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Acknowledgements

We would like to thank the following members of the Global Planning Committee for their insights and time dedicated to mounting a dynamic and thought provoking program:

- Mark Cormack, Health Workforce Australia
- Erin Fraher, Cecil G. Sheps Center for Health Services Research
- Mary Freer, Health Workforce Australia
- Carole Jacob, Royal College of Physicians and Surgeons of Canada
- Nick Lord, Health Workforce Australia
- Jean Moore, Center for Health Workforce Studies
- Deborah Schofield, Sydney Medical School
- Sue Skillman, University of Washington Center for Health Workforce Studies
- Christine Smith, Royal College of Physicians and Surgeons of Canada
- Graham Willis, Centre for Workforce Intelligence

We would also like to thank the following organizations for their financial contribution towards the conference itself and production of this report:

- Health Canada
- Royal College of Physicians and Surgeons of Canada
- Canadian Health Human Resources Network
- The College of Family Physicians of Canada
- Canadian Medical Association

Danielle Fréchette, Royal College of Physicians and Surgeons of Canada
Ivy Bourgeault, Canadian Health Human Resources Network
Co-Chairs of the Canadian IHWC Committee
EXECUTIVE SUMMARY

This series of International Health Workforce Collaborative (IHWC) conferences brings together policy makers, academics, researchers and practitioners from the United States, Canada, Australia and United Kingdom with responsibility for and interests in health workforce issues. It includes approximately 90 invited participants in total from these countries and guests from several other countries and organizations. Participants include governmental and non-governmental policy makers, economists, researchers, medical educators, health service clinicians and managers.

The 14th International Health Workforce Collaborative conference was by invitation only and was held in Québec City, Canada on May 6-9, 2013 at the Loews Hôtel Le Concorde and consisted of a full day Technical Skills Session (May 6th), a series of plenary sessions (May 7th-9th), concurrent session (May 8th) and poster presentations (May 7th-9th) that covered a wide range of health workforce issues and innovations. Conference program is available in Appendix A.

Key Themes Resulting From the Conference Sessions

Several key themes emerged from the conference which are summarized below and further explored in the sections that follow.

1) Health Workforce Planning
2) Patient-Centered Care and Quality of Care
3) Health Workforce Distribution, Recruitment, Retention and Migration
4) Scopes of practice, Task Shifting and Interprofessional Collaboration
5) Innovations and Best Practices
6) Value of the IHWC

Health Workforce Planning

- The May 6th Technical Skills Session focused primarily on health human resource planning techniques. The majority of HHR planning models examined demographic trends, population health needs, and current utilization patterns to determine future health needs. Other models (notably Norway and the UK) have begun account for changing health service delivery, GDP expenditure growth, and wage costs. Despite considerable advancement in health workforce projections over the past ten years, there has been limited progress in developing models which incorporate interprofessional or team-based approaches to care.
- Throughout the conference, participants highlighted the need for a common definition for each health profession that would uniquely outline a set of standard competencies, knowledge, and scope of practice required for that profession, that is applicable across all jurisdictions and at all levels of governance (academia, regulatory, practice) in order to enable a more accurate measure of the health workforce while taking into consideration and allowing the required flexibility needed for professional development and/or to meet unique requirements of a given geographical location (e.g. underserviced areas).
Participants also noted the importance of the liberation of data as some databases/sources are not accessible to the public which creates limitations in terms of developing an overall picture of the health workforce. Access and coordination of multiple sources of data for all professions at a central location was also highlighted, as was the need to link health workforce models to meaningful data such as outcomes, costs, quality and patient experience.

Stakeholder engagement was also noted as important to address big picture challenges. Collaboration between government, researchers and professions is necessary for building a health care system that functions efficiently, safely and cost-effectively.

**Patient-Centered Care and Quality of Care**

While no one session focused solely on patient-centered care or quality of health care delivery, these two issues emerged as a prominent theme throughout the proceeding as an important determinant of health outcomes, and an indicator of the effectiveness, and efficacy of health care systems. Participants identified a number of challenges in determining how to:

- Define/measure quality and effectiveness;
- Whether the right indicators are in place; and
- How to measure/compare the quality of services provided by different health care professionals.

Related to quality of care participants discussed the challenges and appropriateness of developing strategies to incentivize achievement towards “gold standards” of quality service including how to develop the standards and how to go about making the process transparent. Issues related to how to provide users of health care a better understanding about costs and values of different services were also addressed.

Moving forward, participants noted that more engagement and involvement with users of healthcare services was required. This sentiment applies to both workforce planning, to better address population health needs applying a patient-centered approach, as well as educating users on the costs and values of different services.

**Health Workforce Distribution, Recruitment, Retention and Migration**

There was a general consensus among participants regarding the importance of developing strategies to facilitate the national coordination of health workforce data in order to better inform and address large scale health workforce issues including challenges related to the maldistribution and migration of health personnel.

Some participants suggested a national centre dedicated to assisting with the coordination health workforce planning efforts across jurisdictions including a central location for collection and analysis of health workforce data that is independent and provides arms-length, evidence informed advice and cohesive reports to help address health workforce issues that have impact across jurisdictional boundaries.
Key Issues Raised Relating to Maldistribution

- Key issues and trends highlighted by participants included:
  - Maldistribution of the health workforce (particularly physicians) is one of the top issues reported by OECD countries. This issue was seen as particularly salient in the Canadian context where the fragmented nature of Canada’s health care system in which both health care delivery and planning occurs on a provincial-territorial, rather than a national, basis.
  - Maldistribution of physicians, as reported by OECD countries, is not limited to rural vs. urban areas; there is also a national capital effect whereby the density of physicians in capitals is higher than other areas of the country.
  - Strategies reported by OECD countries to improve geographic distribution of physicians:
    a. Education policies;
    b. Health service delivery innovations;
    c. Financial incentives, including those designed to attract physicians to rural or underserved areas; and
    d. Regulations to constrain choice in location of physician practice.

Key Issues Raised Relating to Retention and Access to Care in Rural or Underserviced Areas

- The definition of rurality is different in every OECD country, making international comparisons challenging.
- There are challenges in identifying the key factors affecting health workforce retention.
- There are challenges in developing effective strategies to address barriers applicable to a wide variety of health care settings, including community care.

Key Issues Raised Relating to Recruitment and Migration

- A common theme discussed within IHWC countries was the continued dependency on internationally-educated health professionals (IEHPs) to sustain the supply of the domestic health workforces.
- Participants acknowledged the importance of building self-sufficiency globally, and discussed the need improve current policies and programs used for the recruitment, and integration of internationally-educated health care providers into IHWC countries. In addition, participants highlighted the need to develop better linkages between immigration and credential recognition.
- Participants also discussed issues related to roles and responsibilities regarding the regulation of international medicine; more specifically: determining who should be accountable and how to regulate at the international scale in order better address issues of self-sufficiency and potential impact of migration from source countries.
Scopes of Practice, Task Shifting and Interprofessional Collaboration

- Several OECD countries have introduced or expanded the roles of non-physicians within their healthcare systems to address maldistribution issues in underserved areas. For example, results from an OECD evaluation has found that the use of advanced practice nurses improves access to services, reduces wait times and delivers the same quality of care as doctors across a range of services. Findings have also indicated that the use of advanced practice nurses can result in equal, if not greater patient satisfaction due to quicker access and longer consultation.

- Participants discussed the importance of developing a definition of generalism (particularly as it relates to medicine) and scopes of practice across professions and across borders in order to help better address large-scale health workforce planning issues including the potential for inaccurate measurement of the present health workforce and/or failure to account for advanced scopes of practice. These issues may occur as a result of the significant variability in the current definitions and scopes of practice of health professions across borders and even levels of governance.

- There was a general consensus supporting the need for both specialists and generalists within the health workforce, recognizing the importance of better aligning the health workforce to address population needs in situations that require physician-specific skills and those that can fulfilled by other health professionals.

Innovations and Best Practices

A number of sessions highlighted innovations and best practices with respect to the health workforce and health workforce planning. Participants identified the following essential elements in successfully designing and implementing innovative approaches:

- Identify key drivers and factors leading to success, and barriers to implementation in addition to lessons learned.
- Improve engagement with potential users and stakeholders and facilitate adoption and application to other contexts.
- Include resources for evaluation in terms of cost effectiveness, impact & safety and for scaling-up of innovations beyond innovation site.
- Address potential consumer concerns including safety, potential implications and costs.
- Identify factors of high impact and high uncertainty.

Successes were most often achieved when the initiative had a high level of provider support/‘buy-in’ at its inception; sustained funding; and, a champion at the national level to support diffusion. The most common barriers to the adoption of workforce innovation included: professional resistance to change; regulatory challenges; and a lack of evidence surrounding its long-term effectiveness. Participants also noted the need to link innovations to health workforce modeling, which could provide policy-makers with a tool for assessing the benefits of innovations through simulation modeling.
**Value of the IHWC**

- Participants continued to see the ongoing value of the IHWC meetings, with a general consensus that the IHWC should continue. Strengths of the Collaborative included providing opportunities to network and exchange knowledge/experiences with countries facing similar challenges. This was seen as particularly important on the issue of health workforce planning.

- Participants also offered suggestions for improving the conference, including more focused discussion on priority issues that are common to all IHWC countries such as the mental health workforce and distribution issues. It was also suggested that updates on individual progressions by each country in terms of addressing key health workforce issues including successes and lessons learned as well as emerging health workforce models and innovations could be provided.
Monday May 6th 2013

PROCEEDINGS OF THE TECHNICAL SKILLS WORKSHOP
*Health Workforce Planning Techniques and the Policy Context*

**Facilitator:**
*Mark Cormack, Health Workforce Australia*

The following proceedings include presentations from the technical skills workshop that was facilitated by Mr. Mark Cormack from Health Workforce Australia. A brief overview of the structure of the workshop is available in Appendix B.

The workshop began with a presentation from Dr. Charles Godue of Pan American Health Organization (PAHO) who introduced the key issues to be addressed in the workshop (described above) and set the stage for the presenters by providing a brief overview of the political environment and challenges in the context of the Americas.

**SETTING THE STAGE**

*Health Workforce Planning Techniques and the Policy Context*
*Charles Godue, Pan American Health Organization*

Understanding the health policy environment and developing strategies to address health workforce challenges play a crucial role in the ability to strengthen national and local health systems and improve health and quality of the population. The mission of the Pan American Health Organization is to try to fulfill this role is in the region of the Americas which includes 35 countries.

According to a recent report, there are significant changes taking place in the Americas, both in terms of policy context and population demographics. In terms of population demographics, there appears to be a general reduction in health inequality, improved employment opportunities and improved academic outcomes in terms of achieving higher grades. In relation to South America for example, the population appears to be experiencing what is commonly referred to as “the China effect”, with positive, sustained economic growth (5-6% yearly). Similarly, significant changes appear to be taking place in terms of the health policy context with the development of policies that offer the flexibility required by private health care sectors while respecting interventions offered by the state. Together these changes have prompted additional pressure on governments to take swift action towards healthcare reform, particularly in light of the aging population and associated implications for the health care system. This, in turn, has led to conversations around developing a unified health system with universal coverage as a strategy to help address some of these challenges as well as challenges related to achieving proper balance of health human resources in the delivery of health care to the population, especially in context of primary health care.
Among these discussions is also strong desire to involve as many representatives of the population as possible in activities related to health workforce planning and decision-making however, identifying key players to include in such a group presents a particular challenge.

**PAHO’s Platform for Action**

PAHO has developed a platform for action to assist in addressing five critical challenges (see Figure 1) by helping to provide a uniform understanding of human resources for health and how they relate to one another.

**Figure 1.** PAHO Platform for Action

Source: Godue, 2013
Following the Pan American Sanitary Conference in 2007, PAHO developed a set of goals for each of the five critical challenges described above which included indicators to track and monitor how well the countries are doing in terms of addressing these goals.

*The Five Goals That Were Developed Included:*

1) Approach a density ratio of human resources for health of 25 per 10,000;
2) Ensure the proportion of Primary Health Care Physicians will exceed 40% of total medical workforce;
3) Develop Primary Health Care teams with broad competencies;
4) Achieve a ratio of Nurses to Physicians is at least 1:1; and
5) Establish a HRH unit.

PAHO then mapped these goals and critical challenges by country to obtain a baseline that would be used as a framework for program evaluation and outcome mapping (see Figure 2).

**Figure 2.** PAHO Framework for Program Evaluation & Outcome Mapping

Source: Godue, 2013
There are presently 24 countries joining this initiative which will help them look at human resources for health not only as a process but also as a mechanism to track the progress of the key challenges and help identify and better understand areas for improvement.

PAHO also helps these countries link the critical challenges to their goals and to prioritize and identify programs and ways for evaluating these programs as a strategy for collecting the critical information required for the post 2015 development agenda. Furthermore, all countries of central America are joining this initiative as a means for obtaining this wealth of information which will contribute to the discussions at the Third Global Forum on Human Resources for Health “Human Resources for Health: foundation for Universal Health Coverage and the post-2015 development agenda” being held in Recife, Brazil in November 10-13, 2013.

The activities that took place following the second assessment of the five regional goals of human resources for health (HRH) include:

**At the National Level**

1. A second assessment of the regional goals for HRH to contrast/compare with the first goals review and to establish priorities.
2. Present results and recommendations to the Minister of Health.
3. Identify Priority HRH Programs.
5. Prepare recommendations to the Minister of Health.

**At the Regional Level**

1. Create an inventory of HRH Programs.
2. Create an inventory of good practices with regards to achieving HRH goals.
3. Identify current HRH planning & management capacities (strengths & challenges).
4. Develop new regional, sub-regional and country HRH goals & strategies to support the implementation of primary health care & universal health coverage.

Dr. Godue concluded with an introduction of several new interests and activities undertaken by PAHO in the domain of HRH planning including the development of a technical cooperation strategy to support national capacity for HRH planning and an online course on PAHO’s Virtual Campus of Public Health with a coaching component for technical teams.
INTERNATIONAL AND EUROPEAN EXPERIENCES

Gaétan Lafortune from the OECD Health Division was invited to provide an overview of the technical aspects of modeling efforts and their application to policy and decision making in the domain of health workforce planning.

Overview of Health Workforce Projection Models in 18 OECD Countries

Gaétan Lafortune, OECD Health Division

The OECD recently conducted a review of 26 health workforce projection models from 18 developed countries, identifying similarities and differences between the models, and promising developments on the demand-side or supply side.¹

The aim of health workforce planning is to achieve proper balance between the demand and supply of health workers in the short, medium and long term, in order to avoid shortages or surpluses. Projection models are tools used to help guide decisions in achieving this proper balance notably in the establishment of “numerus clausus” in medical and nursing education intake, but also in assessing the potential impact of “what if” scenarios such as those relating to any re-organization of health service delivery to better respond to changing health care needs.

The following table provides an overview of the 26 health workforce projection models that were reviewed in this study from 18 OECD countries. For the most part, the models are at the national level, although there are a few examples of models that have been developed at the sub-national level, particularly in federal states where responsibility for health workforce planning may be decentralized at the regional/provincial/stat level. In several countries, different models exist alongside one another to project development for different categories of health workers (doctors, nurses or other health professionals) or in a few cases for certain parts of the health system (e.g. ambulatory care, hospital care, long-term care). The models covered in these 18 countries are clearly not exhaustive, and many more models have been developed by academics or government authorities in many of these countries.

There are some variations in the time period covered in different models. In most models, the time frame covers a period of 15 to 20 years. Such a time period has the advantage of exceeding the usual length of training for doctors and nurses, without being overly long (which would further increase the uncertainties concerning the set of assumptions on the supply side and demand side). Traditionally, many countries have focused their health workforce planning models on doctors; given the time and cost it takes to train them.

Table 1. Overview of 26 Health Workforce Projection Models Reviewed

<table>
<thead>
<tr>
<th>Country</th>
<th>Institution/Year</th>
<th>Coverage</th>
<th>Projection period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ministry of Social Affairs and Health (2011)</td>
<td>Nurses</td>
<td>2006 – 2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>re: doctors authorise</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to open practice</td>
</tr>
<tr>
<td>Italy</td>
<td>Ministry of Health</td>
<td>22 health workforce occupations</td>
<td>Annual decisions about</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>specialist training posts</td>
</tr>
<tr>
<td>Country</td>
<td>Organization/Source (Year)</td>
<td>Occupation(s)</td>
<td>Time Period</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Korea</td>
<td>Korean Institute for Health and Social Affairs (2012)</td>
<td>15 health workforce occupations (including physicians and nurses)</td>
<td>2010 – 2025</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Advisory Committee on Medical Manpower Planning (2010)</td>
<td>Physicians and dentists</td>
<td>2010 – 2028</td>
</tr>
<tr>
<td>United States</td>
<td>National Center for Health Workforce Analysis (forthcoming)</td>
<td>Physicians, Nurse Practitioners, Physicians Assistants</td>
<td>2010 – 2030</td>
</tr>
<tr>
<td></td>
<td>University of North Carolina, Cecil G. Sheps Center (2012)</td>
<td>Physicians</td>
<td>Flexible</td>
</tr>
</tbody>
</table>

General Framework for Assessing Future Supply and Demand of Health Workers

The general framework for health workforce planning models is based on a supply and demand approach, as outlined for instance in the figure below. The supply side of the framework includes inflows into different health occupations and outflows which look at such factors as how long the health workforce is working. The demand side of the framework is a bit more complex than the supply side and includes factors that can be expected to have effect such as health care needs arising from morbidity patterns, health care utilization, health care delivery models, the demography and GDP health expenditure growth. The OECD utilized this framework to identify the resources available and some of the patterns in the models for each of the countries.

**Figure 3.** General Framework to Assess the Future Supply and Demand of Health Workers

Challenges in Implementing the Framework: Definition and Measurement Issues

There are many challenges in incorporating in health workforce planning models all the different variables that might have an impact on the future supply and demand of workers that are illustrated in this general framework. Some of these issues relate to definition and measurement. These include issues of properly defining and measuring “shortages”, in converting headcounts into full-time equivalents, and in defining and measuring health worker “productivity”.

Shortages

Despite concerns in many countries about current shortages of doctors, nurses or other health professionals, it is somewhat surprising that most health workforce planning models start by making the simple assumption that the current labour market is in balance (there is no shortage or surplus), and then depict the evolution over time of the gap between the projected supply and demand. But if there are any current shortages (or surpluses) of certain categories of health workers, this will affect the estimated gap in the baseline year and throughout the projection period.

One of the main difficulties in departing from the convenient assumption that the labour market is in balance is to define and measure properly what is a “shortage” (or surplus) of any category of health workers. The standard definition of a shortage is that the demand for a certain category of workers exceeds the supply at a certain point in time. One of the main measures of a shortage is vacancy rates, in particular hard-to-fill vacancies (which may be identified by employers reporting that they had difficulties filling the posts or the average number of weeks/months to fill the posts). Conversely, a standard measure of a surplus of certain categories of workers is unemployment or under-employment (people working part-time who would rather work full-time). For self-employed workers, some alternative measures of shortage or surplus may be required (such as the waiting times to get an appointment).

Very few models in the OECD review have tried to estimate whether there was any current shortage (or surplus) of doctors or nurses. Those models that have tried to overcome the convenient assumption that the labour market is in balance have used different approaches, ranging from more simple to more advanced methods.

In the models used in some countries (e.g. Chile), a “shortage” is simply defined as the gap between the current physician-to-population ratio or nurse-to-population ratio and some “benchmark” (or target). The main issue then is to determine what should be the proper “benchmark” or target. Given that there are wide variations in the number of doctors and nurses per capita across OECD countries, the choice of any international benchmark is very large and the selection is necessarily arbitrary. Countries may focus on their own past experience, but given that the number of doctors and nurses per capita has increased over time in most countries, these ratios are “moving targets” and cannot provide any hard evidence of current “shortages” or future requirements.
The model used in Denmark has estimated the current shortage of doctors by using “hard” data on vacancies for physicians in the hospital sector. Based on these data, the model estimated that there was a shortage of about 1,330 doctors in Denmark in 2010 (out of a total of 20,170 doctors). In the Netherlands, the Advisory Committee on Medical Manpower Planning considered vacancy rates as well as studies on the distribution of GPs in rural areas to determine some level of “unmet need” for doctors at 1% of the current supply in the baseline year. In Japan, a shortage of nurses was assessed by using a survey of employers (hospitals, private clinics and long-term care facilities) reporting having current difficulties in recruiting nurses as well as their views about the situation would evolve over the next 5 years.

Some “needs-based” approaches to health workforce planning in Canada have tried to assess current shortages of doctors or nurses by using information about “unmet care needs”, either as reported by the population or as the gap between any current use of health services and the recommended use according to clinical guidelines. A physician model in Ontario used information on the population reporting having difficulties finding a general practitioner and other measures of “unmet care needs” for a regular health exam and other services to estimate the current shortage of general practitioners and medical specialists. Another “needs-based” model of Registered Nurses in Canada has estimated the current gap between the supply and need for nurse services by using information on the size of the population with poor health who do not use health services as much as might be expected, and came up with an estimated shortage of about 11,000 Registered Nurses in 2007.

Converting Headcounts to Full Time Equivalents (FTEs)

There is a general consensus that Full Time Equivalents (FTEs) is a better measurement of supply than headcounts. However, converting headcounts into FTEs is often quite challenging, as many countries do not have good or comprehensive data on working hours (or other measures of activities) to do the conversion. There are also issues related to making assumptions about future trends in working time for doctors, nurses and other health professionals.

In Canada different methodologies have been used to convert headcounts into FTEs. For example, the Canadian Institute for Health Information (CIHI) uses administrative data on gross income per physician paid fee-for-service as a measure of physicians’ workload, whereas the Ontario Ministry of Health and Long-Term Care uses survey data about clinical hours to measure FTEs.

Some models include various assumptions about future trends in working time for doctors, nurses and other health workers. In Belgium, the Committee of Medical Supply Planning used data on past trends to assume a gradual decline in working time per doctor, with an annual rate of reduction of 0.3%, although it recognises that this assumption is fragile and arbitrary. Health Workforce Australia assessed the impact of an hypothetical reduction in physician working time in a scenario which sets a maximum number of hours worked by doctors at 50 hours per week. This reduction in working time is then converted to a headcount equivalent to indicate the number of additional medical graduates who may be
required to fill the projected gap under that scenario. In Germany, the Federal Statistical
Office explored the impact of an hypothetical rise in working time of nurses in West
Germany to the higher levels observed in East Germany, and compared this to the opposite
scenario (a reduction of working time in East Germany), as well as to a baseline scenario of
working time remaining unchanged in different parts of the country.

Different assumptions about the future working time of different health care providers are
sometime interpreted as a measure of “productivity” (defined as outputs per worker),
although many other factors may also affect current and future productivity

**Productivity**

Some health workforce planning models assume that “productivity growth” may help to
address any projected gap between the future demand and supply of health workers, but
the sources of these productivity gains are often not well defined and vary across models.
As pointed out by health economist Robert Evans, “the concept of ‘productivity’ is very
simple in principle, but rather slippery to pin down in practice” (Evans, 2010). Following
Evans, “at the most abstract level, productivity is a relationship between one or more
inputs to a production process (in economic terms, ‘factors of production’) and one or more
outputs from that process”. In the health sector, the productivity of workers might
therefore be measured by relating some volume of “inputs” (e.g. number of doctors in
primary care or number of doctors, nurses and other workers in hospital) with some
volume of “outputs” (e.g. number of doctor consultations or number of hospital
discharges).

Put very simply, it is possible to distinguish two broad sources of labour productivity
growth:

1) **“Working Smarter”**, which means that the worker is able to produce more “outputs”
per unit of time (e.g. an hour), for instance because of greater training or experience,
better work organisation (e.g. a reduction in time spent doing administrative work
and more time spent in clinical work) or technological progress (e.g. a reduction in
operating time and the move to day surgery brought about by better techniques);

2) **“Working Longer”**, which means that the worker is able to produce more “outputs”
over a certain period of time (a day, a week or a year) because of longer working
hours (e.g. a GP may be able to see 3 more patients for every additional hour of
work).

In health workforce planning models, the first source of productivity gains (“working
smarter”) is reflected as a reduction in demand (because a smaller number of workers is
required to provide a given level of services), while the second (“working longer”) is
reflected as an increase in supply (a greater number of working hours and FTEs).

Given the complexity and uncertainty surrounding the many factors that may be driving
labour productivity growth in the future, nearly all health workforce planning models
which incorporate this variable use some arbitrary assumption about future productivity
growth. For example, in one of the alternative scenarios, Health Workforce Australia
assumed a 5% productivity gain for doctors and nurses over the period 2010 and 2025, without specifying the sources of these productivity gains. In Canada, a 2009 projection exercise commissioned by the Canadian Nurse Association assumed a 1% productivity growth per year over the period 2007 and 2022.

**Developments in Supply and Demand Based Models in Health Workforce Planning**

The following is an overview of the developments on the supply side and the demand side of health workforce planning models as identified in the OECD review.

**Supply-Side Developments**

Virtually all models used a stock-flow approach to determine health workforce supply. This approach mainly focuses on “replacement needs” and is largely dependent on demographic data to determine things like the number of doctors or nurses needed to replace those that retire. There have been a few recent developments on the supply-side to look more profoundly at non-demographic factors, including the immigration patterns of internationally educated health professionals, and possible changes in retention rates and retirement patterns of the current and future health workforce.

With respect to retirement patterns, it is important to look more closely at the effective retirement age of doctors, nurses and other health workers, as a large portion of the health workforce is approaching the “standard” age of retirement. Although in most countries the “standard” age of retirement for doctors is at the age of 65, there is growing evidence to suggest that the retirement patterns for doctors are changing and there is a rise of doctors working beyond the “standard” age of retirement, in some cases at a reduced rate.

- **Canada:** CIHI reported evidence that many doctors work beyond retirement age albeit often less (Pong, CIHI, 2011).
- **France:** Most of the increase in number of doctors between early 2008 and end 2012 are due to growing number aged 65 and over (8650 out of 10000)- unexpected in 2009 projections.
- **Netherlands:** The projection model for physicians takes into account that some doctors work beyond standard retirement age; recent evidence indicates that effective retirement age increased significantly in recent years.

The complex nature of retirement patterns illustrates the importance of revisiting convenient assumptions around set standards in health workforce planning.
Demand-Side Developments
A number of different approaches are used in health workforce projection models to try to capture the many different factors that might affect the future demand for different health services. This ranges from fairly basic approaches to more sophisticated ones (usually requiring a larger amount of data and the need to make a set of assumptions about future evolution):

1) Based on Population Size Only
These models are based strictly on population size and utilizes worker to population ratios such as doctor to patient ratio, to assess health workforce demand. With this approach, there is often an assumption around the need to maintain the current ratios.

2) Based on Current Health Care Utilization Patterns (by Age and Sex)
Many health workforce planning models look at current health care utilization patterns to assess health workforce demand. This approach usually assumes constant utilization rates by age and sex over time, usually leading to higher demand for doctors and nurses due to the ageing population.

