project.

The physician assistant (PA) role is being introduced to the Ontario health care system through a series of demonstration projects, including a two-year demonstration project in selected hospitals, community health centers and diabetes and long-term care settings.

The PAs participating in the demonstration project include PAs who have been trained in the Canadian Forces, PAs who have been trained and certified in the United States and selected Ontario international medical graduates (IMGs) who have been assessed as possessing the competencies necessary to function in the PA role.

The decision to include IMGs in the project was based on the recognition that some IMGs possess the competencies required to practice in the PA role and would be interested to work in this capacity.

Methods

IMGs interested in becoming PAs were screened to determine whether they have the competencies required to practice as PAs. Only about 800 IMGs who had successfully completed Canada's national medical exams required for all medical graduate and who scored at the first year level or higher on an Ontario clinical examination for IMGs were invited to apply.

A standardized scoring process was used to rank the 250 IMGs who applied, and the top 85 candidates were invited to participate in a standardized central interview process. A comprehensive process was then used to match each of the 44 successful IMGs to a particular demonstration site. IMGs offered employment by one of the demonstration sites were then required to complete a comprehensive four-month PA integration program prior to starting clinical practice as PAs.

The PA integration program was comprised of two months of didactic education (six week classroom, one week written examination and Advanced Cardiac Life support course, and one week for any additional education and administration required by the demonstration site). This didactic phase was followed by a two-month clinical rotation at the site of employment. Both parts had evaluative components, including participants' successful completion of final written and clinical examinations.

In addition, all participating project sites, including those with PAs from the IMG stream, were involved in team integration activities and received a project toolkit to assist in integrating the PA role into health care teams.

Outcome

Of the 44 IMGs selected for the demonstration project, 39 successfully completed the integration program and began clinical practice as PAs. To date, only one IMG-stream PA has withdrawn from the project.

A comprehensive evaluation of the Ontario PA demonstration project is being undertaken. Evaluation results will inform future decisions about the PA role in Ontario, including various routes of entry into the profession.

Conclusion

In Ontario, IMGs have been successfully integrated into the PA demonstration project as a result of a rigorous selection process of IMG candidates and mandatory participation of selected IMGs in a comprehensive integration program. Project-wide measures such as team integration activities and the distribution of a toolkit also facilitated the integration of PAs into the health care teams of participating demonstration sites.

Linking workforce to education: students, medical education, and choice of practice

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Objective

The purpose of this study is to describe the characteristics of undergraduate students and the medical education programs components at the University of British Columbia (UBC, BC) and Universite de Sherbrooke (UdeS, PQ) that predict choice of career in primary care and non metropolitan (semi-rural/rural/northern/remote) locations.

Methods/Program/Project

Using a conceptual framework adapted from Bilodeau et Leduc (2003) and Brooks *et al.* (2001), we studied the link between student characteristics as well as their undergraduate medical programs and their choice of discipline and location of practice. We included all physicians who graduated from the medical undergraduate programs at UBC and UdeS between 1999 and 2006. We used administrative data from the Faculties of Medicine and Registrar's offices, and from the Association of Faculties of Medicine of Canada (AFMC)'s postgraduate database, CAPER. Independent variables included personal student characteristics: age, sex, address at admission, year of admission, location of pre-medical studies, exposure to metropolitan/non metropolitan (semi-rural/rural/northern/remote) regions during medical undergraduate studies, and exposure to family medicine during undergraduate clinical rotations. Outcomes studied included the probability that medical students enter in a family medicine postgraduate training, and for those entering in family medicine practice, the location of practice in non metropolitan areas. Tree based regression and conventional regression were used to explore the association between independent variables and outcomes.

Findings

Characteristics of students from both universities are very different and outcomes results can't be compared. Students from UBC are older and come from all across Canada while at UdeS there are proportionally more women and students come from only two Canadian regions. Regarding the choice of practice, we observed seven profiles (interacting sets of predictors) at UBC and eight profiles at UdeS. The most important predictor of entering in family medicine residency was, for both universities, the

academic scores during undergraduate studies (3rd year). For UBC, gender was the second most important predictor as for UdeS; it was the length of elective clerkships in family medicine. Regarding practice location in non metropolitan areas for family medicine practice, we observed seven profiles at both universities, although the most important predictor was different. At UBC the location of the mandatory family medicine clerkship was the most important one with location of high school studies being the second most important. At UdeS, scores in pre-med studies was the most important one with the year of admission in medical school being the second most important.

Discussion/Evaluation

Data quality and the difficulties with access to data impose limitations to the study. Both universities have opened regional northern rural campuses, where students take all years of their undergraduate degree. This study provides valuable baseline information and developed feasible methodology using administrative data to build a comprehensive prospective evaluation study of the fully distributed medical education program at UBC, U de S, and in similar programs across Canada.