3) Based on Population Health Needs
Some models have used a needs-based approach to look beyond current utilization patterns, and to examine the impact of a range of factors that might affect future demand, such as any current unmet needs, changing morbidity patterns (compression or expansion). Typically, these needs-based approach leads to higher estimates of current and future demands than those based on current utilization rates.

4) Based on Possible Health Service Delivery Reforms
Another approach that has been used in some health workforce planning models is to assess the impact of different health service delivery reform scenarios on workforce demand. For example, Switzerland and Japan used this approach to determine the impact of re-orienting activities from hospitals to primary and home-based care whereas the Netherlands, Switzerland and the United States used this approach to assess the impact of extended roles and scope of practice of certain “mid-level” providers on the demand for doctors (in particular, general practitioners/family doctors).

5) Based on Projected Growth in GDP and Health Spending
Finally, few models have tried to take into account projected growth in GDP and health expenditures, as important factors affecting the future demand for health workers. This approach requires making a certain number of assumptions about how GDP growth may translate into higher health spending (an “elasticity” of 1, less than 1 or higher than 1), and how higher health spending may lead to employment growth (as opposed to salaries and benefits growth, and spending on infrastructure and other items).

For example, in Norway, GDP growth and its impact on the demand for physician services has been assessed by assuming that economic growth will create higher expectations and utilisation of services beyond the impact of demographic changes alone, but the model also recognises that the growth in health and social spending will largely depend on policy.
decisions whose outcomes are uncertain. Under the baseline scenario, a total growth of 10.5% in health spending over and above the estimated impact of demographic changes is assumed for the whole projection period from 2010 to 2035, while a higher growth rate of 23% is assumed under an alternative scenario, thereby creating a larger projected gap in the number of physicians and nurses.

In the United Kingdom, a 2012 analysis by the Centre for Workforce Intelligence has tried to assess the potential impact of different scenarios about future GDP growth and public health spending growth on NHS employment over the projection period, based on a series of assumptions regarding changes in salaries and other non-salary costs.

The following is a summary of the demand based models for each of the countries represented at the IHWC conference (see Table 2):

- Australia’s demand based model follows more of a “utilization rate” approach.
- Some of Canada’s models look beyond utilization rates and follows more of a “needs-based” approach.
- Netherland’s demand based model looks one step further than Canada’s “needs-based approach” to include other factors related to health services delivery reform.
- Some of the models in the United Kingdom (England) have tried to look at the impact of projected health expenditure growth in the long term on the demand for doctors and other categories of health workers.
- United States’ demand based model considers both factors related to health services delivery reform and the impact in terms of health expenditure projections.

**Conclusion and Recommendations**

The following recommendations were provided by the OECD as a strategy for moving forward in health workforce planning and projection models:

1) Health workforce planning is not a perfect science. As such, there will always be a need for regular updating and a stable unit dedicated to producing solid results.

2) Obtaining good data about the state of the current health workforce is a prerequisite to future projections. As improving the quality of data and data collection strategies.

3) Health workforce projections strive to avoid the “yo-yo-ing” (i.e. shortage/oversupply) fluctuations of the health workforce by keeping an eye on the long term.

4) Supply-based projections models should focus more on retention and retirement patterns and revisit previous assumptions such as those pertaining to set “standards”.

5) Demand-based projection models remain the most difficult and complex to develop. As such, there is a need to consider possible impacts of health service delivery reforms. In this regard, there exists a growing need to gradually move from a single to multi-professional approach to workforce planning.

6) There is also a need to strengthen links between health workforce projections and health expenditure projections based on different scenarios.
Table 2. Overview of Demand-Side Factors of Selected Models/Countries

<table>
<thead>
<tr>
<th>Country/Institution</th>
<th>Population size</th>
<th>Constant utilization</th>
<th>Needs-based</th>
<th>Health service delivery reforms</th>
<th>GDP/health expenditure growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia, Health Workforce (2012)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada, Health Canada (2007)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada, Canadian Nurse Association (2009)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada, Ontario Ministry of Health and Long-Term Care and Ontario Medical Association (2010)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France, Ministry of Social Affairs and Health (2009 for MD, 2011 for nurse)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands, Advisory Committee on Medical Manpower Planning (2010)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom, Centre for Workforce Intelligence (2012)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA, National Center for Health Workforce Analysis (forthcoming)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA, University of North Carolina, Cecil G. Sheps Center (2012)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD Health Workforce Papers No. 62, 2013

Questions and Answers

How is GDP built into modeling and what is the correlation between GDP growth and provider?

While there is a growing need to look at how GDP growth might affect health expenditures and, in turn, health workforce demand, this is not an easy task and includes many uncertainties. Some models make the convenient assumption that the elasticity of health spending to GDP growth will be 1 (e.g., for every growth of 1% in GDP, health spending will grow by 1%), but there is evidence in many countries that this elasticity at the aggregate level has been greater than one over the past few decades, while some analysts also find an elasticity of less than 1 at a more micro (individual) level. Then, as already mentioned there is also a need to make a certain number of assumptions about how any health expenditure growth may translate in greater employment, as opposed to spending on other cost categories.
How is health services reform, such as the need for greater coordination of care, integrated or built into the health workforce projection?

This is also another important, but difficult issue to take into account in health workforce projection models. A greater coordination of care can imply very different scenarios, requiring different health workers working in different settings. The general trend, however, is to get health care services out of hospitals as much as possible and into primary or home-based care. This re-orientation of services, and scenarios about ‘who might be doing what’ in different settings, needs to be built into health workforce planning models. The coordination of care could imply a bunch of different scenarios under a wide range of contexts. The general trend however, is to get the health care service out of hospitals and into primary or home based care which needs to be built into health service delivery models. For example, the health service deliver models would consider such things as how you organize the delivery of care within a myriad of services for people with illness. OECD focuses mainly on the organization of primary care to avoid people going to the hospital.

Is there a method or strategy in place to assess the effectiveness and quality of the different projection models that you have presented today? Which models do you feel has done a better job with workforce projections in the past years?

A number of criteria can be used to evaluate the impact and quality of models, but in practice we have not been able to identify many formal evaluations of health workforce planning models in different countries. One of the few exceptions is an evaluation of the physician model in the Netherlands, which concluded that: the projection model was both comprehensive and parsimonious in including all the relevant factors affecting the supply and demand for GPs; the results in terms of student intakes had been generally accepted by stakeholders and implemented by government; and that this had helped maintain a good balance between supply and demand, with little evidence of any lasting shortage or surplus. Nonetheless, the evaluation noted that several improvements were still possible. Notably, one of the recognised weaknesses of the model is that it had not yet fully been able to include substitutions between different professions to allow planning from a broader “skill mix” perspective.
Robust Workforce Planning: Dealing with Uncertainty
Graham Willis, Centre for Workforce Intelligence

Workforce planning is particularly challenging given the complex factors that create uncertainties that affect our ability to make accurate projections of the health workforce. Factors such as economic outlook, population growth, health, ageing, the impact of part time workers, changing state pension age and determining who delivers care are common factors that pose particular challenges in many countries. In relation to health workforce planning in England, there are additional factors that add to these challenges. These include the large scale of the health sector which has approximately 1.4 million people of which 140,000 are doctors and 370,000 are nurses. There is the impact of National Health Service reforms that involve the implementation of new structures, organizations and processes and issues of balancing affordability whilst maintaining quality. Understanding or conceptualizing the impact that these factors or critical uncertainties may have on the health workforce will help to understand the future. Furthermore, developing a framework to help health workforce planners think about these uncertainties and reflect on possible outcomes will help with the development of more robust policies to address health workforce challenges across a range of different futures. It is in this context that the Centre for Workforce Intelligence (CfWI) has developed the robust workforce planning framework described below.

The Robust Workforce Planning Framework

The robust workforce planning framework is a method developed by the CfWI to help workforce planners identify potential issues that may need to be addressed in the future. This method uses a scenario-based approach as a means of identifying potential issues and determining the effectiveness and impact of potential workforce policies across a range of plausible future scenarios. As the title indicates, this strategy has been developed to help decision makers develop robust policies that are better able to address a range of issues and uncertainties that may arise in the future. The approach involves a high degree of participation and collaboration with decision makers throughout every stage of the process. These stages can be conceptualized as follows (see Figure 1):

1) **Horizon Scanning**: identify potential issues and outcomes that could affect workforce planning in the future.

2) **Scenario Generation**: identify a range of plausible future scenarios that might take place through the process of brainstorming and then refining and quantifying these scenarios through consensus using a Delphi approach so that they can be used for modeling. The scenario generation stage also takes into consideration how likely future developments identified in horizon scanning may combine to create plausible scenarios and allows workforce planners the opportunity to conceptualize and discuss how these scenarios might change over time.

3) **Workforce Modeling**: develop health workforce models to inform policy and planning strategies which includes supply and demand projections as well as decisions regarding intake and the identification policy levers which decision makers may have little control over.

4) **Policy Analysis**: identify whether there is a policy that works best to address these uncertainties across a range of potential future scenarios.
As seen in Figure 4 below, the horizon scanning stage feeds into both the scenario generation and workforce modeling stages which begins framing the issues and scenarios needed to be addressed, while the policy analysis stage is then used to determine the effectiveness of a potential policy intervention across the range of potential future scenarios.

**Figure 4. CfWI Robust Planning Framework**

The scenario generation stage of this approach helps decision-makers frame the decisions they want to make by going through the process of simplifying unstructured complexities towards the generation of more structured scenarios. The process begins by first identifying variables such as driving forces, future risks, issues, events and challenges and then determining their impact and likelihood of occurrence, and then mapping these out according to causality. The variables with the highest impact and uncertainty are then used to generate detailed scenarios describing potential future challenges which are quantified through consensus using a Delphi approach and these numbers can then be used for workforce modeling.
Figure 5 demonstrates the processes taking place from the Horizon Scanning Stage to the Workforce Modeling Stage.

The central concept behind this approach as depicted in Figure 6 is to help workforce planners frame decisions by delineating the external factors that create uncertainties (of which they have no control or influence) from the focal issues such as policy levers (of which they do have control). This helps increase their understanding of the potential impact and influence of their decisions in terms of the health workforce environment.

The major strength behind this framework is system dynamics modelling which allows workforce planners to:

- Better understand the dynamic behavior of the system over time;
- Simplify complexity through the process of scenario generation which allows them to better understand causality, feedback and delays;
- Be highly involved in the process thereby providing as much value as the end-product resulting from the process; and
- Consider the implications of policy in a more robust manner, thereby avoiding the implementation of policies that may lead to unexpected consequences.

Furthermore, the workforce planner’s high degree of involvement throughout the process allows them to understand how they came to the decisions that were made.
Figure 5. Process from Unstructured to Structured Complexity

Source: Willis, 2013
**Figure 6.** Central Concept Behind the Robust Workforce Planning Model

Source: Willis, 2013
**Stock and Flow Model**

The robust workforce planning framework has been applied to a stock and flow model to allow workforce planners to see how stocks change over time and to help explain fluctuations in the workforce. This particular model is highly effective as it allows the opportunity for planners to talk about what they expect to happen in various sectors over time. The model is segmented by age and gender and can include such factors as country of origin, qualification, skill and competences, workforce attrition, delays, exits and returns, migration and full/part time employment. As demonstrated in the Figure 7, this model can also be broken down in terms of supply and demand which allows for the identification of key variables that are relatively knowable and allows for the differentiation of factors of which we have control (policy levers) from those that are intrinsically uncertain.

Issues that can be examined on the demand side of this model might include determining whether the quality of service meets the needs gap and/or future capabilities of the system such as health services you may want to offer in the future. Although this model does not produce definitive answers, it does allow workforce planners to consider what might happen in a given future scenario with a certain degree of confidence.

**Translation into Policy and Decision-Making**

The robust workforce planning framework has already been used in to inform significant policy decisions which have been implemented in England with respect to the intake of medical and dental students. The framework was used to review the current intake against likely future requirement of these particular health sectors and has provided insight in terms of what policies would work best and resulted in a high degree of collaboration and consensus among workforce planners including senior policy makers to implement a 2% reduction in medical school intakes for one year.

**Next Steps**

In terms of next steps, the CfWI would like to develop a portfolio of scenarios and policies to support health workforce planners in decision making. They would also like to develop technology to facilitate the uptake and use of the robust workforce planning framework by integrating/applying the framework into social media and apps on a number of different platforms (iPad, iPhone, Android, etc). The CfWI would also like to look at new system dynamics models and conduct workforce reviews of the whole health and social care system, medical specialties, health professions and social care, and to drill down existing models to regional and local levels.
Figure 7. Stock and Flow Model

Supplementary content: Willis, 2013

Key
- Relatively knowable
- Policy levers
- Intrinsically uncertain

Source: Willis, 2013
Questions and Answers

What seem to be the drivers of big demand?

Based on the scenarios, the key demand drivers are related to how the health of the population will change. For example, expansion or compression of morbidity, and the increasing and ageing population.

How comfortable are the stakeholders with meek scenarios?

People are more happy dealing with gloom and doom so dealing with meek scenarios is not a problem. We often experience the opposite where we feel that there are not enough optimistic scenarios generated. Often, uncertainty causes people to be more pessimistic but we continue to work with the scenarios generated in the workshop and discuss issues around uncertainty.

With regards to the decision in England to reduce medical intake by 2%, do you feel that there might be a disconnection with what the model is telling you and what is actually happening?

There is a problem in the health care system in England in terms of oversupply of trained hospital doctors and lack of general practitioners which is not directly addressed by this model. However, the model can be reviewed each year and may begin opening people’s minds to start making changes. The model does allow decision makers to reflect on many of the important questions they need to consider such as “If I do make this decision, how long does it take to roll out?”, “What are the risks?” and “What are the uncertainties?”. This is just a starting point.
Dutch System for Determining Medical Workforce

Victor Slenter, Capaciteits Orgaan

There are approximately 16,700,000 inhabitants in the Netherlands with a health workforce comprised of 20,863 clinical specialists, 11,608 general practitioners, 5,331 physician social medicine, 1,630 specialists for the elderly and mentally disabled and 28,200 basic physicians/medical graduates. In 1999, the Netherlands established an advisory committee consisting of representatives from health insurance companies, professionals, universities, medical schools and teaching hospitals to provide recommendations to the government with regards to decisions affecting the health workforce while remaining independent from the government. In the Netherlands the government is responsible for implementing policies and regulations and paying for complete training of medical students including vocational training of medical graduates to become registered specialists and they also control the inflow of students at the first point of entry into medical school and point of entry into vocation training by specialism. This includes the entry of students who enter the system via immigration; this represents a modest number largely as a result of language barriers. Figure 8 below demonstrates the flow of students to medical specialisms with government intervention points depicted by the “Ø” symbols. The government is however obliged to heed the recommendations brought forth by the newly established advisory committee.

Figure 8. Flows of Medical Specialisms

Source: Slenter, 2013
The Netherlands produces approximately 2,850 medical students each year with a yield of 90% entering into the stock of “Basic Physicians”. Not everyone in this stock is eager to enter vocational training to become a medical specialist and so by placing government controls at both points of entry (i.e. point of entry into medical school and point of entry into vocational training) enables the government to better determine flow with the help of more accurate models for the supply and demand of the health workforce in the Netherlands. As a result, there are no shortages in the medical health workforce in the Netherlands.

**Netherlands Workforce Planning Models**

In 1999, the Netherlands began modeling the demand, supply and working process of their health workforce using an excel sheet to determine the inflow and in 2008, they utilized this data to develop the I-Think model to be used for the purpose of discussion and policy analysis that will guide the development of recommendations needed to inform their government concerning actions and policies required for health workforce planning.

The goal of both models is to match the future supply and future demand of the health workforce by utilizing data from the present and past years to produce recommendations towards actions required to match the supply and demand of the health workforce of a given target projected year (e.g. 2028). The figure below demonstrates the matching process for the Excel workforce planning model.

As demonstrated in Figure 9, the process begins by first obtaining data on the current workforce and determining the available supply and demand of full-time equivalents presently working in the health workforce and then determining the available supply and demand for a target future date including determining the changes required up to that future date to create a match between demand and supply in that future date. Some of the data included in this model is obtained through consultation with experts in the field for example, data for “unmet demand” of the current year is obtained through consultation with society and insurance companies and data for the “demographic changes” portion for the target projected year are either obtained through the Central Bureau of Statistics or through consultation with other experts in the field such as universities for data pertaining to epidemiological developments and estimates on changes in population composition. All of this data is then used to generate an array of different potential future scenarios from which experts are asked to identify the two most likely scenarios which are then used to help forecast the health workforce demand for the target projected date.

**A Few Formulas That are Used in Both Models**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Future Demand</strong></td>
<td>$(\text{Present demand} + \text{unmet demand}) \times (\text{demographics} \times \text{epidemiology} \times \text{sociocultural changes})$</td>
</tr>
<tr>
<td><strong>Working Process</strong></td>
<td>$(\text{Efficiency} + \text{Productivity} + \text{Professional Developments} + \text{Horizontal Substitution})$</td>
</tr>
<tr>
<td><strong>Supply</strong></td>
<td>$(\text{Present FTE} - \text{Decay}) + (\text{Inflow from Future Vocational Training} - \text{Decay}) + (\text{inflow from abroad} - \text{Decay}) \times \text{vertical substitution} \times \text{labour time changes}$</td>
</tr>
</tbody>
</table>
**Figure 9.** Excel Workforce Planning Model

Available supply year X

- Extra # needed in training / chosen year (per scenario)
- # in training (M/F) in time
- Inflow from abroad (M/F)
- Outflow from current supply gender specific for chosen year

Changes available supply until year X+t

- Yield (M/F) in time
- Retention abroad (M/F)
- Supply in Persons (M/F)
- Available supply in fte

Available supply in X+t

- External retention (M/F) in time
- Retention abroad (M/F)

Fte per person (M/F)

Unmet demand

Connection in year X

- Vocational developments
- Efficiency
- Horizontal substitution
- Labor time developments scenario’s
- Vertical substitution scenario’s
- Unmet demand or excess (per scenario)

Estimate demand year X

- Needed demand in fte
- Demographic changes for chosen year (all scenario’s)

Changes in demand until year X+t

- Epidemiologic developments
- Socio-cultural developments
- Non-demographic developments “Combination” scenario’s

Forecasted demand in year X+t

- Forecasted demand in fte (all scenario’s)

Source: Slenter, 2013
Engagement Strategy

There are two major engagement strategies used to help inform health workforce planning in the Netherlands. The first is held Chambers where tactical choices and decisions are made and two potential future scenarios are chosen (from a range of 7 to 9 possible scenarios) that guide the development of recommendations that will be communicated with the government through the advisory committee board. The second takes place as the advisory committee board members meet to communicate these recommendations on a strategic level that will help inform the decisions that will be made by the government. Discussions taking place in the Chambers largely involve participative research and policy analyses of health professionals and government and include commentary on research done on behalf of the Capaciteitsorgaan, studies looking at the effects of policy changes, expert opinion on gaps in data and constructing advice and recommendations to be communicated to the government. Discussions with board concerns strategic choices, approval and finalizing advice and recommendations with accompanying letters to be presented to the government at least twice a year.

Application of Both the I-Think and Excel Models in the Field

The Netherlands is presently using both the Excel spreadsheet and I-Think model described above to match the demand and supply of their health workforce for the targeted year 2031 using data from the present year (i.e. 2013) to inform the development of recommendations necessary to achieve this match. In reality, the ACMMP has advised the government to aim for a match in the supply and demand of their health workforce in the year 2022 which has already resulted in an increase in the number of extra student trainees from 76 to 227 annually. Thus far, the models have been used to conduct health workforce projections for each of the 27 clinical specialisms, 3 technical medical specialisms, 6 other medical specialisms, 8 medical “profiles”, and 2 dental professions (dentists and dental hygienists).

English Papers Available on the I-Think Model


**Geographical Differences in Health Workforce Supply**

The Netherlands also monitor general physicians by looking at geographical differences in the health workforce supply as depicted in Figure 10.

**Figure 10. Geographical Difference in Health Workforce Supply**

Source: Slenter, 2013

**Moving Forward**

The Netherlands is also interested in also expanding the models to other academic and non-academic professions and integrating different specialisms into the model to look at linkages between professions. They are also interested in scaling down the model to the regional level however, this may be challenging as a result of their small population size.
Questions and Answers

Could you please explain how you obtain data on retirement and more specifically how do you determine when people will retire?

In the Netherlands, social security is linked to income which allows us to obtain much of the data we need to determine the approximate ages of retirement. For example, we know that most surgeons cannot work after the age of 60 and so we use this standard to analyze social security and income data to determine the approximate number surgeons who will retire.

You only identified one policy lever in your presentation, are there others?

Although there are a lot of policy levers, the government only controls one and that is how many people get into the field. This is never-the-less a significant lever as it allows them to control the point of entry into medical schools and vocational training.

There tends to be a 50/50 split in terms of students entering the medical profession who pursue specialization and those who continue on as a general practitioner. Looking more closely at factors such as behaviors that influence these decisions is an important policy issue to consider. However, there may be adverse side effects in attempting to guide behaviours of a complex system using government controls like those presented in the I-Think model.

Yes, although government controls have placed limitations on openings for all health specialties as a means of controlling the number of professionals produced in that specialty, it may still have unfavorable consequences. For example, when a student does not get accepted for their first choice in specialty they are left to pursue their second or third choice which may create less motivation to work and as a result, may become less productive. Conversely, these limitations can also have positive implications such as in the case of anesthesiologists who may take longer to train in the field thereby creating delays in the process which affect the productivity of surgeons. We are therefore less eager to train new anesthesiologists and these government interventions enable us to place limitations on the number that enter the field.
OPEN DISCUSSION:
International and European Experiences

Panelists:
Victor Slenter, Capaciteits orgaan
Gaetan Lafortune, OECD
Charles Godue, PAHO
Graham Willis, CJWI

Facilitator:
Erin Fraher, Centre for Health Services Research

Major Themes

a) Process of Modeling: It isn’t only about the outcome it is also about engaging stakeholders in the process.
b) Role of Engagement: To promote action, address shortfalls and create models and visualizations that supports and facilitates utility.
c) Importance of Longitudinal Data: For tracking physician and nurse trajectories and better predict retirement patterns.
d) Purpose of Projections: The impact in terms of affecting policy, the successes and lessons learned.
e) Productivity: How is defined and measured?
f) Uncertainty: How to account for and/or model uncertainty?
g) Demand: How to define and model?
h) Integrated Workforce Models: What is meant by the term, horizontal/vertical integration, integration across employment strategies and how best to model?
i) Geographic Modeling: How to model a small unit of geography vs. national workforce models?
j) Innovations in Healthcare and Healthcare Delivery: How do to connect innovation, how do they affect/change the way we deliver care?

Questions and Answers

Reflecting on the earlier discussions about innovations and integrative health workforce models, do you feel that the Netherlands models really addresses healthcare needs and can it really help reduce oversupply of healthcare professionals?

Victor Slenter (ND): It is often difficult to determine whether there is an actual oversupply of healthcare professionals and whether changes will negatively or positively impact the health workforce. In the Netherlands, we often address the issue of oversupply by asking the government to consider more substitutions while simultaneously decreasing the number of medical specialists as these factors are often interdependent on one another. In some cases, vertical substitution is used to address the issue of oversupply but it is often difficult to determine how this will affect the health workforce. For example, by training more nurses, you have to also consider the impact on the rest of the workforce and may need to simultaneously reduce the intake of medical specialists beforehand.
**Graham Willis (UK):** This same issue presents a particular challenge in the UK. The issue of oversupply is complex and therefore tricky to put into modeling. However, we are presently starting to investigate the role of substitution.

**Do any of the models presented today take into consideration the role of social determinants of health and the use of disease management models in addressing issues that lead to disease in our country?**

**Graham Willis (UK):** We have considered these factors in one of our scenarios in CfWI’s robust workforce planning model framework and we have also integrated them to some extent in our models. However, these factors are not easily quantifiable. We have not developed a model looking explicitly at these factors.

**Victor Slenter (ND):** We have also attempted to address these factors in the Netherlands’ I-Think model through consultation with public health physicians and behavioral specialists.

The terms “demand” and “need” have been used repeatedly throughout the course of the presentations and I am interested to know how these terms are defined in the context of the models. Specifically, I am interested to know: a) what is meant by “Unmet Demand” and “Unmet Wants”? b) how do we model them? and c) how do we ascertain that they have been met given that they are complex variables that change with time?

**Victor Slenter (ND):** In the Netherlands we use the term “demand” rather than “need/want” because unlike “need/want”, we are able to quantify (put a number on) “demand” by surveying different specialisms, identifying the number of vacancies that need to be filled and assessing waiting lists. Also, unlike “need/want” there is a financial restraint associated with “demand” which decreases the likelihood of individuals seeing certain specialists.

**I am interested in knowing how one might introduce outcomes and/or determine cost efficiencies in workforce planning models?**

**Graham Willis (UK):** This is certainly not a simple challenge and is one that research has attempted to address. One idea that has been considered is system level modeling but this remains an ongoing issue.

**Victor Slenter (ND):** Although we are not responsible for addressing financial issues there are three things taking place with respect to cost efficiencies in the Netherlands: 1) insurance companies are making arrangements with hospitals to reduce costs by 1.5%, 2) the government has cut back costs to mental health given that it has tripled to 2.6 billion dollars in the last 5 years and 3) Implementing vertical substitutions while being cognizant of its potential impact on the health workforce.
EXPERIENCES IN NORTH AMERICA AND AUSTRALIA

The next series of presentations looked at the experiences in North America and Australia with regards to the technical aspects of health workforce modeling and their application to health policy and decision making. This began with a presentation describing the Canadian experiences by Steve Slade of Association of Faculties of Medicine of Canada (AFMC) and Adrian MacKenzie (on behalf of Gail Tomblin Murphy) of Dalhousie University in Nova Scotia.

Health Workforce Planning Techniques and the Policy Context

Steve Slade, Canadian Post-M.D. Education Registry (CAPER)
Adrian MacKenzie, Dalhousie University on behalf of Gail Tomblin Murphy

Unlike the more integrated approach from the Netherlands described earlier, Canada’s approach to health workforce planning is more fragmented, reflecting the fact that the majority of the responsibility for health care planning and delivery, including the regulation of health professionals, lies with provincial/territorial jurisdictions. The decentralized model responds to context-specific challenges associated with Canada’s expansive geography which consists of 10 provinces and 3 territories that spread across a geographical area of approximately 9,876,140 km² and its sparse population of 35,056,04 people of which the majority are concentrated along the 49th parallel. Furthermore, 46% of the total population originates in six major cities: Vancouver, Edmonton, Calgary, Toronto, Ottawa-Gatineau, and Montreal. This, in addition to a very rich cultural diversity with influences from Aboriginal, first nations, Inuit and immigrant populations makes health workforce planning particularly challenging.

Canada’s Health Care System

Despite the fragmented nature of Canada’s health care system in which both health care delivery and planning occurs on a provincial-territorial basis, there exists a national framework in the delivery of health care across the country which are largely shaped by principles of the Canada Health Act (CHA). The CHA is a piece of federal legislation consisting of five principles that set out the criteria and conditions to which health insurance plans throughout the country must conform in order to receive the full federal cash contribution under the Canada Health Transfer (CHT). These principles cover public administration, comprehensiveness, universality, portability and accessibility of health care.

Approximately 15-25% of health care spending in Canada comes from Federal government.

Ready to Study Ourselves

Over the years, Canada’s federal government has established several health care commissions as a strategy for reviewing the health care system in terms of identifying issues and recommending policies and measures to improve the system including long-term sustainability. These reports are available on the Health Canada website (www.hc-sc.gc.ca) under “Federal Commissions on Health Care”.

[Logos: Royal College of Physicians and Surgeons of Canada, Health Canada, Canadian Health Human Resources Network]
**Ready to Measure Ourselves**

Canada has also established several national agencies dedicated to the collection, compilation and presentation of health data across the country. Agencies such as the Canadian Institute for Health Information and Statistics Canada provide health and health workforce data which can be used for health workforce modeling and planning such as the data presented in Table 3 of the following page. According to this data, registered nurses (RNs) and licensed practical nurses (LPNs) represent the largest portion of the health workforce, with an estimated 270,724 registered nurses and 84,656 LPNs. Since 2004, there has been substantial growth in the number of dental hygienists, health care managers and midwives with estimated increases of 53%, 68% and 88% respectively (CIHI, 2011).

**Room to Improve Health Workforce Planning**

Canadian Health Workforce planners are cognizant of the need to improve in health workforce planning in preparation for challenges associated with an aging population. According to Statistics Canada, there will be a significant shift in the distribution of the population by the year 2036 with significantly more individuals in the population aged 65 years and older than previous years; a jump from 14% of the population documented in 2010 to an estimated 24% in 2036 (see Figure 11). Increasing emphasis is placed on the need to align postgraduate medical enrollment with demographic shifts in the population. For example, the number of pediatric trainees is relatively large and increasing while the number of care of the elderly and geriatric medicine trainees is relatively small and not increasing (CAPER, 2013).

Similar issues have been identified in other healthcare sectors as well. Data from the Canadian Agency for Drugs and Technology in Health have shown that the number of lab tests ordered has been increasing every year, yet data from the Canadian Institute for Health Information show that the number of additional medical lab technologists produced in the past decade appears to be negligible. There also appears to be issues within certain health professions with respect to finding employment in their field despite the prevalence of available opportunities/vacancies. For example, despite the prevalence of full time vacancies across the country for LPNs and RNs, the Canadian Federation of Nurses Unions notes that over 5,000 are unemployed or working in other fields but are still seeking employment in their field. Similarly, despite the wait times for orthopedic surgery (average of 40 weeks as estimated by CIHI), the Royal College of Physicians and Surgeons of Canada has noted that newly trained graduates in orthopedic surgery are among many specialist physicians who are reporting difficulty finding employment. These findings highlight the need to improve health workforce planning in order to address issues of unemployment and better align the provision of care to address even obvious trends such as population aging.
### Table 3. Number of Health Personnel in Selected Health Professions

<table>
<thead>
<tr>
<th>Registered: Represents all individuals who are registered with an organization. The count may include individuals in all registration categories (active, inactive, honorary, etc.).</th>
<th>2004</th>
<th>2007</th>
<th>2011</th>
<th>Percentage Change 2004–2011</th>
<th>Percentage Female</th>
<th>Percentage Male</th>
<th>Percentage Unknown</th>
<th>Per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audiologists¹</td>
<td>1,773</td>
<td>1,344</td>
<td>1,625</td>
<td>88</td>
<td>77</td>
<td>18</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Chiropractors</td>
<td>7,482</td>
<td>7,434</td>
<td>8,341</td>
<td>21</td>
<td>37</td>
<td>63</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Dental Assistants³</td>
<td>24,045</td>
<td>24,045</td>
<td>24,045</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dental Hygienists</td>
<td>22,956</td>
<td>25,639</td>
<td>26,954</td>
<td>53</td>
<td>85</td>
<td>2</td>
<td>12</td>
<td>77</td>
</tr>
<tr>
<td>Dentists</td>
<td>7,733</td>
<td>8,737</td>
<td>10,141</td>
<td>30</td>
<td>54</td>
<td>2</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Environmental Public Health Professionals</td>
<td>1,205</td>
<td>1,429</td>
<td>1,556</td>
<td>29</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>Opticians</td>
<td>7,450</td>
<td>7,450</td>
<td>7,450</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>22</td>
</tr>
<tr>
<td>Paramedics</td>
<td>37,006</td>
<td>37,006</td>
<td>37,006</td>
<td>0</td>
<td>26</td>
<td>57</td>
<td>18</td>
<td>137</td>
</tr>
<tr>
<td>Respiratory Therapists¹</td>
<td>7,274</td>
<td>8,211</td>
<td>10,133</td>
<td>28</td>
<td>74</td>
<td>24</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Social Workers¹</td>
<td>20,940</td>
<td>31,943</td>
<td>30,315</td>
<td>22</td>
<td>01</td>
<td>14</td>
<td>5</td>
<td>111</td>
</tr>
<tr>
<td>Speech-Language Pathologists¹</td>
<td>0,006</td>
<td>0,006</td>
<td>0,006</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Active registered: Represents all registered licensed individuals who are legally able to work under the title of the specified health profession. Individuals may or may not be currently employed in this profession.</td>
<td>2004</td>
<td>2007</td>
<td>2011</td>
<td>Percentage Change 2004–2011</td>
<td>Percentage Female</td>
<td>Percentage Male</td>
<td>Percentage Unknown</td>
<td>Per 100,000 Population</td>
</tr>
<tr>
<td>Dentists</td>
<td>8,433</td>
<td>10,556</td>
<td>20,728</td>
<td>45</td>
<td>32</td>
<td>68</td>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>Health Information Management Professionals</td>
<td>2,907</td>
<td>4,486</td>
<td>4,928</td>
<td>58</td>
<td>83</td>
<td>4</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Medical Physicists⁴</td>
<td>797</td>
<td>752</td>
<td>418</td>
<td>41</td>
<td>26</td>
<td>74</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Midwives¹</td>
<td>513</td>
<td>639</td>
<td>967</td>
<td>86</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Nurse Practitioners</td>
<td>831</td>
<td>1,393</td>
<td>2,934</td>
<td>115</td>
<td>95</td>
<td>5</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Optometrists</td>
<td>3,541</td>
<td>4,277</td>
<td>5,052</td>
<td>20</td>
<td>51</td>
<td>43</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Physicians (Excluding Residents)</td>
<td>60,682</td>
<td>63,432</td>
<td>72,503</td>
<td>20</td>
<td>36</td>
<td>63</td>
<td>&lt;1</td>
<td>209</td>
</tr>
<tr>
<td>Psychologists</td>
<td>1,487</td>
<td>1,687</td>
<td>1,821</td>
<td>15</td>
<td>88</td>
<td>28</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>Licensed Practical Nurses</td>
<td>63,443</td>
<td>66,209</td>
<td>84,685</td>
<td>30</td>
<td>92</td>
<td>0</td>
<td>0</td>
<td>244</td>
</tr>
<tr>
<td>Medical Laboratory Technologists⁴</td>
<td>11,389</td>
<td>13,673</td>
<td>12,254</td>
<td>NC</td>
<td>73</td>
<td>12</td>
<td>15</td>
<td>57</td>
</tr>
<tr>
<td>Medical Radiation Technologists⁴</td>
<td>7,153</td>
<td>7,340</td>
<td>7,574</td>
<td>NC</td>
<td>60</td>
<td>11</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>12,594</td>
<td>12,257</td>
<td>12,651</td>
<td>NC</td>
<td>91</td>
<td>6</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>28,532</td>
<td>28,433</td>
<td>32,485</td>
<td>NC</td>
<td>45</td>
<td>30</td>
<td>25</td>
<td>94</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>16,607</td>
<td>16,476</td>
<td>17,553</td>
<td>NC</td>
<td>77</td>
<td>23</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>246,571</td>
<td>257,561</td>
<td>270,724</td>
<td>53</td>
<td>93</td>
<td>7</td>
<td>0</td>
<td>781</td>
</tr>
<tr>
<td>Registered Psychiatric Nurses</td>
<td>5,121</td>
<td>5,124</td>
<td>5,254</td>
<td>3</td>
<td>70</td>
<td>22</td>
<td>0</td>
<td>495</td>
</tr>
</tbody>
</table>

Source: Canadian Institute for Health Information (2013) [https://secure.cihi.ca/estore/productSeries.htm?pc=PCC56](https://secure.cihi.ca/estore/productSeries.htm?pc=PCC56)
**Figure 11.** Estimated Population Distribution by Age and PGME Enrollment in Pediatrics, Care of the Elderly and Geriatric Medicine

Source: CAPER, 2013
**HHR Modeling in Canada**

Significant efforts have been made in relation to health workforce planning in Canada in that almost every province and territory has developed their own health workforce model or models. This has prompted the development of national health workforce modeling inventories as a framework for compiling, describing and sharing all the health workforce models developed across the country. Most recently, the Nova Scotia Health Research Foundation (NSHRF) has developed an online searchable inventory of health workforce planning models developed in Canada, which is available on the Pan-Canadian Health Human Resources Network website ([www.hhr-rhs.ca](http://www.hhr-rhs.ca)) and at hhrtoolkit.ca. Table 4 provides an overview of the health workforce models developed in Canada listed by organization/jurisdiction and indicates the presence and absence of various factors related to health workforce planning in each model.

In addition to provincial models, regional models have been developed which drill down to the level of regional health authorities. Several models have also attempted to incorporate health workforce productivity, which is particularly challenging given that there is presently no standard definition or measurement of this concept, even within professions. In Canadian HHR models, productivity is often conceptualized in terms of the amount of service provided or the amount of services being billed, over a given unit of time. There are few integrated models that look across professions or jurisdictions.

**Table 4. Overview of Canadian HHR Models**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Professions Modeled</th>
<th>Models Integrated</th>
<th>Multiple Geographies</th>
<th>Workforce Demographics</th>
<th>Workforce Productivity</th>
<th>Service Utilization</th>
<th>Pop. Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta</td>
<td>HCAs, LPNs, RNs, RNPs</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>British Columbia</td>
<td>26 professions</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>CMA</td>
<td>Physicians</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>CNA</td>
<td>RNs</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Manitoba</td>
<td>Physicians, RNs</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>27 professions</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>All</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>MRTs, Physicians, RNs</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ontario</td>
<td>NPs, Physicians, RNs, RNPs</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Quebec</td>
<td>Physicians</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>22 professions</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Slade, Tomblin Murphy & MacKenzie, 2013

---

Innovative Approaches to Health Workforce Planning

Canada has developed an online inventory or portal designed to capture all of the health related innovations in the country, including health workforce innovations and approaches, which are available through the Health Council of Canada website (www.healthcouncilcanada.ca).

Dr. Gail Tomblin Murphy and colleagues have developed an HHR planning approach which estimates HHR requirements as a function of measures of population health needs and needs-specific levels of service planned to address those needs. An example of the application of this approach to family physicians in Nova Scotia was presented. In this example, the following future health needs scenarios are considered: a) if the needs reach Canadian levels in 15 years, b) if the current observed trends continue and c) if the needs remain constant. As demonstrated in Figure 12 below, results of this approach suggest that the estimated shortage of family physicians in Nova Scotia appears to get worse in scenario b) (i.e. when the current observed trends continue) compared to the other two scenarios which, highlights the potential benefit of health promotion interventions as a mechanism for addressing HHR shortages.

Figure 12. Estimated Gap of Family Physicians in Nova Scotia under Various Health Needs Scenarios

Source: Tomblin Murphy et. al, 2008
This approach was more recently used to estimate the projected gap in Canadian registered nurses in Canada under various individual policy scenarios. As depicted in Figure 13 below, at the time the study was conducted there existed a shortage of approximately 10,000 registered nurses in Canada which would, if present trends were to continue, increase to roughly 60,000 over a fifteen-year period. This baseline scenario (no policy changes are made) is represented by the blue line; all other coloured lines represent examples of different individual policy scenarios that could be used as a strategy to address the shortage of nurses. None of the individual policy scenarios on their own appear to be sufficient to eliminate the estimated shortage.

**Figure 13.** Estimated Gap in Canadian Registered Nurses Under Various Individual Health Policy Scenarios

Source: Tomblin Murphy et al., 2012
However, combining several of these policies as a multi-faceted approach (as depicted in Figure 14) would be sufficient to eliminate the estimated shortage.

This approach is meant to serve as a communication and stakeholder engagement strategy for conceptualizing the likely outcomes of policy and planning decisions, and can be used to help guide decisions on important issues and challenges in health workforce planning.

**Figure 14.** Estimated Gap in Canadian Registered Nurses Under Cumulative Policy Scenarios

Source: Tomblin Murphy et al., (2012)
Stakeholder Involvement in Canadian Health Workforce Modeling

In the Canadian context, health workforce modeling tends to be led by the government and more specifically, the Ministries of Health. Other stakeholders who have been involved in health workforce modeling to a lesser degree include professional associations, ministries of education, regulatory bodies, regional health authorities, the Health Council of Canada, researchers, consultants and unions. In addition, forums for engagement around health workforce modeling have been established to discuss, share and exchange ideas on innovative models and approaches as well as the improvement, adoptability/scalability and applicability of existing health workforce models. Such forums include the Committee on Health Workforce (formerly Advisory Committee on Health Delivery and Human Resources), the Conference of Deputy Ministers, the Canadian Health Human Resources Network and Provincial-Territorial councils, committees, work groups and other tables that bring together funders, educators, professional associations etc. together among others.

Next Steps

The Canadian health workforce is becoming very mobile by virtue of flexibility policies that enable health workers to practice in other jurisdictions. Nevertheless, this increased mobility creates significant challenges in health workforce planning resulting in growing need to evolve from the present fragmented jurisdiction-based approaches to health workforce planning to a more integrated approach in order to support more coordinated and effective planning Canada’s health workforce.

The Pan-Canadian Health Human Resources Network is a forum that has been established as a foundation for supporting a more collaborative and integrative approach to health workforce planning. The goal of this network is to link health workforce experts, researchers and decision-makers across the country to exchange knowledge, ideas, innovations and challenges in health workforce planning and to provide tools and resources to support, coordinate and build capacity in health workforce research and decision-making. For more information visit the CHHRN website at www.hhr-rhs.ca.

Additional strategies that have been proposed for moving Canada’s health workforce planning strategies forward include:

- Conducting an evaluation of existing health workforce planning and delivery models in terms of strengths and weaknesses to help guide further improvements;
- Developing strategies for improving measurements of population needs, health workforce productivity and health outcomes;
- Developing mechanisms to support stronger partnerships between government (health, education, etc.), professional associations, regional health authorities, unions, researchers, communities, etc.;
- Developing a more patient/population-oriented approach to health workforce planning as opposed to current system-/provider-driven approaches; and,
- Developing practical, actionable outputs from health workforce modeling.
Questions and Answers

What is the logic of planning in isolation (i.e. by jurisdiction) if Canada's health workforce is highly mobile?

The reason for planning in isolation is because Canada's health workforce is largely regulated and governed by provincial and territorial jurisdiction. We are now seeing the value of working together and conversations are taking place with regards to ways in which we can facilitate a pan-Canadian approach to planning. Forums such as the Committee for Health Workforce are one such forum that brings together health workforce planners from every province and territory to discuss issues such as this.

Is Canada moving to national registration of health professions?

Canada does have a centralized application process for licensing which has led to discussions around variability in standards of practice among the provinces and territories for certain health professions and the need for a more national approach to health workforce planning including national registration.

With regards individual policy scenarios for registered nurses, which scenario do you feel is most likely to take place in 2013?

The main purpose of the graph is not to determine which scenario is most likely to take place in the future but rather to initiate discussion with regards to which strategy or strategies are the ones that should be implemented.

The likely outcomes presented in the individual policy scenarios approach for nurses appear to be pretty pessimistic; how confident are you that the proposed multi-faceted approach will actually produce positive results in terms of generating more nurses?

The solution may not necessarily be about producing more nurses but rather about better managing the ones we have. The data available in Canada is continually improving which allows health workforce planners to better predict the number of nurses we will need in the future however, the solution to the shortage issue is not necessarily about producing more nurses but rather better managing the ones we have available to us.
Health Workforce Modeling Using a Microsimulation Approach

Tim Dall, IHS

Health workforce planning and more specifically projections in the context of the United States, is extremely challenging in light of the recent implementation of the legislation on health care delivery called the “Affordable Care Act” which aims to increase affordability, improve quality and reduce the overall costs for health care for both the population and the government. Implementation of this new legislation will require a complete overhaul of the United States’ health care system which will no doubt have implications in terms of health workforce planning for the future.

In addition to the new challenges arising from the implementation of the new health care legislation, there are existing historical challenges in health workforce planning including wide variability in planning methods and data as well as assumptions, conclusions and challenges resulting from modeling in isolation as is the case with most medical specialties and health professions which further highlight the need to develop new models that more accurately assess “demand” that look beyond the existing historical health care use and delivery patterns.

Health Workforce Modeling Using a Micro-simulation Approach

With sponsorship from the federal government, state governments, professional associations, hospital systems and health plans, IHS and the Albany Center for Health Workforce Studies (CHWS) have been developing a health workforce model that uses a micro-simulation approach that would meet the following criteria:

- **Assess Impact:**
  - Address key policy or research questions.
  - Simulate implications of new policies under a wide range of scenarios.

- **Improve Accuracy:**
  - Provide the most accurate projections as possible.

- **Build Capacity:**
  - Ability to build on solid theoretical underpinnings.
  - Ability to easily maintain/update with new information.

- **Enable Dynamic Integration:**
  - Ability to develop dynamic models.
  - Ability to integrate different professions and specialties.
  - Ability to link supply and demand.

- **Allow Flexibility:**
  - Take into consideration both current and future availability of data.
  - Flexibility to project supply and demand under a wide range of scenarios reflecting uncertainties in future trends and simulate implications of new policies.

- **Facilitate Adaptability:**
  - Be user friendly for adaptation at the state or local level.

- **Enable Continued Improvement:**
  - Provide a platform for continued improvement.
Purpose of Using Micro-simulation for Workforce Modeling

Health workforce modeling is an attempt to understand and predict the decisions of health workers, institutions (e.g., governments, hospitals), and patients to forecast how supply and demand will change in response to trends in supply and demand determinants or external “shocks” to the health care system such as new policies, changes in the economy, new technology, and other factors. The purpose of workforce models is to assist decision makers by providing the data required to make informed decisions. As such, the framework for modeling and the quality of the data and recommendations provided through models is extremely important.

Micro-simulation means that modeling is done at the individual level taking into account both the individual’s characteristics and macro-level factors that might affect that individual’s decisions. For supply modeling, the micro-simulation approach attempts to simulate career decisions made by individuals and households (not cohorts), which enables planners to better determine the impact/shock of external factors on health workforce supply. There is presently no single source of comprehensive data on the health workforce in the United States, so the supply model is designed to use de-identified person-level data on health care workers available from licensure/certification databases, association census files, surveys, and upcoming data sources such as minimum workforce databases that some states are developing.

The demand model takes into consideration characteristics of the patient (e.g., demographics, socioeconomic factors, disease presence, smoking behavior, and other health risk factors) to forecast use of health services. Combined with assumptions or scenarios around care delivery, the model then forecasts demand for health workers. This approach facilitates adaptability to capture the nuances of a given population and geographic location, provides substantial flexibility to enable modeling of paradigm shifts in health care use and delivery and provides a dynamic framework that can support the integration of different professions and specialties in order to account for things like substitution.

Recent US Application of Micro-simulation Modeling

To date, there have been several publications on this microsimulation model for health workforce planning in the United States: this approach has also been used extensively by the United States:


A version of this micro-simulation model is being developed for the Health Resources and Services Administration (HRSA). This Health Workforce Simulation Model is presently being developed by IHS and Albany Center for Health Workforce Studies with Dr. Erin Fraher (consultant) which covers approximately 50 health professions and takes into account 40 health profession models simultaneously as outlined in Figure 15 below.

**Figure 15.** HRSA Health Workforce Simulation Model (HWSM): Professions and Specialties Included

<table>
<thead>
<tr>
<th>Approx. 50 Health Professions</th>
<th>40 Specialties (some by child vs adult)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians, APRNs and PAs by specialty</td>
<td>Allergy &amp; Immunology</td>
</tr>
<tr>
<td>Nurses (RN by education level, LPN)</td>
<td>Anesthesiology</td>
</tr>
<tr>
<td>Oral health professions</td>
<td>Cardiology</td>
</tr>
<tr>
<td>Non-physician clinicians</td>
<td>Colon &amp; Rectal Surgery</td>
</tr>
<tr>
<td>Pharmacy-related professions</td>
<td>Critical Care Medicine</td>
</tr>
<tr>
<td>Auditory, visual, and orthotic devices professions</td>
<td>Dermatology</td>
</tr>
<tr>
<td>Therapy-related professions</td>
<td>Emergency Medicine</td>
</tr>
<tr>
<td>Non-physician behavioral health professions</td>
<td>Endocrinology</td>
</tr>
<tr>
<td>Other technicians and technologists</td>
<td>Gastroenterology</td>
</tr>
<tr>
<td>Other health care assistants and aides</td>
<td>General &amp; Family Practice</td>
</tr>
<tr>
<td></td>
<td>General Internal Medicine</td>
</tr>
<tr>
<td></td>
<td>General Surgery</td>
</tr>
<tr>
<td></td>
<td>Geriatrics</td>
</tr>
<tr>
<td></td>
<td>Hematology &amp; Oncology</td>
</tr>
<tr>
<td></td>
<td>Infectious Diseases</td>
</tr>
<tr>
<td></td>
<td>Neonatal-Perinatal Medicine</td>
</tr>
<tr>
<td></td>
<td>Nephrology</td>
</tr>
<tr>
<td></td>
<td>Neurological Surgery</td>
</tr>
<tr>
<td></td>
<td>Neurology</td>
</tr>
<tr>
<td></td>
<td>Obstetrics &amp; Gynecology</td>
</tr>
<tr>
<td></td>
<td>Occupational Medicine</td>
</tr>
<tr>
<td></td>
<td>Ophthalmology</td>
</tr>
<tr>
<td></td>
<td>Orthopedic Surgery</td>
</tr>
<tr>
<td></td>
<td>Other Specialties</td>
</tr>
<tr>
<td></td>
<td>Other Surgical Specialties</td>
</tr>
<tr>
<td></td>
<td>Otolaryngology</td>
</tr>
<tr>
<td></td>
<td>Pathology</td>
</tr>
<tr>
<td></td>
<td>Plastic Surgery</td>
</tr>
<tr>
<td></td>
<td>Preventive Medicine</td>
</tr>
<tr>
<td></td>
<td>Psychiatry</td>
</tr>
<tr>
<td></td>
<td>Pulmonology</td>
</tr>
<tr>
<td></td>
<td>Radiation Oncology</td>
</tr>
<tr>
<td></td>
<td>Radiology</td>
</tr>
<tr>
<td></td>
<td>Rheumatology</td>
</tr>
<tr>
<td></td>
<td>Thoracic Surgery</td>
</tr>
<tr>
<td></td>
<td>Urology</td>
</tr>
<tr>
<td></td>
<td>Vascular Surgery</td>
</tr>
</tbody>
</table>

Source: Dall, 2013
Health Workforce Simulation Model: Overview

Figure 16 provides a visual overview of the Health Workforce Simulation Model and is described in greater detail in the pages that follow.

**Figure 16. Health Workforce Simulation Model: Overview**

Source: Dall, 2013
Conceptual Model for Supply

As mentioned previously, simulation models have been used as conceptual models for supply. Such models have been used to simulate likely career choices for individual clinicians as a means of providing a more specific approach to assessing supply as opposed to inventory models which simulate groups or cohorts of clinicians. In terms of dynamic modeling, agent-based models have been used to determine how the actions of one clinician affect the actions of others while other models have taken into account environmental and market factors such as clinicians’ responses to such things as changes in the economy, healthcare operating environment and changes in policy. These conceptual supply-based models also take into consideration individual level workforce activities which affect the health workforce supply such as the type of work being undertaken, the employment location, the workload and the age of retirement of the health workforce. Much of this data is obtained from the data sources listed in the box below.

Supply-Related Data Sources:

- American Community Survey (ACS)
  - Used for starting supply estimate for many non-physician specialties
- Association Master files
  - American Medical Association Master file
  - American Dental Association Master file
- HRSA Surveys
  - Nurse Practitioner Survey
- Integrated Postsecondary Education Data System (IPEDS)
- Association Websites
  - Data on number trained, age/gender distribution of new graduates, other population data for benchmarking and model validation
- State minimum data sets (for nursing)

³http://www.oecd.org/els/health-systems/8_Fraher%20presentation_FINAL_to%20OECD.pdf
**Prediction Equations Used in the Simulation Model**

The main sources of data used in the simulation model include the American Community Survey, the Medical Expenditure Panel Survey for non-physician data and master files from the American Medical Association for profession-specific data sources. In terms of approach, hierarchical linear/non-linear regression models were used to conduct individual and state level of analyses and the resulting equations were used to predict the potential hourly earnings (using data on average earning of employed people in the same profession, geographic area and those with similar personal characteristics) as well as the hours worked, and the probability of actively working in the field and separation rates (using data on age group, gender, unemployment rate, and potential hourly earnings). An example of an hours worked regression model using data from the American Community Survey is provided in Table 5.
Table 5. Hours Worked Regressions from the American Community Survey

<table>
<thead>
<tr>
<th>SOC Title</th>
<th>Intercept</th>
<th>Unemployed</th>
<th>35-44</th>
<th>55-59</th>
<th>60-64</th>
<th>65-69</th>
<th>70-74</th>
<th>Male</th>
<th>Year</th>
<th>Wage</th>
<th>Wage^2</th>
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</thead>
<tbody>
<tr>
<td>Audiologists</td>
<td>37.061</td>
<td>-0.132</td>
<td>2.505</td>
<td>-2.456</td>
<td>0.008</td>
<td>2.415</td>
<td>-2.633</td>
<td>-5.714</td>
<td>7.281</td>
<td>-1.103</td>
<td>1.427</td>
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<tr>
<td>Chiropractors</td>
<td>39.462</td>
<td>-0.971</td>
<td>5.937</td>
<td>-1.073</td>
<td>-3.697</td>
<td>-1.656</td>
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<td>-14.423</td>
<td>5.336</td>
<td>1.878</td>
<td>0.465</td>
</tr>
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<td>Dental Assistants</td>
<td>34.230</td>
<td>-0.145</td>
<td>0.457</td>
<td>-0.249</td>
<td>-1.521</td>
<td>-2.065</td>
<td>-6.736</td>
<td>-13.217</td>
<td>0.899</td>
<td>-0.070</td>
<td>8.822</td>
</tr>
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<td>Dental Hygienists</td>
<td>30.165</td>
<td>0.008</td>
<td>1.567</td>
<td>0.018</td>
<td>-0.539</td>
<td>-2.829</td>
<td>-4.828</td>
<td>-7.913</td>
<td>4.969</td>
<td>0.201</td>
<td>0.911</td>
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<td>Dentists</td>
<td>37.904</td>
<td>0.021</td>
<td>0.483</td>
<td>0.632</td>
<td>-1.728</td>
<td>-4.401</td>
<td>-8.496</td>
<td>-11.085</td>
<td>3.914</td>
<td>-0.339</td>
<td>0.501</td>
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<td>Health Technologists and Technicians, All Other</td>
<td>38.615</td>
<td>-0.148</td>
<td>2.568</td>
<td>-0.043</td>
<td>-0.346</td>
<td>-3.695</td>
<td>-7.549</td>
<td>-10.220</td>
<td>4.188</td>
<td>0.145</td>
<td>0.175</td>
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<td>Home Health Aides</td>
<td>35.934</td>
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<td>3.395</td>
<td>-0.609</td>
<td>-0.217</td>
<td>-1.736</td>
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<td>Medical and Clinical Laboratory Technicians</td>
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<td>-0.467</td>
<td>0.151</td>
<td>-1.661</td>
<td>-5.244</td>
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<td>2.291</td>
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<td>-0.878</td>
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<td>-3.738</td>
<td>-8.634</td>
<td>-10.087</td>
<td>1.439</td>
<td>0.000</td>
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<td>-1.593</td>
<td>-1.461</td>
<td>0.923</td>
<td>-2.319</td>
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<td>-12.864</td>
<td>6.912</td>
<td>0.220</td>
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<td>Occupational Therapy Aides</td>
<td>35.753</td>
<td>0.658</td>
<td>2.070</td>
<td>0.973</td>
<td>-0.350</td>
<td>-3.462</td>
<td>-5.222</td>
<td>-5.222</td>
<td>0.383</td>
<td>0.248</td>
<td>1.764</td>
</tr>
<tr>
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<td>35.753</td>
<td>0.658</td>
<td>2.070</td>
<td>0.973</td>
<td>-0.350</td>
<td>-3.462</td>
<td>-5.222</td>
<td>-5.222</td>
<td>0.383</td>
<td>0.248</td>
<td>1.764</td>
</tr>
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<td>Opticians, Dispensing</td>
<td>37.181</td>
<td>0.050</td>
<td>-3.130</td>
<td>-0.849</td>
<td>0.342</td>
<td>-2.268</td>
<td>-4.673</td>
<td>-8.025</td>
<td>3.876</td>
<td>0.008</td>
<td>1.917</td>
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<td>36.815</td>
<td>-1.209</td>
<td>7.369</td>
<td>0.470</td>
<td>0.863</td>
<td>-6.602</td>
<td>-10.826</td>
<td>-1.824</td>
<td>-0.670</td>
<td>0.000</td>
<td>2.096</td>
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<td>Pharmacists</td>
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<td>0.059</td>
<td>-3.622</td>
<td>-1.204</td>
<td>-0.265</td>
<td>-2.292</td>
<td>-9.272</td>
<td>-13.329</td>
<td>5.019</td>
<td>0.565</td>
<td>1.701</td>
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<td>Pharmacy Aides</td>
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<td>1.053</td>
<td>-9.789</td>
<td>-2.547</td>
<td>0.851</td>
<td>-5.780</td>
<td>-11.292</td>
<td>-10.975</td>
<td>3.371</td>
<td>0.000</td>
<td>1.344</td>
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<td>Physical Therapist Aides</td>
<td>34.595</td>
<td>-0.112</td>
<td>-2.927</td>
<td>-0.622</td>
<td>1.619</td>
<td>0.562</td>
<td>-7.020</td>
<td>-2.532</td>
<td>2.520</td>
<td>0.061</td>
<td>0.485</td>
</tr>
<tr>
<td>Physical Therapist Assistants</td>
<td>34.595</td>
<td>-0.112</td>
<td>-2.927</td>
<td>-0.622</td>
<td>1.619</td>
<td>0.562</td>
<td>-7.020</td>
<td>-2.532</td>
<td>2.520</td>
<td>0.061</td>
<td>0.485</td>
</tr>
<tr>
<td>Physical Therapists</td>
<td>37.462</td>
<td>-0.209</td>
<td>1.033</td>
<td>2.200</td>
<td>-0.787</td>
<td>-2.000</td>
<td>-8.579</td>
<td>-12.627</td>
<td>7.117</td>
<td>-0.024</td>
<td>8.294</td>
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<td>Physician Assistants</td>
<td>40.645</td>
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<td>-0.267</td>
<td>-0.903</td>
<td>-0.804</td>
<td>-4.079</td>
<td>-12.602</td>
<td>-20.081</td>
<td>5.613</td>
<td>0.772</td>
<td>3.377</td>
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<td>Podiatrists</td>
<td>43.153</td>
<td>-0.992</td>
<td>5.467</td>
<td>2.140</td>
<td>1.615</td>
<td>-7.286</td>
<td>-12.144</td>
<td>-10.046</td>
<td>11.500</td>
<td>2.522</td>
<td>0.655</td>
</tr>
<tr>
<td>Psychiatrists</td>
<td>36.686</td>
<td>0.170</td>
<td>-2.621</td>
<td>-2.192</td>
<td>-0.325</td>
<td>-3.037</td>
<td>-10.390</td>
<td>-15.287</td>
<td>6.593</td>
<td>-0.242</td>
<td>1.426</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>36.755</td>
<td>0.208</td>
<td>-1.627</td>
<td>-1.254</td>
<td>-0.090</td>
<td>-1.815</td>
<td>-7.560</td>
<td>-13.931</td>
<td>3.946</td>
<td>0.070</td>
<td>0.036</td>
</tr>
<tr>
<td>Respiratory Therapists</td>
<td>37.716</td>
<td>0.277</td>
<td>-1.841</td>
<td>-0.524</td>
<td>-0.290</td>
<td>-0.562</td>
<td>-6.313</td>
<td>-9.083</td>
<td>3.163</td>
<td>0.170</td>
<td>0.039</td>
</tr>
<tr>
<td>Social Workers</td>
<td>39.068</td>
<td>0.129</td>
<td>-1.260</td>
<td>-0.956</td>
<td>-0.517</td>
<td>-2.407</td>
<td>-7.332</td>
<td>-8.325</td>
<td>2.876</td>
<td>-0.078</td>
<td>0.044</td>
</tr>
<tr>
<td>Speech-Language Pathologists</td>
<td>35.456</td>
<td>0.574</td>
<td>-3.110</td>
<td>-3.824</td>
<td>0.131</td>
<td>-3.117</td>
<td>-7.400</td>
<td>-16.858</td>
<td>4.314</td>
<td>-0.022</td>
<td>0.999</td>
</tr>
</tbody>
</table>

Source: Dall, 2013
**Conceptual Model for Demand**

The conceptual model for demand uses population characteristics to identify healthcare workload drivers and the services required in the provision of care. The population characteristics used in these models include a wide range of data such as demographics, health status, clinical information and insurance information which are obtained from a combination of data sources including the Behavioral Risk Factor Surveillance System (BRFSS), American Community Survey (ACS) and the National Nursing Home Survey (NNHS).

A representative sample of the current and future population is taken from population characteristics such as demographics, lifestyle, socioeconomic and chronic conditions such as obesity and an individual is then selected from this representative sample to be used for the purpose of demand modeling. Figure 17 demonstrates this process.

**Figure 17.** Developed Representative Sample of Current and Future Population to Model Demand

Source: Dall, 2013
A model is then developed to determine population growth and disease prevalence growth which in turn is used to determine healthcare utilization. An example is provided in Table 6 below.

**Table 6. Example of Healthcare Utilization for Cardiologist and Cardiology-Related Services**

| Parameter | Hispanic | Non-Hispanic black | Non-Hispanic white | Non-Hispanic other race | Male | 18-34 years | 25-44 years | 45-64 years | 65-74 years | 75+ years | Smoker | Hypertension | Coronary heart disease | History of heart attack | History of stroke | Diabetes | Arthritis | Asthma | History of cancer | Insured | Medicaid | <$10,000 | $10,000 to <$20,000 | $20,000 to <$30,000 | $30,000 to <$50,000 | $50,000 to <$75,000 | $75,000 or higher | No college | High school | College | Metro area |
|-----------|----------|--------------------|--------------------|-------------------------|------|-------------|-------------|-------------|-------------|-----------|--------|----------------|----------------------|----------------------|--------------|----------|--------|----------------|--------|----------|------------|------------------|------------------|-----------------|------------------|------------------|---------------|------------|----------|
| Office Visits | 0.78** | 0.77** | 0.92** | 1.02** | 0.96** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** | 0.98** |
| Outpatient Visits | 0.67** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** | 0.75** |
| Emergency Visits | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** | 1.02** |
| Hospitalization | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** | 0.86** |

1 Rate ratios from Poisson regression analysis using 2006-2010 MEPS level.
2 Odds ratios from logistic regression analysis using 2006-2010 MEPS. Statistically significant at the 0.05 (*) or 0.01 (**) level.

Source: Dall, 2013

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Health care utilization patterns from the conceptual model for demand is then translated into full time equivalent (FTE) providers. For example, 1,000 ambulatory visits to a pediatrician equates to approximately 0.23 FTE pediatrician; 1,000 hospital rounds equates to approximately 0.48 FTE pediatrician. The data sources used in the conceptual model for demand are listed in the box below.

**Data Sources:**
- Occupations/specialty specific surveys and studies
- National organizations (e.g. Medical Group Management Association’s Physician Compensation and Production Survey)
- National ratios (e.g. home health aides to home health visits)
- Reported statistics (e.g. nurse staffing ratios in nursing homes)
Modeling Interaction of Supply and Demand

Finally, models have also been used to look at the interaction of supply and demand factors to address such questions as follows:

- How does compensation change in response to excess/shortage of supply capacity?
- How do changes in compensation levels affect supply and demand?
- How does local adequacy of supply impact labour force participation (hours, retirement)?
- How do geographic differences in job opportunities influence the geographic dispersion of new health workforce graduates?
- How do healthcare facilities (e.g. hospitals) change the way that care is delivered in response to excess/shortage of supply capacity?

Scenarios

The goal of the simulation models is to allow the necessary flexibility required to develop scenarios based on population characteristics and to determine their potential impact on the health workforce. Such scenarios include:

- Paradigm Shifts in Care Delivery: For example, accountable care organizations, patient centered medical home model, changes in technology and team based care.
- New Policies surrounding health care reform and expanded scope of practice.
- Interventions for specific subsets of population such as disease management programs for diabetes.
- Economic Fluctuations.
- Changing demographics.
- Initial modeling focuses at the state level, but preliminary model has been used at the sub-state level.

In 1991, the National Academy of Sciences conducted an assessment of micro-simulation models used in social policy analysis in order to develop a set of standards for assessment agencies in terms of designing future micro-simulation models.
The recommendations include:

- Setting clear goals and priorities for the model.
- Enabling flexibility to facilitate inclusion and deletion of self-contained modules while allowing documentation and validation that enable assessment of uncertainty through sensitivity analysis and application of sample reuse techniques to measure variance.
- Facilitating linkages with other models by providing points of entry and exit.
- Increasing technical and operational efficiency.
- Increasing accessibility to analyst and other novice users.

**Recent updates**

By developing strategies to better understand the past, the United States is now able to conduct more accurate projections for the future. Indeed, enormous improvements have been made in terms of data inputs and research, particularly with respect to retirement patterns and factors that influence supply.

**Next Steps**

“We now have data and technology that we never had before which can be used in our planning”  Tim Dall, IHS.

The following points have been proposed as next steps in the application of micro-simulation models in the United States:

- New projections on practitioners with nurse practitioners and physician assistants
- Clinical workforce projections for 42 clinical areas which integrate associated roles such as the nurse anesthetist underway.
- Investigating how to develop realistic scenarios
- Much more research into the interaction of supply and demand
- Addressing the distribution issues and how best to conduct the analysis to present these issues to the public and policy makers when national numbers on the health workforce are favorable.
- Integrating a feedback loop in the simulation model that will highlight key factors to review on an ongoing basis.
Questions and Answers

How do micro-simulation models account for individual and contextual variables in the context of Nurse Practitioners and Physician Assistants that was described earlier?

HRSA conducted a sample survey of Nurse Practitioners which requested basic information on the type of work they are doing and what specialties they are working in. Similarly, information is being gathered for Physician Assistants from the National Credentialing Commission’s minimum dataset which Physician Assistants are required to complete in order to maintain their credentials to practice. Data from both of these sources capture many individual contextual variables that can be used in the micro-simulation models. In the United States, the number of Nurse Practitioners and Physician Assistants are approaching 20,000 per year and therefore the physician workforce is not the most dominant sector to consider when doing projections. In fact, health workforce projections differ considerably when comparing projection models for physicians in isolation compared to the dynamic models that integrate Nurse Practitioners and Physician Assistants. There is a considerable difference in terms of the projections generated by these two different approaches in that one suggests an undersupply while the other suggests that there is an adequate supply respectively.

Were there any challenges and/or barriers regarding privacy issues during data collection for the simulation models?

All data used in the simulation models are obtained from publically available sources, or proprietary data sources such as the American Medical Association. De-identified data are used for modeling, and reporting is only done in aggregate form to respect privacy and confidentiality. However, this is certainly a critical issue to consider when building national datasets that will be used to support health workforce research such.
Health Workforce Planning Techniques and the Policy Context

Mark Cormack, Health Workforce Australia

In the Australian context, health workforce planning is about innovation and reform and directed toward providing support of this activity. The key objectives for Health Workforce Australia is to build capacity by increasing access to the right health care professionals in a manner that is both efficient and timely, to boost health workforce productivity by maximizing their use and to improve both geographical and professional distribution of the health workforce to ensure that the right mix of health care professionals are available where needed. Health Workforce Australia aims to achieve these objectives by developing a sound evidence base to inform national policy and reform, devising policy programs that facilitate reform in training, workforce, workplace and international recruitment and retention and by working across jurisdictions, sectors, health and higher education providers, professions and stakeholder groups; all of which are informed through evidence.

National Projections of Workforce Numbers and Modeling

Health Workforce 2025 is a publication released by Health Workforce Australia that provides national projections of the health workforce numbers as well as models to determine the effects of different policy scenarios for a range of health professions including Doctors, Nurses, Midwives (Volume 1 & 2) and medical specialties (Volume 3) with other disciplines to follow. The purpose of these projections is to quantify the current health workforce and provide impetus and consensus for reform through the provision of evidence, impact assessments of various policy options and to demonstrate a need for action that can be practically achieved through collaboration. Details regarding the publication are provided below.

**Health Workforce 2025**

- National projections of workforce numbers and modelling the effects of different policy scenarios for a range of professions:
  - Health Workforce 2025: Doctors, Nurses and Midwives (volumes 1 and 2) released by ScoH on 27 April 2012
  - Medical specialties in volume 3 (released at SCoH on 9 November 2012)
Methodology

Three high level activities were involved in developing the national projections and models: the approach, the data sources and scenario modeling. Australia has adopted a national approach to health workforce planning through Health Workforce Australia, whose responsibilities are to conduct health workforce projections and provide the necessary infrastructure of divergent tools to help the states develop their own health workforce plans and models both at state and regional levels. Access to national datasets is therefore crucial to the work that HWA does and this dataset is comprised of data from workforce surveys, settings, principals, place and practice. National registration also plays a key role to the work of HWA in terms of providing the resources necessary to conduct longitudinal analysis of the workforce. To date, health workforce planning has focused on the medical workforce and medical specialties however, projections of other disciplines will follow in the near future. Similarly, scenario modeling was developed at the national and state levels and focuses on various policy options including productivity, workforce retention, higher education and training, health service demand and supply of professionals including self-sufficiency, graduate numbers and immigration. Given the national approach, much of the focus is around policy wavers around training with a link to innovation reform in terms of providing workforce planning as a tool for assessing workforce benefits of innovations through simulation modeling and then assessing the barriers and issues of simulation through real world test. These scenario simulations are used to help identify the policy levers available, higher education and training needed to address health workforce issues and to determine self-sufficiencies as well.

Findings

According to the Health Workforce 2025 publication described earlier, health workforce projections and modeling scenarios for doctors suggest that the supply is stable however maldistribution of doctors across Australia continues to be an issue. In addition, projection models suggests that by 2016, there will be a significant gap between the demand of graduate medical schools and community requirements which is creating a pool of frustrated graduates waiting to get into medical training and the dependence on immigration is also creating ongoing risk. With respect to nurses, short term projections suggest a stable workforce however long-term projections suggest a significant shortfall (109,490 by 2025) driven by changes in retirement patterns, poor retention rates and population health trends. The mental health and geriatrics are at particular risk of shortage when it comes to nursing.

In terms of training, there are presently insufficient internships for newly graduating doctors and insufficient employment opportunities for newly graduated nurses. Furthermore, projection models suggest that by 2016 there will be insufficient specialist training places for graduates. It should be noted however that projected training requirements are dependent on policy choices made in other areas and it is recommended that training be significantly lowered through workforce innovation and reform and to increase training efficiency while maintaining Australia’s high-quality training standards.
As mentioned above, the geographic distribution of the Australia’s health workforce remains a significant concern, particularly with respect to doctors. Current policy settings are not capable of achieving desired shifts in distribution however; actions must be made to ensure that the increase in the supply of doctors is properly distributed where they are most needed. At present, Australia’s health workforce is highly dependent on immigration. It is suggested that changes to temporary migration may significantly impact the short-term need for health professionals by managing short-term fluctuations in supply. In terms of improving self-sufficiency, measures will require concurrent additional effort in training and workforce reform.

**Conclusion**

In conclusion, Health Workforce Australia suggests that large-scale workforce reform is necessary to meet Australia’s future healthcare needs and that meeting these needs will require collective efforts across governments, health sectors and the education and training sectors using a multi-pronged approach which takes into consideration supply, education, training, immigration, productivity, demand, role-redesign and workforce capacity. Furthermore, continuous improvement of available data is required to enable the best possible workforce planning.

**Australia’s Health Workforce Planning Model**

Health Workforce Australia utilizes a mathematical simulation approach and stock and flow technique for their health workforce modeling which takes into account people entering the existing workforce (flows) which periodically affect the initial number in the workforce (stock) as depicted in Figure 19 and in greater detail in Figure 20.

![Figure 19. Simple Workforce Planning Model](image)

Source: Cormack & Crettenden, 2013
Figure 20. Detailed Workforce Planning Model

Source: Cormack & Crettenden, 2013
Factors and Variables Used in the Models

- **Age and Gender:**
  The HWA workforce planning model takes into consideration both the age and gender of the workforce which are split into 5-year age and gender cohorts.

- **Working Hours:**
  The working hours of each cohort is determined and changed as the workforce ages to capture the different working hours of the different age and gender groups. New entrants to the workforce take on the characteristics of the existing workforce at the age they enter.

- **Exit Rates:**
  Exit rates from the workforce are calculated from the “exits” from each age cohort seen on progressive surveys however; intention to retire is **not** used.

- **Headcount vs. Full Time Equivalents (FTE):**
  The Health Workforce 2025 reports the outputs in terms of headcounts to capture the actual number of people required. Behind the headcount sits a FTE that changes over the projection period as the gender and age profile of the workforce changes.

Demand Modeling

The demand for health services can be determined using a number of different approaches including determining the changes in expenditures over time, the changes in service utilization over time and the changes in the size and age/sex profile of the population. The demand model described in the Health Workforce 2025 report utilizes service utilization rates for each population age and sex cohort and these rates are then applied to the projected population for each of the population age and sex cohorts, to derive the rate of change in demand over the projected period. Figure 21 demonstrates the application of the demand based models to determine hospital utilization showing that hospital separations have increased over the last 4 years, from 7.9m in 2006-07 to 8.8m in 2009-10 and an average annual growth of 3.9%.

**Figure 21. Hospital Separations**

Source: Cormack & Crettenden, 2013
Forecasting Method

National public and private hospital data by DRG’s for 2006-2009 were used in the health workforce projections and the DRG’s were mapped to ESRG to SRG’s (402) DRG to (134) ESRG to (48) SRG’ s and forecasts for the years 2018-19 and 2025-26 were then generated for each age group (0-14, 15-44, 45-69, 70-84 & 85+), sex, esrg- diagnosis and stay type (same-day, multi-day, non-tert & multi-day tert). Length of Stay (LOS) is truncated at 90 days to decrease the effect of outliers on average length of stay calculations.

Figure 22 demonstrates overall sector utilization rates using hospital separations data and medicare occasions of service data based on a weighting factor derived from AIHW labour force survey data for public and private workforce hours.

**Figure 22. Medical- Overall Sector Utilization Rate**

Source: Cormack & Crettenden, 2013
**Scenario and Sensitivity Analysis**

The HWA conducted a scenario and sensitivity analysis to better understand which variables and assumptions have the most significant impact on the overall modeling results. Alternative scenarios were included as a means of exploring the potential implications alternative futures and to assess the sensitivity of the model to various input parameters. The sensitivity analysis is achieved by altering a single input parameter in the model while the flow-through effect is measured by assessing the impact relative to the comparison scenario.

**Workforce Projection Scenarios**

The scenarios used in the HWA health workforce projection models include:

- **Comparison Scenario**: a neutral (no change) scenario in which the current policy settings remained fixed into the future.
- **Service and Workforce Reform Scenario**: the demand for a given specialty is reduced through reforms involving changes skill mix, technological change or other reforms, at a rate of approximately, 1.4 percentage points per annum
- **Registrar Work Value Scenario**: the work contribution of senior registrars is included to indicate the relative reliance of different specialties on this workforce
- **Medium Self-Sufficiency Scenario**: immigration is reduced by 50% by 2025 to show the relative reliance of specialties on international medical graduates.
- **Capped Working Hours Scenario**: designed to show the impact of a reduction in working hours to 50 hours maximum per week

**Geographic Modeling**

The HWA undertook a modeling exercise to illustrate the distributional impact of changes to health workforce density across the remotest regions of Australia during the planning period up to and including the projected year 2025. This particular geographic modeling exercise focused exclusively on the physician workforce for this sector was recognized as having the greatest disparity in distribution in Australia. The scenarios used in this model include an expansionary scenario, a contractionary scenario and a scenario using the existing baseline projections with improvements in distribution of regional and remote areas of Australia. Each of these scenarios is described in greater detail in the pages that follow.
Scenario 1: Expansionary Scenario

The expansionary scenario considers the distributional impact by which the physician workforce ratio for major cities is achieved in all other remote regions by 2025. In order to attain this goal, a growth in the aggregate medial workforce beyond the projected national requirements is required. As demonstrated in Table 7, the impact of this scenario would result in an aggregate increase in the current demand for doctors from 109,205 to 123,836 as well as a relatively higher annual growth rate (i.e. 7.73% from the 2009 baseline) in the very remote areas of Australia required to attain this density.

**Table 7. Geographical Modeling- Expansionary Scenario**

<table>
<thead>
<tr>
<th>Doctors</th>
<th>Major Cities of Australia</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Headcount</td>
<td>Density per 100,000 population</td>
<td>Change from 2009</td>
<td>Annual growth rate from the 2009 baseline</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>---------------------------------</td>
<td>------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Total Australia</td>
<td>123,836</td>
<td>460.12</td>
<td>51,702</td>
<td>3.44%</td>
</tr>
<tr>
<td>Major Cities of Australia</td>
<td>86,153</td>
<td>460.12</td>
<td>29,246</td>
<td>2.63%</td>
</tr>
<tr>
<td>Inner Regional Australia</td>
<td>24,385</td>
<td>460.12</td>
<td>15,302</td>
<td>6.37%</td>
</tr>
<tr>
<td>Outer Regional Australia</td>
<td>10,754</td>
<td>460.12</td>
<td>6,949</td>
<td>6.71%</td>
</tr>
<tr>
<td>Remote Australia</td>
<td>1,626</td>
<td>460.12</td>
<td>898</td>
<td>5.15%</td>
</tr>
<tr>
<td>Very Remote Australia</td>
<td>919</td>
<td>460.12</td>
<td>640</td>
<td>7.73%</td>
</tr>
</tbody>
</table>

Number of doctors by Major cities of Australia, 2025

Source: Cormack & Crettenden, 2013
Scenario 2: Contractionary Scenario

The contractionary scenario considers the distributional impact by which the physician workforce ratio in inner regional areas is achieved in all other remote regions by 2025. This goal is attained by applying the projected density of doctors in inner regional areas in 2025 across remote areas. Unlike the previous scenario, this scenario is intended to demonstrate the effect of providing a density of doctors that is projected for 2025 for inner regional areas to the whole country which will require growth in the aggregate medical workforce that falls short of the projected national requirements. As demonstrated in Table 8, the impact of this scenario would result in a decrease in the demand for doctors in 2025 from 109,205 to 69,834.

Table 8. Geographical Modeling- Contractionary Scenario

<table>
<thead>
<tr>
<th>Doctors</th>
<th>Inner Regional Australia</th>
<th></th>
<th>Change from 2009</th>
<th>Annual growth rate from 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Headcount</td>
<td>Density per 100,000 population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Australia</td>
<td>69,834</td>
<td>259.47</td>
<td>2,300</td>
<td>-0.20%</td>
</tr>
<tr>
<td>Major Cities of Australia</td>
<td>48,583</td>
<td>259.47</td>
<td>8,324</td>
<td>-0.98%</td>
</tr>
<tr>
<td>Inner Regional Australia</td>
<td>13,751</td>
<td>259.47</td>
<td>4,668</td>
<td>2.63%</td>
</tr>
<tr>
<td>Outer Regional Australia</td>
<td>6,065</td>
<td>259.47</td>
<td>2,260</td>
<td>2.96%</td>
</tr>
<tr>
<td>Remote Australia</td>
<td>917</td>
<td>259.47</td>
<td>189</td>
<td>1.45%</td>
</tr>
<tr>
<td>Very Remote Australia</td>
<td>518</td>
<td>259.47</td>
<td>239</td>
<td>3.94%</td>
</tr>
</tbody>
</table>

Number of doctors by Inner Regional Australia, 2025

Source: Cormack & Crettenden, 2013
Scenario 3: 50% Improvement in Distribution for Regional and Remote Areas

This scenario uses existing baseline projections (i.e. overall number of projected doctors in 2025) to integrate a 50% improvement in the distribution of doctors across regional and remote areas of Australia. In other words, the overall number of projected doctors in 2025 does not change rather how the doctors are distributed across remote areas changes in that the density of doctors within major cities is reduced and reallocated across the remaining remote areas. Three levels of improvements are modeled in this scenario in terms of percent increases in the workforce ratio for regions below the average national workforce ratio as follows: a) a 10% increase, b) a 50% increase and a 100% increase where all remote areas achieve the same doctor density by 2025. As demonstrated in Table 9, the impact of a 50% improvement in the distribution of doctors from 2009 to 2025 would result in an increase in the number of doctors outside the major cities of Australia (i.e. inner, outer, remote and very remote regions of Australia) by 13,238 as well as an increase in doctors of major cities by 23,148 showing that differential growth rates provide an improvement in the distribution of doctors over time.

Table 9. Geographical Modeling- 50% Improvement of Regional and Remote Areas of Australia

<table>
<thead>
<tr>
<th>Doctors</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
</tr>
<tr>
<td></td>
<td>Headcount</td>
</tr>
<tr>
<td>Total Australia</td>
<td>109,205</td>
</tr>
<tr>
<td>Major Cities of Australia</td>
<td>86,153</td>
</tr>
<tr>
<td>Inner Regional Australia</td>
<td>13,751</td>
</tr>
<tr>
<td>Outer Regional Australia</td>
<td>5,760</td>
</tr>
<tr>
<td>Remote Australia</td>
<td>1,102</td>
</tr>
<tr>
<td>Very Remote Australia</td>
<td>422</td>
</tr>
</tbody>
</table>

50% improvement in distribution for regional and remote Australia (RA2-5) by 2025 within the existing baseline projections

Source: Cormack & Crettenden, 2013
Establishing Starting Point (Gap/Excess)

A panel of experts from the different jurisdictions, private employers and experts from selected professions were involved in determining the current position of Australia’s health workforce in terms of oversupply or undersupply. This also included an analysis of the current vacancies and wait times when relevant and appropriate. An approach involving a three point traffic light assessment scale was used in the analysis as depicted in the Figure 23.

**Figure 23.** Existing Workforce Position

The workforce dynamic indicators used in this approach were adapted from Health Workforce New Zealand’s medical discipline vulnerability ranking method and were used in the analysis as a consistent measure to provide an indication of the existing status of each health workforce. The four workforce dynamic indicators used included a) average age, b) percentage of new fellows to workforce exits, c) dependence on specialist international medical graduates and d) the length of training program. Table 10 shows the current position of the existing workforce in Australia using the three point light assessment scales described above.

**Table 10.** Health Workforce Dynamic Indicators in Australia

<table>
<thead>
<tr>
<th>Workforce Dynamic Indicators</th>
<th>Lowest Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age of existing workforce</td>
<td>&lt;45</td>
<td>45-49</td>
<td>50-54</td>
<td>55-59</td>
<td>60+</td>
<td></td>
</tr>
<tr>
<td>Percentage of new fellows to workforce exits (annual)</td>
<td>130%+</td>
<td>110%</td>
<td>&lt;130%</td>
<td>90%</td>
<td>&lt;110%</td>
<td>90%</td>
</tr>
</tbody>
</table>
| Dependence on SIMGs (migrant inflows as a percentage of all specialty inflows) | <12% | 12-24% | 25-37% | 37-49% | 50+%
| Length of training program (years) | <4 | 4 | 5 | 6 | 7+ |

Source: Cormack & Crettenden, 2013
Stakeholder Engagement in the Development of the Health Workforce 2025 Reports

The Health Workforce 2025 Reports provided much of the information describing health workforce planning in the Australian Context. These reports were commissioned by the federal and state government which focused mainly on the medical and nursing sectors of the health workforce. The consultation process began in 2011/12 which included the establishment of a governance committee and clinical advisory groups for each of the specialties modeled as well as individual meetings with key stakeholder groups as well as colleges in relation to methodology and data collection. The council of the ministers was involved throughout the process in order to report on the impact of the projection work and to provide strategies towards better national coordination of training, legislative barriers and enablers of health workforce reform as well as strategies for self-sufficiency.

Health Workforce 2025 Volumes 1 and 2:

Activities for Volumes 1 and 2 were conducted in 2 phases. The first phase involved generating baselines and developing alternative scenarios for health workforce projections for supply and demand. Stakeholders were involved in providing critical reviews of the methods, assumptions as well as the projections themselves and a series of national workshops were held which included both cross professional and profession specific. The second phase involved generating annual estimates of the number of placements required for student and trainees (for doctors) by 2025. This included presentations of revised projections and pipelining at clinical advisory groups consisting of representatives from the medical, nursing and midwifery sectors specifically as well as a few overarching representatives (e.g. nursing/midwifery).

Health Workforce 2025 Volume 3:

Work for volume 3 involved individual meetings with all thirteen medical colleges to discuss baseline projections and scenario results. Furthermore, every specialty was sent a final draft chapter which included a section that highlighted issues in terms of future supply and demand that may impact the workforce and meetings were also held with every jurisdiction to present existing workforce position and the projection results.

Policy Responses to Challenges Identified in Health Workforce 2025 Report

The Health Workforce 2025 reports identified a range of policy challenges that need to be addressed in order to establish a health workforce that meets the needs of the Australian population. These challenges include:

- Barriers to workforce reform and innovation.
- Maldistribution of the workforce (geographic and across professions/specialties).
- Efficiency and effectiveness of the training system.
- Policy approach to self-sufficiency.
In collaboration with the Australian Ministers’ Advisory Council, Health Workforce Australia prepared policy proposals for the Standing Council of Health to consider which were accepted on November 9th 2012 thereby providing the necessary foundations for implementing a national coordinated approach to addressing the key challenges of which Health Workforce Australia would play a central role in terms of delivering and coordinating this approach. In collaboration with State and Territories through AHMAC, Health Workforce Australia are working on progressing the following five policy proposals and is described in greater detail in the section that follows:

- Improved productivity through workforce innovation and reform.
- Improved mechanisms for the provision of efficient training.
- Addressing barriers and enablers to workforce reform.
- Streamlining clinical training funding.
- Considerations for achieving national self-sufficiency.

**Improved Productivity Through Workforce Innovation and Reform**

There is a need to develop evidence to inform a comprehensive national approach in response to the nursing imbalance projections and to provide support towards an ongoing implementation program that will facilitate adoption of workforce reform through national coordination of workforce redesign and change management.

**Improved Mechanisms for Provision of Efficient Training**

Such improvements would include:

- Aligning training and workforce needs by developing rolling national training plans or strategies for the major health professions which are provided annually to the Standing Council of Health and the Standing Council on Tertiary Education, Skills and Employment to improve alignment.
- Establishing the National Medical Training Advisory Network to provide advice on improved coordination of medical training.
- Driving efficient and effective training by reducing unnecessary variation in professional clinical training requirements in universities and higher education through the adoption of national core clinical training levels.

**Addressing Barriers and Enablers to Workforce Reform**

Such strategies would involve an analysis of:

- Health workforce industrial arrangements/agreements to identify opportunities for reform and to identify a common set of goals, principles and conditions within industrial agreements which could be used to support reform.
- Commonwealth, state and territory legislation to identify factors that support/hinder the flexible use of the workforce and identify opportunities to harmonize legislation.
Streamlining Clinical Training Funding

Such activities would include:
- Developing nationally consistent approaches to the funding of clinical training in public, non-government and private sectors supported by the establishment of efficient training pathways.
- Streamlining existing funding within the context of activity based funding for teaching and training in public hospitals.

Considerations for Achieving National Self-Sufficiency

Such considerations will involve an analysis of the implications of differing levels of self-sufficiency in the health workforce and the interaction with other policy priorities including workforce distribution and training reform.

Next Steps

In terms of next steps, Health workforce Australia is working on improving demand methods, particularly with respect to regional analysis and on developing more sophisticated costing scenario analyses. They are also interested in developing methods for assisting with scaling analysis of innovation studies. They also hope to improve coordination of medical training through a new National Medical Training Advisory Network and increase the utilization the health workforce survey to conduct longitudinal analyses and adopt elements from the Australian Health Practitioner Regulation Agency AHPRA survey to identify sub-populations for further surveying.

In closing, it is important to understand workforce modeling as a way to initiate conversation with decision makers without getting into politics. It is important to build trust and to work with stakeholders at the outset and explain the limitations of data sets before presenting results.

Questions and Answers

What is the percentage of students affected by vocational training in Australia?

Vocational training is built into our health workforce model but in Australia there are about 2000 in the post-intern/pre vocational training pool who are looking for a post but do not find one. As a result, there is a large pool of people who are also looking for alternative routes. This is a long-term challenge for health workforce planning in Australia.

What is the rationale for using qualitative research in assessing unmet demand in your planning models?

At present, we have not yet developed a strategy for measuring unmet demand quantitatively however, we capture qualitative data on issues like access to certain health professionals through key informant interviews by asking such questions as “Did you try to access a particular health profession in the last 12 months?”. 
OPEN DISCUSSION: North American and Australian Experiences

**Panelists:**
Adrian MacKenzie, Dalhousie University  
Mark Cormack, HWA  
Steve Slade, AFMC  
Tim Dall, IHS

**Facilitator:**  
Graham Willis, CfWI

**Major Themes:**

- The importance of confidence and trust in our ability as health workforce planners.  
- What makes a good or effective policy?  
- How to model complex systems that change over time?

**Questions and Answers**

**Given everything that was discussed today: what do you feel is your top research challenge?**

**Mark (AU):** Being able to develop tools to analyze the potential impact of reform and modeling complex factors such as the interaction between different health professions rather than in silos.

**Tim (US):** Although we have a wealth of data, our challenge really results from the recent implementation of the new health care legislation and its impact on health care delivery such as obtaining information that provides direction for redesign and developing strategies for assessing how it affects the new health care system. Another challenge is how to obtain data and develop models that include a whole range of non-clinical physicians and developing strategies for capturing data on the delivery of services provided by non-physicians such as nurse practitioners and physician assistants as they are presently captured under physician codes. Also, obtaining more information on outcomes in terms of quality and costs and how to go about building them into our equations.

**Steve (CA):** One of the top research challenges is developing effective strategies that increase recruitment and retention of health care professionals in rural and remote areas of Canada which include developing incentives (e.g. a plan to forgive student loans for rural physicians) and developing more sophisticated models to better measure and evaluate the outcomes of these incentives.

**Adrian (CA):** Effective knowledge translation. We work with the government to help develop models and then train staff to use the model but the knowledge is lost when these people go on to new positions or retire. Therefore, developing a strategy to effectively translate or even institutionalize this kind of capacity would be great.
According to the experiences presented here, it appears that these health workforces are quite vulnerable to immigration. What would happen if immigration ceased altogether?

**Steve (CA):** We are at a watershed moment with respect to internationally educated health professionals as we have established an elaborate infrastructure that recognizes foreign credentials for medical graduates. However, residency positions are often not offered. We also have to be cognizant of the impact of recruitment efforts on the source country and really look at issues like ethical recruitment and the role of IEHP in meeting population health needs.

**Adrian (CA):** Canada also has a significant reliance on foreign trained nurses which could be dramatically reduced or even eliminated if we changed the way Canadian nurses are managed.

**Tim (US):** The United States is also trying to do a better job at self-sufficiency and thinking globally and the introduction of new technology like telemedicine will also play an important role in that. We do not yet have data on the impact of telemedicine at present opens up questions and challenges in terms of how to account for supply of psychologist if they are consulting across the country. We need to do a better global coordination.

**What are you doing to better understand new care delivery models?**

**Tim (US):** In terms of workforce modeling in the United States we look at how many bodies we need to train and what is the prevalence of disease however we would like to better understand how to build a workforce that meet health workforce challenges.

**Adrian (CA):** There is a lot that needs to be done but one of the pieces that are missing in health workforce modeling in Canada is the systematic collection of outcomes. For example, we do not have data on the functional status of patient’s pre and post discharge nor do we have data on what improvements in health have resulted from care. Implementing procedures for collecting health status data longitudinally would go a long way in terms of better understanding outcomes of health care delivery which would strengthen our models considerably.

**Steve (CA):** There have been numerous efforts to refashion primary care delivery models. If we want to have data to evaluate the impact of these new models, we may want to look at building standardized outcome measurement techniques into funding agreements.

**Given the prevalence of a highly mobile workforce, particularly with respect to the United States where you do not need to get a license to work in a neighboring state, how does affect your ability to accurately estimate your current supply?**

**Tim (US):** The probability of a given person's mobility is largely dependent on an individual’s characteristics and these characteristics are taken into consideration in the microsimulation models used in the United States. The data collected include such factors as where the health professional works and lives. However, one of the biggest drivers of mobility are general population shifts which are independent of a given clinician.
Given the importance of patient experiences of care, how do we involve patients in designing health workforce delivery that best meet their needs?

Steve (CA): Given that a lot of the modeling work in Canada is driven by the government, we may see more patient focused work if there is engagement with the government.

Tim (US): Perhaps rather than include patients in the design or decision making process one could survey patients to understand their patterns and these findings could then be incorporated in the design.

There are approximately 600,000 unpaid health care workers in Australia however; these individuals are often not considered in modeling. How could we go about including them?

Mark (AU): Unfortunately, we do not have enough information about these individuals to be able to separate them from Australia’s health workforce.

Steve (CA): This data would not be integrated into health workforce models in Canada as we are only able to operate with the levers we are able to control to some extent and this is not possible with volunteer work nor can we begin to conceive the scope of work that can be done by volunteers. One would need to flesh out this data first before we can consider how we might integrate them into our models.

When are we going to start looking at competencies and skills as factors in modeling?

Adrian (CA): We need to look beyond the “silo” or profession specific approach to modeling and focus on what patients need from the health care system and then determine which parts of the health workforce are able to address these needs.

Tim (US): The United States health care redesign efforts focus more on the competencies and skills rather than specific professions.

Adrian (CA): In the Canadian context, we have begun looking at competencies particularly those being developed at the undergraduate and graduate levels so that we may begin redesigning educational programs so that they are more closely aligned with creating the competencies that graduates will need to address the needs of the population they serve.
Conference Evaluation of the Technical Skills Workshop

The following is an evaluation of the Technical Skills Workshop which summarizes data and feedback from participants who have attended the workshop and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 24. Participant Ratings: Quality of Discussions**

![Bar chart showing participant ratings for quality of discussions.]

**Figure 25. Participant Ratings: Quality of Planning Tools and Techniques Presented**

![Bar chart showing participant ratings for quality of planning tools and techniques.]

**Figure 26. Participant Feedback: Planning Techniques Presented Were Appropriate to the Policy and Political Context**

![Bar chart showing participant feedback on the appropriateness of planning techniques.]

Figure 27. Participant Feedback: Concluding Discussion where Member Countries Shared Interesting Pieces of Innovative Work was Interesting and Informative

![Bar Chart showing participant feedback ratings](chart1.png)

Figure 28. Participant Ratings: Overall Quality of the Technical Skills Workshop

![Bar Chart showing participant ratings](chart2.png)

Figure 29. Participant Feedback: The Workshop Improved Participant’s Knowledge and Understanding of Health Workforce Planning

![Pie Chart showing participant feedback](chart3.png)
**Additional Comments**

**Positive Comments**

- Great discussions and well managed session.
- Enjoyed the plenary format and the absence of breakout sessions.
- Enjoyed the discussion and the opportunity to develop a better understanding of the challenges and health workforce policy issues from the perspectives of various countries.
- Enjoyed getting a better understanding of the differences and similarities in the current health workforce models.

**Constructive Criticism**

- Allowing more interaction so that everyone can be involved and better time management for discussions.
- Providing country summaries and power point slides ahead of time to promote more in-depth discussion.
- Focus on more unique aspects of health workforce planning rather than commonalities.
- Providing more "tools" like excel spreadsheets or discs as take-aways so that these models can be replicated.
- More policy considerations are needed and perhaps less on the "technical" issues of modeling.
- Providing more of a workshop rather than a series of lectures.
Tuesday May 7th 2013

PROCEEDINGS OF PLENARY #1
Update on Health Workforce Agencies

Facilitator:
Erin Fraher, Centre for Health Services Research

Dr. Erin Fraher provided a brief overview of the structure of the update on health workforce plenary (see Conference Program Appendix A) which was proceeded by an opening presentation by Mr. Andre Picard of whom spoke to the importance of communication in Health Workforce Planning with particular emphasis on listening to the voices of the patient as follows.

OPENING PRESENTATION

Importance of Communication in Health Workforce Planning- Hearing the Voice of the Patient
André Picard, Public Health Reporter for the Globe and Mail

Simple communication such as listening and talking is essential to good health care however; this important piece appears to be missing and this theme is one in which André Picard is very familiar in his role as a public health reporter for the Globe and Mail. He has been writing about health care for three years and has been writing about health policy from his perspective as health care consumer. He has developed considerable insight into the health care system of Canada, particularly from the consumer perspective due to the experience he shares with his parents who suffer from disease. It is from this perspective that he understands the importance of involving the consumer in health care system and asking such questions “what do patients want and need out of a health system? What care is appropriate, safe, accessible and affordable”? In order to deliver this kind of care, you need the right people at the right place at the right time and it is this idea which health care planners should frame the vision of health care. Numbers are important but we worry far too much about quantity and not enough on quality and appropriateness of care.

From Mr. Picard’s perspective, the biggest issue in health care isn’t the cost; it is unnecessary spending, adverse events and overuse which are all workplace issues. Canada’s health workforce often gets caught up in turf protection, protecting their territory like the game of thrones however, interdisciplinary care cannot happen when there is turf protection. Another major issue is that the health care system is built for providers instead of patients and this is the same situation in many countries. He also points out that aren’t any health care consumers at this event even though there is a strong consensus that patients should have a say in the way care is delivered and should have a voice in how healthcare should look. Indeed, patients have very good insight to offer in this regard. Mr. Picard also acknowledges the unpaid care givers who represent the biggest health workforce in the work and without whom the whole healthcare system would collapse and that many these individuals are patient families. Given their important role, they should be an essential link in health workforce planning.
Mr. Picard also emphasizes the need to create a workforce that meets the needs of the patient and to jot down what the patient needs rather than describing the services that can be offered. To this end, he hopes is that when discussing or debating health workforce issues, that health workforce planners are always cognizant of patients and their families for it is these people who will make health policy better.

He further suggests using the mom rule in terms of considering how she would be affected by the decisions that are being made for the average patient is your mom. We should build a health workforce and health policies that meet the needs of the patient- your mom. It is important to consider health workforce issues that affect the healthcare system on a daily basis and a lot of these issues can be brought to the table by asking the patient. For example, Mr. Picard’s mom presented issues concerning the frustration of having to repeat herself to various health workforce professionals and that no one took the time to introduce themselves. In her perspective, the number one important issue was bedside manner; looking her in the eye and taking the time to listen to her concerns and to tell her what she was going to do and why.

In relation to public policy, Mr. Picard feels that there is a lot of waste and there is not a lot of efficiency. Health workers are wasting time doing mundane tasks, many of which they are well overqualified to do not and they are not working to their full scope of practice. There is also lack of accountability with an endless parade of people who most of us have no idea what they are doing and why they are there. Public policy is also too systems based and not patient centered.

He also feels that patients are treated as vessels of disease and that there is a lot of unfairness in terms of how they are treated by health care workers and health care workers who do treat patients with respect and kindness and have excellent bedside manners are seldom rewarded. He also highlights the importance of health workers understanding trust needs to be earned and that it is not based on titles and that it is through respect, trust and kindness that will make a difference in health care.

Finally, Mr. Picard’s closing remarks to the health workforce planners at the IHWC conference when developing policies and planning for the health workforce is to do everything in our power to build a system that is centered on the patient and their needs and to build a health workforce with the patient in mind for it is this that will make a good health system and as Mr. Picard concludes, “your mother will thank you!!”.
UPDATE ON HEALTH WORKFORCE AGENCIES

Following the opening, Dr. Fraher provided the following introduction to set the stage for the health workforce agency updates.

SETTING THE STAGE

*Erin Fraher, Centre for Health Services Research*

Far-reaching health reforms are underway in Australia, Canada, the United Kingdom, New Zealand and the United States. A key element of reforms in each of the countries has been the creation of national health workforce planning structures. These new entities highlight the increased attention being paid to workforce planning and the recognition that transformed health systems will require a transformed workforce.

Despite having very different payment models and delivery systems, Australia, Canada, the United Kingdom, the United States and New Zealand face common workforce planning and policy challenges. Each of these countries will provide an update on the lessons learned from their efforts in trying to overcome these challenges which will provide important insights into how to best deploy the workforce in innovative models of care that are both more responsive to patients and more accountable for the cost and quality of care delivered to those patients. Canada will begin take the lead in this respect.

*Canadian Update*

*Ivy Lynn Bourgeault, on behalf of the Canadian Health Human Resources Network*

*Terry Goertzen, Manitoba Health on behalf of the Federal-Provincial-Territorial Committee on Health Workforce*

*The Pan-Canadian Health Human Resources Network: A National Platform for Knowledge Exchange*

Because evidence plays an important role in health workforce planning, collaboration between researchers and policy makers is essential to ensure that policy makers have access to evidence to help inform their decisions. The exchange of knowledge, research and innovations has often occurred in isolation, resulting in either the lack of scale up or the duplication of efforts. Recognizing these challenges, the Pan-Canadian Health Human Resources Network (CHHRN) was established on April 1st 2010, through funding from Health Canada and the Canadian Institute for Health Research as a means to coordinate, exchange and build capacity in health workforce knowledge, research, innovations across the country. The network consists of three regional hubs (Eastern, Western and Central) and is presently comprised of 155 Researchers and Decision makers from across the country. At its inception, the network held consultations with researchers, policy and stakeholder communities at each of the hub locations as an initial effort to identify top priority issues in health workforce planning and decision-making.
The top three issues across all three consultations became the focus of the production of three knowledge syntheses:

1) Internationally Educated Health Care Professionals;  
2) Planning for Health Workforce and Health Care Systems Based on Population Health Needs; and  

Each of the syntheses was produced through a consultative process with stakeholders and decision-makers and each was fashioned into two-page briefs available on the CHHRN website. The full reports are available upon request and are presently being fashioned into open access, peer reviewed publications.

Another knowledge synthesis that was recently produced through CHHRN was developed in collaboration with the Canadian Academy of Health Sciences (CAHS); it examines the alignment of health professional scopes of practice in innovative models of practice to help transform the Canadian health care system. These are a particularly notable alliance between CHHRN and the CAHS.

Although CHHRN does not house nor collect health workforce data, it is in the process of developing an online searchable directory of datasets with links to such sources as CIHI and the regulatory bodies for each of the regulated health professions across the country. This directory was developed in collaboration with CIHI as part of a data liberation initiative. The CHHRN website also has an online health workforce library which houses more than 5,000 references of both published and grey literature in both official languages.

The network has also developed theme pages dedicated to four major health workforce issues in the Canadian health care system:

1) Health Workforce Policy, Planning and Management;  
2) Health Workforce concerns in Rural, Remote and Aboriginal Communities Across Canada;  
3) Mobility and Migration of Health Professionals; and  
4) Scopes of Practice.

The theme pages were developed as a strategy for providing pertinent information and key resources on these four issues including: identification of key experts working in the field, related links and references from the health workforce library, upcoming events, key features such as publications, videos and/or knowledge syntheses on the topic as well as recent research publications, theses and doctoral dissertations on the topic across the country. The remit of the network is to coordinate, showcase and build capacity of health workforce knowledge, research and innovations to help support health workforce policy, planning and management.
Committee on Health Workforce: Collaboration Across Jurisdictions

Terry Goertzen is one of three provincial decision-maker members the Steering Committee which guides the pan-Canadian health Human Resources Network and is particularly supportive of the practices emerging from the network.

Mr. Goertzen recently chaired the federal-provincial-territorial Committee for Health Workforce (CHW). During the tenure of the CHW, there has been a notable shift in dynamic whereby the federal government is less involved and engaged in health workforce planning than previously, but the provinces and territories are continuing their efforts to work together in a more collaborative manner and connecting with the federally funded “C” organizations (like CIHI) to obtain data and other resources. Despite these politically different times, the provinces and territories are working well with what is available to them.

One of the issues that the CHW has begun to tackle is of creeping credentialism. They have been continuing to work on in a voluntary basis in order to slow the advance of entry to practice requirements in the country through specific committees and task forces of the CHW.

The Committee on Health Workforce is also working with the Deans of the Faculties of Medicine across the country on issues regarding the supply, demand and maldistribution of Canada's physician health workforce. A workshop was held with all the key players to frame an agreement on workforce planning and they are working with AFMC to move this forward. Three provinces have also taken the lead on physician workforce planning.

There has also been some serious progress on data collection in Canada with efforts to pull together a national database with shared confidentiality in collective agreements. An investment of 200 million dollars in funds was given to CIHI to support data gathering (not all of which dedicated to health workforce).

In January 2012, the premiers of Canada began working together to highlight health workforce innovations including those addressing scopes of practice/models of care and health workforce planning topics. An interim report detailing progress to date was released July 2012.
United States Update

Edward Salsberg, National Centre for Health Workforce Analysis

The passage in 2010 of the Affordable Care Act (ACA) in the United States (also sometimes called “Obamacare”) impacts on health workforce planning in America in a number of ways. First, by expanding health insurance coverage to millions of Americans, demand for health services, especially in underserved communities, will rise. This has raised awareness that an insurance card alone does not assure access to care and of the critical role of an adequate and well-distributed supply. Second, the legislation has numerous provisions to encourage organizational changes and innovations to improve outcomes and the efficiency of care. These provisions – which include changes in financing and organization – are leading to major changes in the delivery system including which and how health workers are being used. Finally, the legislation authorized a new National Center for Health Workforce Analysis to be a focal point for health workforce data and studies.

The actual levers which influence the education, supply, distribution and use of health workers is shared between state governments, the federal government and non-governmental organizations. States play a particularly important role through their financial support for health professions education (about two-thirds occurring at state universities and community colleges) and – similar to Canada - their regulation of entry into and scope of practice of a profession. States also license health professionals. The federal government supports innovations and provides important data to help drive state and local decision making. In addition, many federal policies related to payment under Medicare (health insurance for the elderly) and Medicaid (health insurance for the poor) can strongly encourage or discourage certain services and health professions.

Over the past two years, the National Centre for Health Workforce Analysis has been building an infrastructure for improving health workforce planning with staff, resources and partnerships both inside and outside of the government dedicated to improving health workforce data and projections. Recognizing the wealth of data that can be obtained through existing resources, such as the American Communities Survey, an annual survey of about 1% of the population, a priority of the NCHWA has been to identify and tap these existing sources. This led to the publication of a compendium describing 19 existing federal data sets and summarizing how they can be used for health workforce analysis.

But effective planning and research requires more detailed data on the health professions not available in existing federal data sources. Therefore, the NCHWA has been encouraging health professions organizations to establish a system for collecting data on each individual in the profession which can be used by the National Center and health workforce planners for better analysis and projections of the health workforce. The NCHWA initiated this process by working with the different federations representing state boards that license physicians, nurses and pharmacists and other professions to encourage them to collect basic workforce data as part of the licensure process in order to begin building national data sets.
The NCHWA is not only dedicated to providing better sources of data but also how best to package this data to inform individuals making policies and decisions related to the health workforce. This includes not only federal and state policy makers but also universities and training programs preparing health workers. The NCHWA is also interested in working with the states to develop a strategy for better informing health workforce planning and management within the states.

One of the major responsibilities of the NCHWA is to prepare projections of the likely future supply and demand for different health professions. While the federal government does not have responsibility for funding health professions education in the US, the government wants to encourage an adequate supply and distribution. One way of doing this is to advise states and the educational sector as to our expected future needs and the apparent gaps in the educational pipeline.

The two major challenges in health workforce planning in the United States are technical and organizational. A major technical challenge is determining what medical care and the health care system will look like in the future. This is particularly challenging given the changes underway in the health care system that have been stimulated by the ACA. While forecasting the future is always difficult, with the health care delivery system in transition it is particularly challenging. The organizational challenge is the pluralist nature of the US system. While it may be possible to provide states and the education sector with guidance through data and studies, there is no central control to implement the findings. Thus, calls for modest increase or decrease in educational capacity can lead to an over-response if all producers respond or an under-response if no producer responds.

Although the new health care act has created significant challenges to the health care system in the United States, it is one that will allow the health care system to evolve in several important ways. It speaks to the desire to expand and improve healthcare coverage, the need to redesign the delivery of health services to better address patient needs and to allow health workforce planning to evolve in ways that better address future needs and challenges and that ensures all caregivers are being used effectively.
New Zealand Update

Andrew Wong, Health Workforce New Zealand

The health system in New Zealand is somewhat akin to the National Health System of the United Kingdom and somewhat akin to Australia’s Health System in the sense that it was once a fully public system like the NHS but has since undergone reform resulting in a mixed system comprised of both private and public health sectors much like Australia.

The Ministry of Health, through one of its divisions Health Workforce New Zealand (HWNZ) is responsible for funding and overseeing district health boards which in turn are responsible for health workforce planning within their district. The Ministry of Health is subdivided into two components of which one component is dedicated to health policy and regulation and the other is dedicated to health care delivery and a subcomponent of the Ministry of Health works in collaboration with a national health force to ensure that everything that is done in the ministry is coordinated at a national level.

New Zealand’s health care system is also centered on triple aims which are nationally coordinated in terms of how the programs actually work. The triple aims are improved quality, safety and experience of care, improved health and equity for all populations and best value for public health system resources. There are four regional hubs which are responsible for coordinating health workforce activities in their separate regions across all actors and there are also strategies in place to ensure that these four regions are closely coordinated.

One of New Zealand’s biggest health care issues is that it is not a wealthy country and therefore affects the push and pull factors of the health workforce. Two to three years ago, there was a natural disaster in New Zealand which cost the health care system 40 billion New Zealand dollars in a time of financial restraint. This forced New Zealand to focus their attention on what can and cannot be done and to determine what medical specialties should be funded and how these specialties address the most important needs. Once a medical specialty has been identified for funding, they are required to produce certain deliverables in order to receive full funding. For example, they may need to demonstrate how the innovation they have developed has addressed the needs of the population. The selected specialties would then receive 20% of their full funding which are earmarked towards training for their innovation.

Several products and initiatives that have been delivered thus far include health service reviews and bowel screening programs which have helped identify the resources needed and the model of care available to deliver the care required for New Zealand’s population. It also provided a comprehensive view of the health care system, not only in terms of technical quality and the systems that are being developed to monitor this but also in terms of patient experience for such things as booking and access to care.
It is recognized that once health workforce needs change, training also needs to change however, New Zealand is building the infrastructure to support this. Many of the medical graduates in New Zealand are migrating to Australia in search of higher earnings/different lifestyles/opportunities for sub-specialization. HWNZ is working in collaboration with Health Workforce Australia to address this issue and are also very keen on working with other countries to share ideas and promising innovations in the field of health workforce planning.
About four years ago, Australia identified the need for a more comprehensive approach to health workforce planning and to achieve sustainability. Health Workforce Australia was established some 2.5 years ago in response to this need. HWA is a federal body dedicated to providing health workforce leadership in Australia, particularly with regards to building a sustainable health workforce, addressing critical health workforce priorities including planning, training and reform and bringing together government and non-government organizations across the health and higher education sectors. Despite being a federal body, HWA is separate from the Federal Health Agency and was established as a means of providing clear, independent, evidence-based advice to the governments and leadership in health policy programs.

The three main goals of HWA is to build capacity, increase productivity and improve distribution of Australia’s health workforce through the provision of evidence-based advice, leadership and collaboration with key stakeholders and health workforce planners.

Building Capacity

Australia invested 600 million Australian dollars to support efforts for building capacity of the health workforce including:

- Funding program for clinical training;
- Developing alternative training methods such as the simulated learning environments;
- Increasing medical seats;
- Improving recruitment and retention efforts for international health professionals; and
- Developing the Aboriginal and Torres Strait Islander health workforce.

Increasing Productivity

The primary focus for health workforce productivity in Australia is to increase the productivity and flexibility of their aged health workforce however, efforts have also been put into place towards implementing new workforce models involving expanded scopes of practice, establishing a national common health competency resource, implementing a national mental health workforce strategy and plan and expanding assistant and support roles.

Improved Distribution

Health workforce distribution is a challenge in Australia with significant imbalances in rural and remote areas of Australia. National strategies are being developed to address these imbalances which include establishing rural training pathways and producing rural generalists. Australia is also in the process of developing national workforce strategies for improving the distribution of health professionals in the field of oncology, mental health and Aboriginal health.
Building Evidence

A major focus of HWA is to build an evidence base for health workforce planning, modeling, projections, research and evaluation through the provision of national statistics resources, the Health Workforce 2025 Report series and research programs.

Providing Leadership

A key component of HWAs strategy is to provide leadership by:

- Developing national health leadership training and capacity building mechanisms;
- Developing a national health leadership framework through Health LEADS Australia; and
- Promoting public debate about health workforce issues.

Working in Collaboration

Another important component of HWA’s strategy involves working in collaboration and partnering with stakeholders in both private and public health sectors to address health workforce issues, to provide bottom up, evidence-based advice and to promote international collaborations.

Interface with Government

HWA also meets with all nine health ministers 2-3 times a year to present their reports and to get approval of health programs. To date, the work undertaken by HWA has given rise to a new program of work dedicated to:

- Improving productivity and retention through workforce innovation and reform;
- Improving mechanisms for the provision of efficient training and education intakes;
- Addressing regulatory and industrial barriers and enablers to workforce reform in order to get harmonization across jurisdictions on regulatory frameworks;
- Streamlining clinical funding; and
- Achieving national self-sufficiency recognizing that Australia is the least self-sufficient of nations.
United Kingdom Update

Meena Mahil, Centre for Workforce Intelligence

On April 1st 2013, England established a new healthcare system focused on patient-centered practice and subsequently, new organizations were responsible for the health workforce in England. The Centre for Workforce Intelligence (CfWI) is a national authority on workforce planning and development in England and was established four years ago through funding from the Department of Health for the purpose of informing better workforce planning in health and social care through the provision of quality intelligence. The CfWI is also supported by governance boards and its mission is to become the primary source of workforce intelligence for informing health and social policy and decision-making to improve people’s lives. In this respect, the CfWI makes patients the centre of the service.

Leadership, intelligence and planning are the three main components that the CfWI works with to support the United Kingdom’s significant care and health workforce consisting of 1.4 million people working in the NHS and 1.63 million working in adult social care in the United Kingdom.

Leadership

The CfWI provides leadership to guide policies that shape the health workforce by working with such players as the Department of Health, NHS Commissioning Board, Health Education England, Local Education and Training Boards and CEOs of health and social care in the United Kingdom. This is through horizon scanning, scenario generation, intelligence and support.

Intelligence

The CfWI provides quality intelligence to guide decision making by working with workforce directors, human resources, managers and finance managers across health and social care.

Planning

The CfWI helps inform health workforce planning by working with planners, service managers and team leaders particularly with respect to securing the future workforce supply and by developing and improving the tools and templates used to support decision-making and supporting good practice.

Recognizing that the demands on the healthcare sector will evolve with changing demographics and societal shifts, high quality intelligence is needed to inform health workforce planning and develop a health workforce that meets the needs of these demands. The CfWI helps workforce planners address these challenges by providing the high quality intelligence to inform decision needed to meet demands. In December, the CfWI produced a report looking at medical and student intakes in England which informed the decision to reduce intakes by 2%. The framework used to inform such decisions is horizon scanning in collaboration with stakeholders and involves identifying key areas of...
focus and conducting interviews with stakeholders to understand the drivers of change and get consensus of data for quantifying scenarios to produce models to manipulate policy leavers. The main goal of this approach is to enable stakeholders to look at the gaps in the health workforce in terms of both supply and demand from the outside in and inside out.

**CfWI’s Robust Workforce Planning Framework**

Horizon scanning is a component of the CfWI’s robust workforce planning framework, which allows stakeholders to address big picture challenges. Through this framework, stakeholders are able to break down big problems in order to better understand the factors involved including identifying those which can or cannot be manipulated and to investigate the likely outcome of implementing policies used to address these challenges through scenario generation. The CfWI also produce workforce briefings to help inform health workforce planning by providing trends and resources on a given topic, covering a wide range of topics. For example, the role of informal carers, how to improve workforce productivity and how to use community leaders in a meaningful way.

The following is a list of some briefs produced by CfWI to date:

- How can we recruit and retain sufficient domiciliary care workers to meet future demand?
- How can the workforce be used to address the challenges facing emergency departments?
- What role will informal carers have in meeting future demand?
- How can band 1-4 staff be utilized to improve workforce productivity and meet demand?
- What does 24/7 working mean for the workforce?
- How can we promote diffusion and adoption of technology and innovation across the workforce?
- What leaders will we need to address the big picture challenges?
- How do we achieve effective safeguarding across health and social care?
- How could the community workforce alleviate some of the pressure on general practitioners and improve joint-working across primary and community care?
- What does a flexible workforce look like?

**Next Steps**

In terms of next steps, the CfWI would like to develop an “Overall Approach Diagram” which would provide a visualization of the relationships between big picture challenges, driving forces, clusters and scenarios in order to provide stakeholders a high level view of the workforce. The CfWI is also proposing to link information from individual reviews and to engage stakeholders in addressing gaps. The aim is to support the district health’s 20 year strategic vision for the health and social care workforce.
OPEN DISCUSSION: Agency Updates

**Panelists:**
- Andre Picard, The Globe and Mail
- Terry Goertzen, Manitoba Health
- Ivy Lynn Bourgeault, CHHRN
- Edward Salsberg, NCHWA
- Andrew Wong, HWNZ
- Mark Cormack, HWA
- Meena Mahil, CfWI

**Facilitator:**
- Erin Fraher, Centre for Health Services Research

**Major Themes:**

1) Geographical Aspects of Workforce Planning
   - National engagement, collaboration and coordination.
   - Strategies for utilizing national data at the local level.
   - Efforts to create data in various provinces, regions, etc.

2) Data and Tools
   - Liberation of data.
   - Use of qualitative data and stakeholder feedback regarding qualitative data.
   - Produce and present data and tools in a way that promotes utility.

3) Analysis
   - Linking workforce models to outcomes, costs, quality and patient experience.
   - Look at early adaptors.

4) Stakeholder Engagement
   - Promoting engagement and collaboration of various stakeholders to address big picture challenges.

5) Patient-Centered Approach
   - More engagement and involvement with users of healthcare in workforce planning.
   - Patients journey and experience of care.

6) Linking Innovation to Workforce Planning
   - 10% innovation bonus to develop workforce models.
   - Harvesting lessons learned from innovations.
   - Innovative ways of looking at the health workforce is to look at it from a broader and more integrated perspective.

7) Dealing with Uncertainty
   - “Part of the failure is the failure of the system to understand uncertainty, that it is not a precise science and part of our job is to help people understand this uncertainty” Jim Buchan.
Questions and Answers

How can one go about integrating workforce projections and policy initiatives into the real world of health system delivery? To what degree does the health system have an impact on the health outcomes?

To better enable the health system to have greater impact on health outcomes is to better align the health workforce to population health needs. It is important to get information out about those models that work out in the ‘real world’ for others to emulate and finding a way of collaborating with those who are interested in learning more.

It appears that the development of teams and broadening scopes of practice is becoming more and more critical in terms how best to position workforce and how to provide services to better address the needs of the population. There is a need to reframe questions and reexamine what the core services that are provided and how to create teams to best provide these services. Does it make sense for physicians to provide services for which they are overqualified? If not, who can provide these services and what are the best options for providing those services?

Mr. Picard raised a good point in terms of looking at the delivery of services from a patient perspective. It is also important to look at health prevention and promotion and determine where illness care is going to happen in order to be more responsive to the needs of the population. Linking both of these components to health workforce planning is important in order to better address the needs of the population. There are also a lot of lessons learned and competency based approaches that can be used to help inform health workforce planning and shape the delivery of care that better address the needs of the population.

On a practical level, it is difficult to assess the needs and demands of the health workforce especially given that the public health workforce is comprised of different groups and a range of health workers. How can we better measure the supply and demand for the public health workforce and how are others assessing the public health workforce?

Terry (CD): In Canada, we look at this issue from an innovative perspective by identifying innovative strategies that are working well and to try to evaluate outcomes. We highlight those innovations that are working well and encourage their adoption and adaption.

How do we increase funding for research and modeling in health workforce planning and what can we do as a group to articulate the value of health workforce models and the research going into the models?

Meena (UK): The approach used in the United Kingdom is to engage stakeholders in the process and to provide a mechanism for review. It is important that stakeholders know we are not trying to predict the future but to consider potential outcomes through scenario generation. Through the robust planning framework and scenario generation there is a plan to go back to the stakeholders to see how things are unfolding.
Mark (AU): In Australia, there is enormous value in continuing to refine our health workforce models. Stakeholders act upon findings by producing more or less a particular type of worker and modeling promotes conversation with the community. The challenge we have is producing the proper interface with government to frame future policy decision. In this respect, broader engagement with those who influence government is more important.

Andrew (NZ): In New Zealand, policy makers utilize these models to determine what the costs will have on health care system. How we are doing at the moment will affect what will happen in the future and so it is important to use the models that we have to improve what we are doing in order to better prepare ourselves for the future.
Conference Evaluation of Plenary #1

The following is an evaluation of plenary 1 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 30. Participant Ratings: Quality of Discussions**

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**Figure 31. Participant Ratings: Quality of Planning Updates Provided by Member Countries**

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**Figure 32. Participant Feedback: Questions Posed During the Question and Answer Period Were Appropriate for the Theme of this Plenary Session**

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Figure 33. Participant Level of Agreement: Answers Provided During the Question and Answer Period Adequately Addressed the Questions Posed at this Plenary

<table>
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Figure 34. Participant Ratings: Overall Quality of the Presentations and Discussion

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</table>

Figure 35. Participant Feedback: The Plenary Improved Participant’s Knowledge and Understanding of the Activities and Progress Taking Place Within These Health Workforce Agencies

- Yes: 92%
- No: 1%
- Not Provided: 7%
**Additional Comments:**

**Positive Comments**

- The international connection allows us to move away from workforce planning in "silo of countries" to one that allows us to learn from one another.
- Nice way to kick off the conference!
- Moderator was very effective and knowledgeable.
- The moderator did a great job moderating/calling out the big themes of the session. The panelists did a good job of presenting the current issues in their individual countries.

**Constructive Criticism**

- The overviews were somewhat superficial and too brief to provide more in-depth content.
- New and innovative solutions to problems would have been a great addition to the presentations.
- Although the presentations were a bit unfocused and "boilerplate", the updates from each of the countries were helpful and generated some interesting ideas for future meetings.
- There is too much faith in increasingly sophisticated models that are built on unrealistic assumptions about how health care should be delivered.
- Providing more time to unpack health workforce issues is critical and more time should be provided for questions and answers.
- Power point slides are helpful and should be used as a high level visual aid.
- Presentations were dry but the question and answer period was engaging.
- Providing an overview of the key issues from previous years would be helpful in to the newcomers of the IHWC conference and speakers should identify themselves, their agencies and their roles for this purpose as well.
- More specific questions should have been directed to the panel so as to avoid superficial discussions.
- Presentations were too broad in scope.
- Too much focus on data and not enough focus on workforce solutions in the real world.
- A more of an evidence based approach to this topic would have been helpful in this conference as would more critique and challenge.
PROCEEDINGS OF PLENARY#2
Providing Autonomy and Public Policy Imperatives- Which Should Prevail?

Moderator:  
André Picard, Public Health Reporter, The Globe and Mail

Debate Proposition

Professionals and public officials functioning in the domain of health care are all committed to the good of society and meeting societal health needs. Despite these common aims, public policy imperatives and the desire of provider autonomy are often at odds. One the one hand, public officials cannot plan what they cannot control. On the other hand, health care institutions are trying to balance their budgets notably through the flow of workers and many health professionals increasingly desire to balance their personal and professional lives.

Debate Question

Should the autonomy of health professionals in regards to their choice of discipline, where and when they work be more controlled by the state/government to better ensure that societal health needs are met?

SUMMARY OF DEBATE PLENARY

Pro-Profession Arguments

Anna Reid, President, Canadian Medical Association
Peter Kopelman, Principal, St George’s, University of London

- National Architecture for a Reform to Support Multiple Systems
  - Introduction of medicare bill in the 70s and ramping of community health.
  - Pillars of national agency → collects all data.
  - National prevention agency → provides advice and direction for activities.
  - National registration and accreditation of health professional programs.
  - National health workforce commission.
  - National leadership has allowed the country to enter the e-health world:
    a) EMR;
    b) Unique electronic identifiers, and services in place; and
    c) Build scenarios, test out and monitor scenarios that may be present in the future.

- System in a Position to Collaborate With Healthcare Professionals
  - Able to set parameters for new roles.
  - Able to work with professionals in order to amend or alter scopes of practice.
  - Able to provide incentives for immigration.
  - Able to push the boundaries of where healthcare professionals are located.
- **Establishing Universities in Rural Areas and Training Individuals in These Areas as a Strategy to Help Increase Retention**

  Requires national leadership and collaboration between professionals and the state or jurisdiction.

- **Teaching Health Centres That Support Community-Based Interprofessional Training**

  Training according to population health needs.

- **Improving Collaboration Between the Government and the Profession in Order to Make Further Advancements**

  Tensions between the professions can create barriers towards advancement: we all want to honour what the professions stand for, however often professions advocate against change.

  a) Rather than trying to proceed with their own sectorial changes, it makes more sense to create an alliance with others; and

  b) All professional bring their expertise to the table and come with a collective agreement for change.

  Need to balance what professional advocates have influence with the broader public health and the realities of how we all go around with this bucket of money to address healthcare needs across the country.

### Pro-State Arguments

**Daniel Derksen**, Professor & Chair, Public Health Policy and Management Section, *Mel and Enid Zuckerman College of Public Health*

**Sabina Knight**, Director, *Mt Isa Centre for Rural and Remote Health, Australia*

- **Autonomy Plays a Vital Role in Patient-Physician Relationship in Rural and Remote Areas**

  Importance of When, Where and What Physicians Practice

  a) The smaller the team and the more rural they are, the more likely change can be effected.

  b) Increasing accessibility so that patients are not duly limited by physician constraints.

  c) Increasing accessibility to health services for all patients no matter where they live and what their circumstances.
- **Addressing Recruitment and Distribution Issues**
  
a) Help inform the distribution of medical education to achieve right number of residency spots and ensure the right number of graduate positions.
  
b) Implement mandatory sub-training in rural areas within the medical curriculum and while training, identify and encourage those students that enjoy the challenge associated with limited resources and the ability to work to their full scope of practice.
  
c) Encourage physicians need “to be needed” in order for recruitment and retention in rural areas to be effective.

- **Address Retention Issues**
  
a) Physicians often avoid working in rural and remote areas because they do not feel adequately trained and unlike urban areas, there are more generalists than specialists in rural areas and therefore require enhanced skills and training.
  
b) Most effective way of improving retention is to let physicians work to their full scope of practice.
  
c) Identify effective incentives. Although monetary incentives are somewhat effective, there is no guarantee that physician will stay beyond the terms of their contracts.
  
d) There needs to be a number of doctors in the area to provide adequate support.

- **Additional Reasons for Reducing Professional Autonomy**

  - **Prevent Brain Drain**
    
a) Prevent doctors going abroad as a result of unemployment or schooling options.

  - **NHS Health Care Reform From Doctors Directed to State Directed Health Care**
    
a) When NHS was initially established, doctors were free to direct. Since then, the NHS has undergone tremendous reform. In 1983, management was in the hands of general management, 1989-1991, quasi market situation with provider of health care and commissioners of health care which became very politicized and then the introduction of political government.
    
b) Debate on standardized mass production or flexible production where health care professionals are given autonomy to provide health care. In the first situation you can relate targets and in the second you can associate standards.
    
c) Regardless, people must always come before numbers and this must remain the focus to those designing and influencing health care planning.
General Consensus in Favor of Collaboration

- **Importance of a Collaborative Approach Over Top-Down Approach**
  - Punishment of doctors for advocating on behalf of patients when advocacy is important to the health care system and to the morale of physicians in these areas. Advocacy should be embedded in physician code of practice.
  - Forcing physicians to relocate is not a good way to go about addressing the need for physicians in rural areas, we need to provide incentives.
  - Government raises people expectations and blame providers when things go wrong. Government must work closely with health professions rather than against them in a top-down fashion.
OPEN DISCUSSION: Autonomy and Public Policy Imperatives Debate

**Panelists:**
- Daniel Derksen, Mel & Enid Zuckerman College Of Public Health
- Sabrina Knight, Mt Isa Centre for Rural and Remote Health, Australia
- Peter Kopelman, SGUL
- Anna Reid, CMA

**Facilitator:**
- André Picard, The Globe and Mail

**Major Theme:**
Collaboration between government and professions is necessary for health workforce planning with patients as the focus for designing, influencing and shaping how healthcare is delivered.

**Important Points**

**Peter (UK):** There is little evidence to show that health professions per se influence policy, nor is it the policy per se that changes behaviour such as the case of smoking and obesity. Public Health messages are often ignored unless the issue is personally affecting health. It took 50 years to change smoking habits which resulted from an interaction between physicians and patients to influence policy.

**Sabrina (AU):** Health care reform has been unable to progress because of the opinions of the different professions. We are limited in our ability to improve profession capacity because of existing tensions and professional politics. We need to establish a balance between what professional health advocates have influences and reality of how to best meet health service needs across the country.

**Daniel (US):** It is important to strike balance between competing interests of the professions. As a family physician we have to look to the needs of the patients and how we train the professions to meet those needs. We fall short on autonomy because we advocate the responsibility of how to be leaders in their systems. We have to learn the skills of how to take problems such as inequity and make sure we are accountable to the constituents.

**Questions and Answers**

**How do you establish provider autonomy when you have interdisciplinary care?**

**Peter (UK):** In order to do so successfully, we need to begin as early as day one of the medical undergraduate program to get the message across to students that we work as health professional teams. This generational change needs to be reinforced by professionals and supported by government.
Is health care going to suffer if you turn health professionals into bureaucrats?

**Daniel (US):** It is important to get health professionals involved in the regulatory process and especially to develop relationships with those that enforce them.

**From a government perspective, there is no resistance from governments for professions to advocate for patients. Who should have the final say when it comes to making decisions on such hot button issues as medicinal use of marijuana, acting on patient complaints and deciding training quota?**

With respect to such hot button issues as end of life care, it should be a community decision. We should bring together communities of interests so there is some agreement on how to proceed. One body is not better suited to make decisions over the other however; government should set the priority that a given issue needs to be solved together.

**Anna (CD):** This is a big issue in Canada particularly with respect to whether or not physicians should be practicing assisted suicide. The Canadian Medical Association feels that it isn’t their role but we recognize that this is a societal issue and that we need to take leadership and be part of the conversation otherwise it will be forced down on us much like the case in Quebec.

**Peter (UK):** There needs to be an individual accountable for such decisions and this is the physician or health professionals and so such decisions should emanate from health professions.

**Are we talking about autonomy or anarchy? Fifty five percent of surgeons are unemployed and losing autonomy but they know some important best practices. If we leave it decisions solely up to the doctors, how do we ensure that health professionals are doing the right thing?**

**Anna (CD):** Through the Choose Wisely Initiative, Canadian Medical Association working with other health care providers, governments and the Council of Federation to develop clinical practices guidelines with accountability measures to address such concerns. We recognize the importance of being part of leadership along with governments.

**Peter (UK):** In the United Kingdom, standards are set by arm’s length governmental bodies such as NICE and medical royal colleges which are advised by professions. We recognize that standards need to be judged and that the best people to judge these standards are the professions and the patients.
Conference Evaluation of Plenary #2

The following is an evaluation of plenary 2 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 36.** Participant Ratings: Quality of Facilitation and Participant Engagement

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**Figure 37.** Participant Ratings: Quality of Pro-Profession Arguments

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**Figure 38.** Participant Ratings: Quality of Pro-State arguments Presented

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Figure 39. Participant Opinion: Position that Presented the Strongest Argument

![Chart showing the distribution of opinions on who presented the strongest argument.]

- 35% Pro Profession
- 42% Pro State
- 23% Not Provided

Figure 40. Participant Opinion: Personal Position in This Debate

![Chart showing the distribution of personal positions in the debate.]

- 54% Pro State
- 15% Pro Profession
- 31% Not Provided

Figure 41. Participant Feedback: Concluding Discussion Adequately Summarized the Key Issues and Responses Discussed During the Debate

![Bar chart showing the number of respondents' feedback on the concluding discussion.]

- 29 respondents agreed
- 4 strongly agreed
- 6 not provided

Figure 42. Participant Ratings: Overall Quality of This Plenary Session

![Participant Ratings Graph]

Figure 43. Participant Feedback: Improved Knowledge and Understanding of the Issue of Autonomy and Public Policy Imperatives

![Participant Feedback Graph]

Additional Comments

General Comments

- The debate is all relative to current state in respective countries.
- Neither of the positions should take precedence. There is a need for balance of both.
- Neither positions won rather collaboration appeared to be the consensus.

Positive Comments and Suggestions

- Both sides presented well. We need professionals who take a broader view of public health issues.
- This was a useful and interesting approach that needed to be carefully scripted/managed.
- This session was a nice approach to make participation livelier.
- The debate format was enjoyable but the question may not have been a good choice.
Constructive Criticism

- The Pro State position seemed to focus on collaboration with the profession not excluding it.
- The Pro Profession position should have spoken as a profession rather than communicating the position of the debater's organization on every matter.
- Better focus on the question would have been best as it was unclear that this debate was about autonomy. Some initial set up and definitions would have been helpful.
- Might have been better to ask the question "What does professional autonomy mean?"
- The debate format was great but would have been better to provide a "C" option for the vote to encourage a stronger collaboration between stakeholders including government, health professionals and patients and their families.
- There weren’t any strong views presented but the idea of voting was nice. It would have been a good session if it worked out better.
- The debate was a bit unfair as I felt that the "Pro State" did not argue their position rather they argued for collaborative.
- Perhaps tighter and more focused arguments/presentations would have been better but it was still an interesting session.
- The definition of provider autonomy was not well defined in the question;
- Neither sides took an extreme stance nor did there appear to be any opposing sides.
- Would have preferred more discussion of carrots/sticks that support public policy and how to get leadership support/consensus across professions.
ASSURING ADEQUATE SPECIALISTS, GENERALISTS AND A HEALTH WORKFORCE WHERE IT’S NEEDED: HOW DO WE BALANCE DEMANDS TO IMPROVE QUALITY, EXPAND ACCESS AND CONTAIN HEALTH CARE COSTS?

Moderator:
Edward Salsberg, Director, National Center for Health Workforce Analysis, Health Resources and Services

Introduction

Mr. Edward Salsberg began with a brief overview of the plenary which consisted of panel presentations from various countries in which they would discuss their experiences and perspectives in making decisions regarding when to create a new specialty and developing the skillset for the new specialty. Participants were also asked to refer to the briefs that were prepared by each of the countries prior to meeting for the purpose of discussion (see Appendix C) and then provided the following brief introduction to set the stage for the panel presenters.

Our countries’ health care systems must simultaneously control costs, improve care quality and serve growing, aging and more chronically ill populations. Medical knowledge and technological advances are expanding rapidly and many health professions face pressures to become more specialized, increase education and training requirements, and work in a narrow range of health care settings. Our populations in need of health care, however, are expanding and they access services across a wide range of settings. Does our health workforce have the flexibility needed to meet population needs?

Canadian Experience

Paul Dagg, Interior Health Authority in British Columbia and University of British Columbia

At the outset, Dr. Dagg began his presentation by stating that he will be presenting his perspective on the challenges of establishing the right mix of generalists and specialists, expanding the physician supply and addressing the distribution challenge within the context of his role as Medical Director of Tertiary Mental Health at the Interior and that his presentation does not by any means reflect the full Canadian perspective on the issue. The following are the Proceedings of his presentation.

For quite some time, there has been discussion around shortages of physicians in Canada, particularly with respect to generalists. A large part of the issue lies with the lack of consensus on what the term “generalist” actually means. Despite the use of the term, most generalists have a very narrow range of practice. For example, in the field of psychiatry not every general psychiatrist is actually a generalist; there is often some sort of subspecialty involved. Similarly, not every family doctor is a generalist. The lack of consensus on the definition of generalist creates particular challenges in health workforce planning as it allows educational systems the flexibility to create their own definitions and these
variations may lead to false assumptions regarding the actual number of generalists there are in the health workforce. For example, in some professions the term “general” is used to describe everything that is not recognized as a subspecialty whereas in others it is used to describe a subspecialty that provides comprehensive care and embraces the values of generalism.

**Definition Generalist and Generalism**

Recognizing the need to better define generalism, Health Canada funded a project to gain consensus on a common definition of generalist and generalism as follows:

**Generalist**: “A generalist is a physician with core abilities, defined by a broad scope of practice, managing problems that are diverse, undifferentiated and often complex with an essential role in coordinating care and advocacy.

**Generalism**: “Generalism refers to a philosophy of care, distinguished by a commitment to the breadth of practice within each discipline and collaboration with the larger health care team in order to respond to patient and community needs.”

The main principle behind the definitions described above isn’t a lack of subspecialty but rather the provision of a more patient centered model of care as opposed to disease centered approach. Applying these definitions to health workforce planning and more specifically in terms of ensuring access to generalist care would imply a combination of numbers and philosophy of education and care.

**Implications of a Clear Definition**

Developing a clear definition of generalism in medicine may also play a role in attracting more people to the field. In the case of internal medicine for example, a shortage of general internists was identified and the lack of definition and recognition as a subspecialty made it difficult to determine how many general internalists there actually were especially given that those who did not have another subspecialty were automatically assumed to be practicing generalists. After much discussion and debate, the Royal College of Physicians and Surgeons of Canada decided to proceed with the request to recognize general internal medicine as a subspecialty of internal medicine which in turn has led to renewed interest in this field to the extent that some programs are unable to provide enough residency positions for applicants of the upcoming year.

A clear definition of generalism becomes particularly critical in situations where there is a need to identify generalist health care providers when access to care is an issue. This is particularly salient in the Canadian context where the geographical distribution of health care providers plays a significant role in access to care; especially in rural and remote areas of the country where recruitment and retention of physicians is a significant challenge. Since 2000, there has been a focus on addressing the issue of physician shortage in rural and remote areas of Canada. The Northern Ontario School of Medicine was established with an explicit focus on rural and northern health and a clear mission and curriculum dedicated to northern and rural medicine. Furthermore, the medical school is comprised of eleven regional campuses that based in several communities in northern Ontario; four of which
are housed in underserviced areas of Ontario. Graduates of this school are more likely to select careers in family medicine over specialty programs and often in regional or rural areas of northern Ontario which has contributed to efforts for increasing recruitment of students in family medicine in response to a significant decline in 2003 and efforts for addressing the issue of physician shortages in rural and remote areas of Canada. Despite efforts to address shortages and improve the distribution of physicians in rural and remote areas through expansion, distribution continues to be a challenge. As a result, there is a need to address the issue of distribution independent of expansion.

**Models of Care**

Determining the proper balance of generalist and specialists is equally important in the Canadian context particularly in rural and remote areas where there is a need to carefully assess whether the provision of providers in close proximity or the provision of a high volume of sub-specialized providers is more beneficial. In this context, there is a need to better define those areas of care that require a hub and spoke model versus those that require a more distributed model of care and to discuss which model is most appropriate to provide same outcome. There are also collaborative care models such as those in mental health which involve family medicine and there is a need to expand these models in other areas of medicine.

**Responding to Increased Demand for Specialization**

The Royal College of Physicians and Surgeons of Canada has been careful about expanding the number of sub-specialties in Canada as a result of its potential for fragmentation of the workforce however, they have developed a new form of program that recognizes areas of focused competence in areas that require unique expertise such as in hematology and have also recently recognized sub-specialties in areas where there was a clear recognition of need including Geriatric Psychiatry and Forensic Psychiatry. One of the barriers to expanding sub-specialization training is the rigid system of educational funding which can result in a significant contraction in training and the biggest barriers relates to the failure of developing part-time, distance-based practice models of continuing education which creates restrictions on the physician workforce to develop sub-specialty or advanced levels skills.

**Current Planning Process**

The centralized, university based system of graduate medical education in Canada supports a more collaborative and responsive approach to health workforce planning with government and has enabled some of the changes described above. The Canadian Health Human Resources Network is a national online forum that also supports health workforce planning through the provision of online tools and resources.
The Association of Faculties of Medicine of Canada (AMFC) has also recently produced a report which identifies several key themes that medical schools in Canada will be addressing in the next decade which include getting the right mix, distribution and number of physicians and to cultivate social accountability through experience in diverse learning and work environments. The Royal College of Physicians and Surgeons are also about to publish a series of papers on these topics which will provide further recommendations.

There are also new models of payment for family physicians being developed that support chronic disease management and enhance recruitment into family medicine and rural and remote areas of the country.
United States Experience

Lois Nora, American Board of Medical Specialties

At the outset, Dr. Nora states that she is presenting her perspective within her role as CEO of the American Board of Medical Specialists and that the presentation will focus mainly on the Affordable Care Act with reference to other private and public sector initiatives that may shape the workforce in the United States. The following are Proceedings of her presentation:

US federal policy on workforce development and distribution reflects our traditional preference for “market-based” approaches over central planning to achieve national policy goals. One of the great potentials of the new Affordable Care Act is that it is encouraging changes to the market to be more about integrated delivery with a focus on population health outcomes, which in turn will change the nature of workforce demands.

The Role of Health System Reform

The ACA legislation incorporated a variety of provisions that address health workforce directly and indirectly. For example, the ACA increased reimbursement to primary care providers to make the choice of primary care more attractive, and provided scholarships, loan repayment, and training demonstration programs to invest in primary care physicians, midlevel providers, and community-based providers. Some policies are aimed at increasing the attractiveness of primary care practice in rural or underserved areas, including increased access to primary care and community-based settings in training spots for primary care physicians, rewards programs to encourage physicians to choose primary care careers, and locating training opportunities in underserved areas. The ACA also included a new Primary Care Extension Program to provide technical assistance to primary care providers, who tend to be in small practices without much infrastructure support.

Some of the most important, and potentially transformative, policy efforts will influence healthcare workforce indirectly. Deliver reform in the ACA reframes the debate over generalists and specialists by focusing on the development of systems of care that would be responsible for managing the health of populations and for making available suitable mix of services, physicians and other health care professionals, as necessary to meet the population’s health needs rather than on workforce solutions per se.

The Role of Medical Education

A variety of formal and informal activities are occurring in medical and health professions education that will influence the make-up of the healthcare workforce and, as importantly, the ways in which healthcare professionals work together to deliver primary and specialized care. At the undergraduate medical education (medical school) level, medical schools have adopted student-centered curricular models that allow accelerated entry into primary care disciplines and have approved a new standard on training students to function collaboratively in inter-professional teams. A federally funded National Center for Interprofessional Practice and Education was recently launched at the University of
Minnesota. Meanwhile, residency programs have developed milestones to embed the six core competencies into specialty training, which include competencies of interpersonal communication and system-based practice. Teamwork and system-based practice are receiving focused attention at both the undergraduate and graduate levels.

**Approval of New Specialties and Subspecialties**

The American Board of Medical Specialties, a federal agency responsible for the lifelong assessment of clinical skills across the careers of health professionals, is in the process of reconsidering its criteria for the approval of new specialties and subspecialties. The criteria being considered thus are as followed:

- An area of clinical practice that is not routinely performed by physicians within the sponsoring specialty.
- A distinct and definable patient population that has a type of care need so unique that a “stand alone” body of medical knowledge and care principles have been developed solely to meet the needs of that patient population, requiring at least 12 months of training.
- Improved access and quality without negative impact on the cost of care.
- Sufficient numbers of training programs and trainees to sustain the area of specialty and to allow for a sustained critical mass of trainees necessary for trainee testing validity and training program accreditation.

**Conclusion**

The regulation of the physician training pipeline in the US has focused more on educational standards- with a focus on skills needed to work in a reformed future delivery system- than on workforce composition. Public policy in the US tends to favour incentive-based approaches to increase the number of physicians seeking training in primary care and to attract physicians to practice in rural and underserved areas.

More recently, these workforce questions of balance and distribution have been reframed as delivery system problems best resolved at the local level in organized delivery systems (Accountable Care Organizations) that will be held accountable for the health of populations. These delivery system solutions are likely to encourage the development of primary care teams, working across professional boundaries to allow all members of the team to work at their highest level of capability and training.
Australian Experience

Mark Cormack, Health Workforce Australia

Australia has experienced a similar trend towards specialization within its medical workforce as Canada and the United States and this trend is also prevalent within its nursing and allied health workforce. Much like Canada and the United States, the factors driving this trend is related to a lack of coordination between the health system and higher education systems and resulting challenges in health workforce planning and the development of policy and programs.

The major policy leavers available to support a generalist workforce include higher education to initiate and respond to the generation of knowledge required generalist practice, clinical training which has a major bearing on how doctors are trained to deliver care, compensation and payment arrangements which are largely embedded in practice and regulatory colleges which have a significant impact on making standards more flexible.

Efforts have also been made to develop formal linkages between the higher education sector and both the health care system and government in Australia to provide a more coordinated approach to health workforce planning. These linkages are now required in the national registration and accreditation process of health professional groups such as doctors which creates more rigidity in the process and puts checks and balance to specialization whereas before medical boards generally proceeded autonomously.

Addressing the needs of population in rural and regional communities has been a primary driver of recent training reforms aimed at developing generalism in Australia. Recently, the Queensland Rural Generalist Program was developed in response to the perceived failure to provide a sustainable general medical workforce in rural Queensland. A key element of this program involves early and intensive exposure at the undergraduate and postgraduate to rural settings, remuneration that maximizes recruitment and retention of the best quality medical graduates and expanded scopes of practice in areas that are traditionally specialists including obstetrics, surgery and anesthetics. In the short time that it has been introduced, this program has dramatically increased access to services dramatically in rural Queensland and there are more applications than places to fill.

There is consensus across all governments and major training colleges in Australia towards generalism and national interest towards the development of new workforce models that broaden and deepen scopes of practice of health professionals.
Undergraduate and postgraduate specialization in the United Kingdom came into force in the 1980’s and there are presently more than 25 specialties within the medical college workforce. Like many other countries, there is increasing recognition of the need for generalists as well as a need to define what is meant by generalist. To this end, the Royal College of General Practitioners conducted a study to define what is meant by generalist as follows:

“Medical generalism is an approach to the delivery of health care, be it to individuals, families, groups or to communities. Its principles apply wherever and whenever people receive care and advice about their health and well-being. The generalist approach applies equally to individuals and to clinical teams. It is one facet of medical professionalism.

Those adopting a generalist approach to the provision of care will need to recognize the limitations of their skills and experience and know when and where to enlist the most appropriate help, support and advice from colleagues – working across inter-professional boundaries and recognizing the interdependency of professional skills.” (RCGP & The Health Foundation, 2011; p.5)

In 2007, Sir John Tooke conducted an independent review of medical education and post graduate training in medicine and identified the need for a more flexible and broad based approach to medical training, integrating both training and service objectives into health workforce planning. Following this review, there was increased interest in developing generalism training for all post graduate training programs. There is a need to provide incentives and change the perceptions of general medicine in light of the fact that many students in the United Kingdom perceive generalists as second class citizens.

It is recognized that a generalist approach would support patient interests through the provision of care by a single doctor that deals with all issues as opposed having patients deal with all sorts of specialists. A generalist approach has also been considered for addressing burn out resulting from the provision of 24 hour care in emergency and acute care settings.

In terms of moving forward, the United Kingdom is working on strategies to address the issue of over reproducing doctors to meet future needs and to develop a better understanding of what students’ career ambitions are. The United Kingdom also recognizes the need to be more direct in directing trainees into specialties that are underrepresented such as psychiatry and to be more honest about the opportunity for employment with undergraduate and graduate students.
OPEN DISCUSSION: Assuring Adequate Generalists and Specialists

Panelists:
Lois Nora, American Board of Medical Specialties
Paul Dagg, IHA in BC and UBC
Peter Kopelman, SGUL
Mark Cormack, HWA

Moderator:
Edward Salsberg, NCHWA

Major Theme

Although there are clear benefits to specialization related to quality of care and advancing knowledge, interventions and technology there is also a tradeoff related to the maintenance of general skills. Thus, there is a need to create a balance between generalism and specialism which involve roles they play in the provision of care and better defining situations that require physician specific skills and those that can fulfilled by other health professionals.

Questions and Answers

The biggest problem in Canada is the disappearance of family medicine and the existence of silo-based disease management models in hospitals. Canadian physicians develop generalist competencies to work well in interprofessional teams and an important component of this approach is to look at your role within the team. If your role narrows however, you will lose sight of the teams’ impacts. In order to be able to function effectively as a team, members need to be able to do each other’s job and there is a lot that can be learned from small communities in this respect.

Paul (CD): Indeed there is a need to better understand the total management of individuals in interprofessional teams in order to be able to address the impact of narrowing roles which can result in a loss of competence.

What kind of needs assessments is being done for specialties?

Lois (US): Some needs assessments are being done in the United States at the regional level which have demonstrated the need for certain professions, however; there isn’t a lot of evidence that these needs assessments or workforce projections are very accurate. We know that practice changes over a physician’s work life and that most physicians tend to specialize more as their practices mature. The maintenance of certification process will provide the opportunity to assess what physicians are actually doing in their practices, which will be very helpful to understand practice migration to more specialized care.

Paul (CD): There is dialogue in Canada around this issue as well and there are also needs assessments being conducted for certain specialties such as pediatrics. The chair of pediatrics is collecting data from trainees regarding needs.

Peter (UK): The specialists in the United Kingdom drive their own agenda of what the requirements should be.
Mark (AU): Governments in Australia are already acting on specialty requirements in terms of stopping training in areas that are in excess such in cardiology and to increase training in areas that are experiencing shortages such as in psychiatry.

How do we incentivize the production of new generalist? It appears that the younger generation of medics is different from the older generation in terms of being better able to deal with uncertainty. Is this difference really about their ability better deal with uncertainty or is it a matter of inexperience? If the difference is really about inexperience, should we focus on encouraging them towards getting generalist training first and then specialize?

Peter (UK): In my opinion, the younger generation of students isn’t any different and is just as talented as the older generation. Their lifestyles and ambitions are different because the world they are experiencing is different and there is also much more to learn at undergraduate level than ever before. It is more challenging to try to get a specialist to generalize and it is best to have a generalist background and specialize later.

Paul (CD): In my opinion, those entering the field are more qualified than they once were. Canada is far too entry driven in the senses that students become subspecialists at beginning of training and there are no models to evolve over time. We need to start thinking much more about encouraging generalist training and about a physician life span approach to developing sub specialty or other expertise.
Conference Evaluation of Plenary #3

The following is an evaluation of plenary 3 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 44.** Participant Ratings: Quality of Presentations

![Graph showing participant ratings for quality of presentations.]

**Figure 45.** Participant Ratings: Quality of Papers Prepared for This Plenary

![Graph showing participant ratings for quality of papers.]

**Figure 46.** Participant Feedback: Question(s) Discussed Were Appropriate for the Theme of This Plenary

![Graph showing participant feedback on appropriateness of discussions.]

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**ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA**

**Health Canada**

**CHHRN (Canadian Health Human Resources Network)**
Figure 47. Participant Feedback: Concluding Discussion Adequately Summarized the Responses to Question(s) Discussed at the Tables

Figure 48. Participant Ratings: Overall Quality of the Presentations and Discussions

Figure 49. Participant Feedback: Improved Knowledge and Understanding of the Challenges Emerging From This Topic
Additional Comments

Positive Comments and Suggestions

- Enjoyed gaining some new insights from various countries.
- Very interesting session! There is a lot to follow up.
- Providing papers prior to the session was helpful in terms of providing background for the session.
- Would have been helpful to have a bit more discussion about other professions beyond medicine but realize that would have required more time.

Constructive Criticism

- Was a bit too specialty oriented.
- More focus on multidisciplinary team or work of other professionals would have been great.
- Participants should have been given adequate opportunity to engage the panelists. The chair should ask the first question only if there are no question forthcoming from the paying participants.
- Some of the presentations were not "on point" and there were few, if any, take-home messages.
- A few examples of other providers would have been helpful and perhaps some non-physician panel members would have been great as well.
- More discussion outside medicine would have been great.
- As long as we continue to talk about "medicine" we lose important component of generalist practices to promote health such as public health issues or oral health that are synergistic with overall health.
Wednesday May 8th 2013

PROCEEDINGS OF PLENARY #4:
Making Workforce Innovation Real

Facilitator:
Etienne Scheepers, Executive Director, Workforce Innovation and Reform Health Workforce Australia

Introduction

Mr. Etienne Scheepers, began with a brief description of the plenary with instructions on the procedure of the world café approach and reference to overview. Participants were also asked to refer to the briefs prepared by each of the countries prior to meeting for the purpose of discussion. Once the participants were divided into four different groups, Mr. Scheepers provided the following introduction to set the stage for the plenary.

SETTING THE STAGE

Innovation in service delivery and organization has been defined as a novel set of behaviours, routines and ways of working that is directed at improving health outcomes, administrative efficiency, cost effectiveness or users experience. Factors in innovation may include processes involving diffusion, dissemination, implementation and sustainability of something new or different. Innovation in the health workforce often starts with an individual or small group of individuals responding to a locally identified need in their health service. Most jurisdictions grapple with how these good ideas and small scale projects can be translated into large scale changes that can bring benefits across a large healthcare system. This session explores the policy, practice, implementation and research factors needed to successfully drive health workforce innovation on a large scale.

Canadian Innovation

Quebec’s Medical Home: Family Medicine Groups
Antoine Groulx, Ministry of Health and Social Services in Québec, Canada

Background

Stemming from recommendations of the Clair commission (2002) - an evaluation of health and social services in the province of Quebec - Family medicine groups were established in 2002. According to the commission’s main statement, a primary care model was needed to address common health care issues experienced in the province, which led to the implementation of the Family medicine group, a model designed to (1) improve access to health care, (2) ensure appropriate follow-up and coordination of patient’s lifelong care, (3) promote preventive care, (4) encourage effective dissemination of clinical and

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administrative information and (5) link the province’s network of social health centres (CLSC) more closely to physicians.

**Summary of the Innovation**

The Family Medicine Group model innovated on a variety of fronts. For one, this model was the first in Quebec to gather family physicians and create a formal and functional collection of health professionals that collaborate together on a daily basis. This model thereby encourages physicians from different settings to come together and share their expertise. In addition, this model promotes inter-professional collaboration as it involves the direct participation of nurses.

Another element that underlines the model’s innovative features can be observed in that it encourages a formal connection between the local social health centre (CLSC) and the Family Medicine Group using various modalities.

**Outcomes of the Innovation**

Ten years after its implementation, the model has expanded into 250 Family Medicine Groups. Their broad development has brought us to make quite a few discoveries on the model, elements that deserve our attention. In this context, the Ministry of Health is currently tweaking the model in order to reflect the variety of realities in which they must develop.

**Future Directions of the Innovation**

The Ministry of Health is currently working on improving the model and adapting its modalities. New features will include incremental funding and the development of outcome indicators, such as a loyalty indicator, which will capture patterns of patient consultations and help us determine to what extent each family medicine group has the ability to provide adequate access to its registered patients.

**World Café Discussion Notes**

*Elements of the Innovation That Contributed to its Success*

(*i.e. what are the critical success factors?*)

- Importance of collaborative practice.
- The voluntary bottom up, flexible approach rather than top down control.
- The medical residence and set up is valuable and appealing to residents when determining their training.
- Registration makes it easy for follow up of success.
- Doctors were satisfied with initiative and it is also appealing for young doctors.
- Providing tech assistance up front.
Key Drivers (at the Individual, Organizational or System Level) for the Innovation
(i.e. what led to the inception of the innovation?)

- Stemming from recommendations of the Clair commission (2002): a primary care model was needed to address common health care issues experienced in the province, which led to the implementation of the Family medicine group, a model designed to:
  1) Improve access to health care;
  2) Ensure appropriate follow-up and coordination of patient’s lifelong care;
  3) Promote preventive care;
  4) Encourage effective dissemination of clinical and administrative information; and
  5) Link the province’s network of social health centres (CLSC) more closely to physicians.

- Family medicine is an issue in terms of recruitment and there is a strong need for doctors in this area otherwise there can be big problems.

Quality of Evidence Supporting the Innovation
(i.e. what benefits have been brought at the individual, organizational or system level? What measures of success were used or could be used?)

- Evidence based- focus on what works best for primary care.

Other Comments or Feedback Worth Noting

- Loyalty indicator is important to keep in mind.
- Need to think about how to embed people to take care of themselves and care pathway approach and how to work with teams to do this.
United States Innovation

Dental Therapy: Improving Workforce Innovation in the US Context

Elizabeth Mertz, University of California, San Francisco School of Dentistry

Background

The US has struggled with low accessibility of dental care for many populations (i.e. elderly, low income, disabled, institutionalized), with as much as 1/3 of the US population estimated unable to get care. The 2000 US Surgeon General’s report on Oral Health noted workforce deficits and called for improved workforce diversity, capacity and flexibility. Until this time, the US state-based system of regulation of dental care, with regulatory boards dominated by dentists, had limited dental hygienists and assistants from expanding their scopes of practice. This trend began to change in the 2000s as dental hygienists made gains in liberalizing practice acts, and as public health advocates frustrated with the lack of progress in addressing the access issue, began efforts to introduce dental therapists into the US dental workforce.

Dental therapy (DT) is now a program of study and practice in 54 countries and has been in existence for 92 years. DTs are being promoted as a cost-effective way to expand access to primary dental care within the US, particularly with underserved populations.

Summary of the Innovation

In 2001, an initial proposal to the Robert Wood Johnson Foundation was submitted to pilot dental therapy within the US Indian Health Service. While RWJF did not pursue this, funding for the project was secured from the Alaska Native Tribal Health Consortium (ANTHC). In 2003, six students from Alaska were sent to New Zealand to be trained in the Dental Therapy Program. This was followed by a high profile court case where the American Dental Association and the Alaska Dental Association sued ANTHC claiming DTs would violate the Alaska’s dental practice act. The courts ruled in favor of ANTHC due to the fact that these organizations did not have jurisdiction over tribal health. In 2005 the new DTs returned from their training and started working in ANTHC, as dental health aide therapists (DHATs). In 2007, the University of Washington opened up the first dental therapy training program in the United States, allowing Alaska Natives to be trained in the US.

Following this battle, two major health foundations, the Pew Charitable Trusts, Center on the States, and in the W.K.Kellogg Foundation, launched major workforce campaigns to expand the dental workforce through such initiatives as dental therapists. In 2009 the state of Minnesota authorized the training and practice of two levels of dental therapists, the Dental Therapist (DT) and Advanced Dental Therapist (ADT). Licensed providers of both sorts are now in practice.
Outcomes of the Innovation

The DT movement in the US is quite controversial, but is gaining ground. To date, three different types of providers (DHAT, DT and ADT) now are in practice across two states, with several additional states pursuing training and licensure of DTs. The original introduction, the DHAT in Alaska, has undergone several evaluations, all of which have been positive. The Minnesota Dental Therapists are being widely studied, and to date preliminary evidence has been positive.

The organizations that are employing dental therapists outside of Alaska (where they are solely employed in ANTHC) for the most part are large group or integrated practices, or non-profit dental care groups. If improvements in access and reductions in cost are shown to exist while quality is maintained, it is likely that this innovation will be further adopted by US states.

Future Directions of the Innovation

Spread of the practice will be contingent on several factors

- Further state legislative adoption and incorporation into practice acts. Additional states, including Ohio, Oregon, Kansas New Mexico, Vermont, Washington, California, New Hampshire and Maine have, or are considering, approving DT practice.
- Ability to sustain movement momentum - currently efforts involve grass roots advocacy and high level foundation support.
- Training program availability (including accreditation). CODA, the organization which currently accredits all dental education has been reluctant to move forward with an accreditation process, but other groups are developing standardized curricula and competency areas. The key issues is the level of the education, DHATs are educated post-high school, while the DT is a Bachelor's or Master's degree and ADT is a Master's degree.
- Payment reform – both general dental insurance coverage of underserved populations and ability to pay DTs as providers under these programs.

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7 See http://www.adha.org/legislative-tracking

12 Bolin, 2008a
14 http://depts.washington.edu/dentexak/dentex-program/
15 http://www.metrostate.edu/msweb/explore/gradstudies/masters/msadt/

World Café Discussion Notes

Elements of the Innovation That Contributed to its Success
(i.e. what are the critical success factors?)

Three key factors

1) Certification of quality.
2) Accreditation.
3) Liability of dental therapy.

Additional factors

- Recognition and early adaptation
- How the accountable care act can support dental therapy
- Dental therapists are employers of private practice

Key Drivers (at the Individual, Organizational or System Level) for the Innovation
(i.e. what led to the inception of the innovation?)

Identifying tools to scale up innovation

- Accreditation
- Legislation
- National Infrastructure

Quality of Evidence Supporting the Innovation
(i.e. what benefits have been brought at the individual, organizational or system level? What measures of success were used or could be used?)

There is no evidence or quality metrics in dental therapy in the United States.

Questions for Consideration

- What evidence exists in diverse settings?
- What is the competition for care for dental therapy?
  - Utilization issue.
- What are the outcome measures and measurement issues for dental therapy?
- Why should we care enough to make an investment?
  - Voice for underserved population.
Other Comments or Feedback Worth Noting

Barriers to Success
- The dental therapist model is used in a number of countries but most folk aren’t aware of it.
- Credibility is an issue for dental therapists much like it is for physician assistants.
  - Level of knowledge is low- Masters led.
- Resistance from hygienists?

Needs Assessment of Dental Therapy in Oral Health
- Why is dental therapy important?
- What are the scopes of practice of dental therapy and what function do they serve?
- Look at the history of physician assistants for planning dental therapists and demand for dental therapists.
- Look at take up by private practice and underserved areas.
- Investigate the education system for dental therapy in other countries that have adopted it.

Costs of Dental Therapy
- Is dental therapy cost effective? Is it cheaper?
- What financial drivers exist?
- To what degree are advocates using cost for dental therapy?

Other Consideration
- Look at preventive agenda, not just outcomes of dental therapy?
United Kingdom Innovation

Workforce Planning Along Care Pathways

Meena Mahil, Centre for Workforce Intelligence

Background

It is widely accepted that integration is key to delivering more effective and efficient care and that the workforce will play a huge role in achieving this goal. Although improvements in the quality of service planning have been made over the last few years, workforce planning for health and social care continues to be challenging. Care pathways are commonly used for service delivery planning in the NHS but this planning is rarely completed alongside workforce planning. The traditional care pathway approaches keep people who use services at the centre of the journey but generally do not take the skills, competencies and requirements of the workforce into consideration.

Summary of the Innovation

The CfWI care pathways toolkit is designed to guide users through a methodology for workforce planning along a care pathway. It can sit alongside integrated pathway development, or be used to analyze and improve the current workforce structure. The toolkit adds a robust workforce planning component to pathway redesign, and aims to encourage integrated workforce planning between different organizations. This should result in patients and people who use services receiving a more joined-up service from those delivering their care.

We have designed the toolkit to be used by anyone responsible for local-level workforce planning. By working through the stages of the toolkit, users will obtain detailed information about:

- The key activities that need to take place for a person to move along the care pathway.
- Who is currently carrying out these activities?
- The skills needed to carry out these activities effectively.
- Bottlenecks in the pathway, and the workforce reasons behind them, e.g. skills gaps.

This information feeds into an analysis of the workforce, which allows toolkit users to explore different scenarios for how the existing workforce could be used. Based on this analysis, and their local needs, users can make decisions about how to deploy the workforce to deliver the best outcomes for patients and people who use services in a cost-effective way.

The toolkit provides a structured and systematic approach to analyzing care pathways in terms of the workforce. Several benefits can be realized by following this approach.
For example, the toolkit can help to:

- Identify current/potential bottlenecks.
- Improve understanding of what is needed to deliver the pathways.
- Investigate different workforce and pathway scenarios.
- Make better use of the workforce and other resources.
- Support service redesign to improve outcomes and potentially release cost savings.
- Integrate health and social care services.

The toolkit was trialed on an integrated discharge care pathway in two local health economies covering acute, community and social care organizations. In these organizations, the toolkit was used to identify, analyze and propose an effective solution to workforce-related bottlenecks along a care pathway. In one area, the toolkit identified a recurring workforce saving by revising the role of one resource. The full potential of the toolkit has not yet been realized, although it is clear that there are opportunities to identify further savings by following the approach.

**Future Directions of the Innovation**

The toolkit is currently available for use by any organization online and can be accessed at: www.cfwi.org.uk/care-pathways. The toolkit has also recently been used in the CfWI maternity project. The project is aiming to create a focused workforce modelling tool that is specifically relevant to a nationally defined maternity care pathway. The maternity care pathway aims to work with providers to produce a modelling tool to support individual maternity services to analyze their whole workforce (not just midwives) as part of any service redesign in order to meet future demand.

We are currently undergoing an extended evaluation period, lasting until summer 2013, during which we will be measuring uptake and soliciting feedback on the toolkit. We will then review the toolkit once more and make improvements as necessary. We are also exploring the possibility of modelling skills and competencies using our systems dynamics framework.

**World Café Discussion Notes**

**Elements of the Innovation That Contributed to its Success**

(i.e. what are the critical success factors?)

- Able to use the toolkit to highlight small issues that have a big impact.
- The toolkit is quite prescriptive and the process templates capture significant details including data and feedback including key outcomes and improvements.
- There is buy-in at the very senior level as well as an evaluation plan.
- CfWI was leading the process.
- Organizations have access to technical assistance to complete project.
- Technique can be migrated upstream (i.e. to prevent hospitalization).
Key Drivers (at the Individual, Organizational or System Level) for the Innovation
(i.e. what led to the inception of the innovation?)

- The need for a champion who reorganizes the problems and puts value on innovations with evidence to support the innovation with regards to its effectiveness.
- Return on investment.
  - Staff satisfaction.
- The need to acknowledge and reward innovation which initially takes time and resources.

Quality of Evidence Supporting the Innovation
(i.e. what benefits have been brought at the individual, organizational or system level? What measures of success were used or could be used?)

- Toolkit was able to deliver evidence regarding effectiveness that was not otherwise available.
- Evidence for cost savings can be generated.
  - But will this make things better for the patient?

Other Comments or Feedback Worth Noting

Additional Questions
- Strategies for sustainability?
- What are the unintended consequences?

Additional Consideration
- Providing more direct incentives to use the toolkit.
  - Showing that there are cost savings.
  - *but will this make things better for the patient?*
- Ongoing refinement and adjustments of tools and templates.
  - To allow those with technical skills to use it.
  - To make them easier to use.
- Scaling up the innovation.
  - How to scale-up the individual attention given in pilots?
  - Concerns of scaling up to large scale pathways.
- Applicability of process for more than one pathway
  - Consider patient perspective and the fact that with multiple co-morbidities patient may face multiple care pathways.
- Values and issues of using early adopters to drive implementation.
Australian Innovation
Health Professionals Prescribing Pathway- A National Approach to Prescribing for the Australian Health Workforce
 Nicholas Lord, Health Workforce Australia

Background

Australia is among numerous first world countries (including the United States of America, New Zealand, Canada and United Kingdom) to introduce limited forms of prescribing by non-medical health professionals. The Australian experience of prescribing by non-medical health professionals has been mixed.

Health professions have sought to adopt prescribing within their scope of practice with few established reference points or requirements beyond their own profession. The education sector has sought to adopt and integrate prescribing education and training to health professionals without reference to a recognized inter-disciplinary standard of education or process that assures the quality of prescribing education. State and territory jurisdictions, having responsibility to legally authorize health professionals to prescribe medicines, have experimented and implemented ad-hoc for non-medical prescribing, which may support localized need but introduce barriers to mobility and flexibility in the workforce.

Summary of the Innovation

The aim of the project was to develop a nationally consistent enabling approach to prescribing by health professionals other than doctors. Key topics within this approach were identified early in the project as being:

- Consistent prescribing education and training to a nationally recognized standard.
- A national approach to recognizing the competence of a health professional to prescribe.
- Developing safe models of prescribing practice, supported by appropriate local and jurisdictional governance processes.
- Ensuring an appropriate system of maintaining and enhancing the practitioner competence of a health professional to prescribe.

The health professionals prescribing pathway describes:

- The steps that a health professional must complete in order to safely and competently prescribe.
- The safety and quality requirements that support each of the pathway steps.
- The roles and responsibilities of all stakeholders in the prescribing process.
- Prescribing models that support safe practice.
Outcomes of the Innovation

In January 2013, HWA released a draft HPPP for feedback from stakeholders. The consultation period closed in March 2013, and the final HPPP has been prepared for government consideration, along with recommendations for national implementation. In addition, the development of a prescribing pathway has strong support from Australian consumers, with a qualitative survey of 1,033 consumers reporting that 81% support the development of non-medical prescribing provided appropriate safeguards are in place.17

Future Directions of the Innovation

Future work to support, adopt and implement the HPPP is proposed to include:

- Diffusion of an established prescribing competency framework as a standard for prescribing education for health professionals.
- Development of consistent standards for recognition of competence by health professional boards and accreditation councils.
- National mechanisms to confer authorization to prescribe.
- Support for current initiatives in communication and information support, including electronic health records.

World Café Discussion Notes

Elements of the Innovation That Contributed to its Success
(i.e. what are the critical success factors?)

- Length of time for provision of this innovation?
  - Time to go from step A to B.

Key Drivers (at the Individual, Organizational or System Level) for the Innovation
(i.e. what led to the inception of the innovation?)

Regulatory Issues:

- Who is the final authority? Or is it a consensus amongst government and all stakeholders?
  - Regulatory issues.
  - Safety issues.
  - Length of time.
- Top of totem pole: concerns regarding who has authority to prescribe.
- Consistency and safety at the state level (legislation).
- How will regulation and interfaces at regulatory points allow process to proceed?
- Possibility of bypassing this process to obtain rights to prescribe? (will the state listen?)

---

Quality of Evidence Supporting the Innovation
(i.e. what benefits have been brought at the individual, organizational or system level? What measures of success were used or could be used?)

Conducting an Evaluation of the Innovation
- How to evaluate whether the process is safe and effective?
- Evaluation at both individual consumer level and system-based level.
  - E.g. women's ability to access contraceptives
- Consistency of process.

Other Comments or Feedback Worth Noting

Additional Questions
- What is meant by “prescribing”?
  - Medication only or diagnostic tests also?
- In which step is the issue of prescribing being included?
  - Link to diagnosis.
- Who can dispense the medication? Which professions are being covered?

Safety Issues and Concerns
- Evaluating the safety of the process.
- Safety of a particular profession prescribing.
  - Acquiring the expertise to understand all issues that come up (e.g. recognizing side effects of medication).
  - How to prevent misuse of prescribing power.

Barriers to the innovation
- Professional Acts due to different requirements.

Additional Considerations
- Applicability to other contexts and professions.
  - Another activity that this innovation can be applied to?
  - Is this process or model applicable to a variety of issues?
  - Interprofessional issues (i.e. who is allowed to do what?)
OPEN DISCUSSION: Making Innovation Real

Presenters:
Elizabeth Mertz, University of California,
Antoine Groulx, MSSS, Québec
Meena Mahil, CfWI
Nick Lord, HWA

Facilitator:
Etienne Scheepers, HWA

Questions and Answers

How can we engage consumers to adopt these innovations?

Elizabeth (Dental Therapy): Innovations tend to get adopted when consumers have different power such as in underserviced population. How to engage consumers to have a voice is a tough question as their level of knowledge of the medical care system is generally low. So rather than engage these populations in adopting an innovation we should educate them.

Meena (Care Pathways): Innovations tend to get adopted when consumers and patients see the benefits. For example, the benefits of using the tool or how it will make your life easier with respect to the job that you do. The best way to engage consumers is to be up front about its use and practicality so that they want to use.

Nick (Prescribing): It is important to collect and build on qualitative information throughout the innovation process. In the case of prescribing, this could include obtaining information on what makes a good prescriber. There may be tension in the process when managing stakeholders demanding quantitative facts but nevertheless obtaining qualitative information is just as important.

What is the best way scale up innovation at a large scale? Is conducting pilot studies at some location before diffusing a good approach?

Meena (Care Pathways): It is helpful to conduct pilot studies in a local area and then discuss the findings with other areas as it would help with the adoption and diffusion of the innovation. However, it is difficult to help with its adoption and application at the operational level. With regards to diffusion, it is best to bring the experience developed at the local level to other areas to assist with its adoption and application to ensure that it is being used as intended.

Elizabeth (Dental Therapy): In the context of the United States, you have to consider its adoption in fifty states you need to provide evidence to show that it works in order to allow them to decide whether or not to adopt it. With regards to adoption at the national level one might consider such factors as credentialing and federal financing and to develop an infrastructure to adopt and set up a framework for other states. Another strategy to encourage adoption is to engage and get buy-in from larger institutions with regards to the benefits of the innovation so that they are keen on promoting it and getting it into politics with professional associations.
Nick (Prescribing): With regards to the prescribing innovation, large scale adoption is really a judgment call that is based (to some degree) on the maturity of the system. In order to scale up such an innovation, there needs to be a proper framework in place in order to enable a more systematic, large scale approach.

Antoine (Family Medicine): With regards to the family medicine innovation, working with professionals and speaking to the needs of the population plays an important role in large scale adoption. The best way to encourage adoption is to start from a bottom up rather than top down approach.
Conference Evaluation of Plenary #4

The following is an evaluation of plenary 4 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 50.** Participant Ratings: Quality of Presentations

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**Figure 51.** Participant Ratings: Quality of the Papers Prepared for This Plenary

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**Figure 52.** Number of Participants at Each of the Tables

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</tr>
</tbody>
</table>
Figure 53. Participant Feedback: Ideas and Discussions Generated at the Table Were Relevant to the Innovations Presented in This Plenary Session

Figure 54. Participant Feedback: Concluding Discussion Adequately Summarized the Responses and Ideas Discussed at the Table

Figure 55. Participant Ratings: Overall Quality of the Presentations and Discussions
Additional Comments:

Positive Comments

- Enjoyed the world café format! Would be great to have more innovative session like this at every IHWC conference.
- Great opportunity to work in the small groups to discuss the four innovations.
- This was the best session so far and would suggest using this format again in the future.
- Brilliant use of the "speed dating" format as an innovative approach to imparting a lot of info to a lot of people and discuss innovation! Excellent session, excellent speakers and excellent topics!

Constructive Criticism

- Discussion was very challenging as a result of poor audio and poor moderation in one of the innovations. Also the format did not lead to greater in-depth questions due to time constraints. The session felt a bit too rushed.
- The format was a great idea but they should have provided separate rooms for each group because even 2 groups in one room were very distracting. Facilitators should also have used microphones as one of the presenters was losing her voice.
- The objective of the group discussion was not always clear.
- It should have been obvious to meeting planners that separate breakout rooms would be needed for this type of session however, the format was great.
- What was presented was not particularly innovative in the sense that dental therapy and family medicine groups have been around for some time. Curious about the NHS presentation and will seek out additional information.
- Providing more time to pull all 4 presenters’ comments together as well as more structure for feedback would have been helpful.
- Two of the four presentations were too brief and not well-focused. In those cases there was not a clear statement of goals such as what issue the innovation was addressing and of how the success of the project would be evaluated.
- Discussions pertaining to evaluation could have been stronger in all cases.
Although the smaller group format was great for interaction, the structure of set-up was imperfect and the discussion was dominated by a few in some instances.

Ability to really learn about the project and provide good feedback in the work café format was difficult. It would be best to use this format once we have had the chance to first learn about the innovation.

The set up was not ideal and handouts would have been helpful as it is otherwise difficult to comment on an innovation when we've only had a couple of minutes to understand it and could have improved discussion.

The link to workforce innovation was sometimes challenging to make.

Best to have presenters that really know the innovation they are presenting as one of the presenters did not seem well versed.

Would have been great to be able to get into much more depth however, this plenary did provide a good overview of interesting innovations.

Insufficient time to discuss some of the innovations and engage in individual discussions.

Suggestions

Would have been good to have presenters begin their presentations with a question that they would like the group to discuss/answer and provide background information well beforehand in order to help focus the discussion a bit more.

This session didn't really work. Innovative method evaluation doesn't take us forward rather we need to present more evidence.

Interaction is essential. An interactive format like this would be great for future events.
PROCEEDINGS OF CONCURRENT SESSION #1:
Recognition and Integration of Internationally Educated Health Professionals

Moderator:
Steve Slade, Director, CAPER and Vice President of Research and Analysis, CAPER-ORIS

Introduction

Mr. Steve Slade, began with a brief description of the plenary and introduced each of the panelists in turn and then invited the first panelist to present as follows.

Australasia: Foreign Qualification Recognition
Peter Allen, Australian Health Practitioner Regulation Agency

The following presentation paints a picture of the Australian context at a high level and the reforms that have occurred in the last years with respect to recognition and integration of internationally educated health professionals in the country.

Australia’s National Reform

Australia is heavily dependent on overseas practitioners to meet population health needs. Roughly 45% of Australia's health practitioners are overseas trained. Australia has achieved significant reform over the past few years with the establishment of a National Scheme consisting of fourteen National health profession boards which regulate just under 600,000 registered health practitioners. While this is a national scheme, it is not national law in the sense that each state and territory has authority over health workforce decisions. The purpose of the National Scheme is to enable national consistency both across and within professions in terms of common standards and processes. This in turn has opened up significant opportunity for better meeting the health needs of the Australian population as it enables a nationally consistent customer experience for the public, health practitioners, employers and other stakeholders. Furthermore, supporting work was contracted out across several national health boards which allowed for a greater level of professional support, problem identification and even addressing health workforce issues Australia shares with other countries.

Internationally Educated Health Professionals in Australia

The assessments of IEHPs in Australia are mostly conducted by a national board’s accreditation authority such as the Australian Medical Council but in some cases, the national board itself may conduct assessments. National boards develop immigration standards using the best available evidence and through wide ranging consultation and National Law grant a national board the power to grant registration on the basis of equivalency of qualifications or through the successful completion of an examination.
With respect to the registration of IEHPs in the country however, Australia still has a long way to go. A recent parliamentary inquiry into the registration processes and support for IEHPs (doctors) identified the need to reduce red tape, duplication and administrative hurdles while ensuring that the Australian standard continues to be rigorously enforced. Efforts are being made to improve the process and the national framework will help ensure that improvements are implemented consistently across and within professions.

**Challenges**

Challenges still remain with regards to assuring national consistency of board decisions and organizational process and balancing workforce needs against risks to the public such as regulation without justification. Another significant challenge is to balance the unique characteristics of each health profession with standardization and to maintain the confidence of multiple, successive governments.
Internationally Educated Health Professionals: Highlights from a Canadian Perspective
Ivy Lynn Bourgeault, Canadian Health Human Resources Network

Canada considers itself to be in the midst of a shortage of some cadres of health professionals but in a sense that it is less of a pure shortage and more of a distribution issue. Internationally Educated Health Professionals (IEHPs) represent a potential solution to address this issue, particularly with respect to addressing the issue of shortages of nurses in the older adult care sector or of physicians in rural and remote areas of the country. The utilization of IEHPs and their transition into the Canadian workplace is not always smooth.

CHHRN IEHPs Knowledge Synthesis

To begin to assess the state of the growing literature on IEHPs in Canada, the Canadian Health Human Resources Network undertook a knowledge synthesis of Canadian literature on the topic of recruitment, retention and integration of Internationally Educated Health Professionals in Canada. Given that there has been a lot of funding in this area and the synthesis would provide an opportunity to summarize existing knowledge and identify gaps. Key findings in this synthesis were collected from 400 sources of information which include both published and grey literature. The following are a few of the key highlights taken from the synthesis.

Pre-Immigration Activities/Programs

The experiences of IEHPs differ largely between those who have been recruited, those who have undertaken professional recognition activities prior to immigrating and those who have not. There is also increasing recognition of the consequences of active recruitment from low to middle income countries, but some instances of active recruitment persist, particularly of nurses in the Philippines and to a lesser extent, physicians and pharmacists.

Early Arrival Activities/Programs

There are also issues of system navigation, financial support through loans and case management approaches in Canada which helps to address the barriers to integration. In Canada, early system navigation is supported through micro financing programs or utilizing a case management approach, such as the one undertaken by the Access Centre for Internationally Educated Health Professionals.

Credential Recognition & Professional Recertification

The main concerns identified in Canada are related to credential recognition and recertification of which there are three general themes:

1) The process is seen as opaque by IEHPs.
2) The recognition of this experience by many stakeholders.
3) A number of policies and programs that have been put in place to respond to the concerns raised.
What is not yet clear, however, is whether the policies are fully addressing concerns. That is, there is an inherent time lag in the impact of the recent policies and programs on the experiences of IEHPs. They are also fairly recent so literature does not reflect this lag.

We suspect, however, that there will be a number of IEHPs who have ‘been in the system’ for a sufficient length of time that their chances of professional recognition are significantly diminished. We are moving towards more standardized portals and one-top-shops for credential recognition and recertification but at present, no central portal exists.

**Bridging and Residency Programs**

What we know from the literature about bridging and residency programs is that despite the wide variation in the content and structure of bridging programs, they are often identified as promising practices for facilitating the integration of IEHPs. Upon completion of bridging programs, IEHPs reported having a better knowledge of the culture of health care in Canada practice and improved communication skills. A common lament in the literature about bridging programs is that funding is often isolated and temporarily. This draws attention to the need for continuity of funding and better integrated bridging programs both within the professional infrastructure as well as interprofessionally.

**Workplace Integration**

Finally, workplace integration is another layer of barriers and discrimination to the migration of IEHPs on top of what is described above. Employers play a critical role in this process but literature is lacking with regards to their perspectives. Therefore, more explicit examination of their perspectives on the role they could and should play is a promising area for research development.
United Kingdom: Foreign Qualification Recognition

Dr. Peter Kopelman, St George's, University of London

During the last two decades there has been substantial change with regards to the recruitment, recognition and recognition of IEHPs in the United Kingdom; particularly since the establishment of the European Union.

Requirements for Doctors in the UK

In order to practice as a physician in the UK, International Medical Graduates (IMGs) are required to register with the General Medical Council (GMC) and satisfy the UK’s strict immigration rules which include being licensed by the GMC, following the GMC’s Good Medical Practice guidance and being subject to the Fitness to Practice Actions; all of which put up barriers for migration.

Requirements for Nurses in the UK

With regards to nurses, there are always shortages in the UK and nurses from the European Union have free access to the UK. Historically the UK was dependent on the recruitment of nurses from commonwealth countries but this is not so much the case anymore. In 2008, a series of policy changes were enforced which made it much more difficult for non-European Union nurses to enter the UK; through the introduction of a point-based work permit system.

Professional Mobility in Europe

The European Union has grown enormously with more and more countries joining. Consequently significant changes have occurred in EU countries including:

- **Diminished Importance of Foreign Linguistics in Schools as a Related to:**
  “Persons benefiting from the recognition of professional qualifications shall have knowledge of languages necessary for practicing the profession in the host Member State”. European Commission International Market and Services DG, Requirement to Exercise the Profession- Article 53 of Directive 2005/36

- **Increased Professional Mobility Across Europe Provided One Qualifies in Host Member States Related to:**
  “The recognition of professional qualifications by the host Member State (MS) allows the beneficiary to gain access in that MS to the same profession as that for which s/he is qualified in the home MS and to pursue it in the host MS under the same conditions as its nationals”. European Commission International Market and Services DG, Same Rights and Obligations- Article 4 of Directive 2005/36
Requirement for Professional Development in the Educational System in the New Country to Ensure Safe and Effective Practice Related to:

“In accordance with the procedures specific to each MS continuing education and training shall ensure that persons who have completed their studies are able to keep abreast of professional developments to the extent necessary to maintain safe and effective practice”. European Commission Internal Market & Services DG, CPD for Privileged Professions- Article 22 of Directive 2005/36

The EU also promotes the sensitivity of linguistics for those with a poor understanding of the language in the sense that each state can set their own linguistic tests.

Foreign Trained Doctors Practicing in the UK

The UK is experiencing a strikingly changing workforce and a strong drive to become more self-sufficient at the beginning of the century. Recent evidence has shown that the large majority of the doctors in the UK (approximately 63%) obtained their Primary Medical Qualifications within the country, 10% within EU countries outside of the UK and a significantly smaller proportion (approximately 23%) have obtained their Primary Medical Qualifications within non-EU countries. Of those who obtained their Primary Medical Qualifications from non-EU countries, the large majority (approximately 10%) were obtained in India.

Foreign Trained Nurses Registered in the UK

The UK is also seeing an expansion of the nursing profession however at the present time, there remains a requirement to recruit nurses trained outside the UK.

Revalidation

A large chunk of our health workforce in the UK will be retiring soon. There are new issues emerging with regards to revalidation which is now a requirement in the UK whereas in some EU countries this is not the case; this may create barriers to the mobility of doctors.

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Recruitment of Foreign Educated Health Professionals to the US

The Public Policy Imperative

Patricia Pittman, George Washington University

Issues regarding the recognition and integration of internationally educated health professionals are similar across all six countries and there is a need to grapple this from a public policy perspective.

Internationally Educated Health Professionals

One framework that can be used to address this challenge is to assess three things: the level of flow, quality of integration and the responsibility of the destination country in terms of international impact. Following the recession, the United States developed a more stable production of medical graduates within the country. However, there continues to be significant dependency on the recruitment of health professionals from abroad.

Nurses and Physicians

Census data obtained from the American Community Survey reveals that the Registered Nurses workforce has the highest absolute number of foreign-born health professionals of all professions in the US health workforce\(^2\). Since many foreign-born nurses entered the US as children, non-citizenship is one way of estimating the more recent migrants. This number amounts to 3% of overall nurse stock. The physician workforce has the highest percentage of health professionals that do not have US citizenship in comparison to all other professions in the US health workforce; representing approximately 7% of the total stock of physicians in the United States.

Allied Health Professionals

Within the allied health workforce, clinical lab technologists and physical therapists have the highest percentage of foreign-born health professionals in comparison to other allied health professionals; each representing approximately 12% of the total stock of their professions of which a significant portion do not have US citizenship (i.e. approximately 6% of physical therapists and 4% of lab technicians respectively).\(^2\)

Efforts to Improve Ethics of Recruitment and Integration of IEHPs

There are also several efforts in place to improve the ethics of recruitment and integration of internationally educated health professionals.

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The proposed comprehensive immigration reform, which has been approved by the Senate and is under consideration by the House, includes:

- A national agency responsible for overseeing a new point system involved in the recruitment of IEHPs as well as collecting and tracking data on IEHPs.
- Clear the visa backlog of foreign educated Registered Nurses, particularly those from India and the Philippines (See Table 11).
- Movements towards harmonization of requirements for credentialing.

**Table 11.** Backlog of Foreign-Educated RNs by Select Country.

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Notes:
* NCLEX examination statistics by country are not publicly available for 2011 and 2012. These numbers were imputed by using the % change in the overall number of first time internationally educated NCLEX-RN passers. In 2011, the number of passers decreased by .059% and in 2012, the number decreased by .14%.
** As of April 2013. See [http://www.travel.state.gov/visa/bulletin/bulletin_5905.html](http://www.travel.state.gov/visa/bulletin/bulletin_5905.html)
† For countries with the priority date 7/1/2007, only passers from July – Dec. were included.
‡ For countries with the priority date 9/8/2006, only passer from Oct. – Dec. were included.

Source: Pittman, 2013

There have been a lot of complaints from IEHPs with regards to their experiences in the United States as a result of such things as inadequate clinical and cultural orientation, patient backlash due to frustration with foreign accents and team integration challenges resulting in different cultural rolls within the profession. In addition, for many years foreign born nurses were paid significantly less than their American counterparts, largely as a result of the fact that contracts were signed while still in their home countries, without the opportunity to compare opportunities.

Of most concern, should immigration reform pass, is how to manage the influx of international nurses that were in the pipeline, but for whom there are not necessarily jobs any longer. On the one hand, we are responsible as a nation for many of these people having studied nursing in the first place, and now, with many of them carrying high student loans, it is only fair to follow through with the job offers. On the other hand, the numbers of new nurse graduates in the US, in combination with the impact of the recession on US nurses staying the workforce, the number of vacancies has dramatically dropped.
OPEN DISCUSSION: Internationally Educated Health Professionals

**Presenters:**
Patricia Pittman, George Washington University  
Ivy Lynn Bourgeault, CHHRN  
Peter Kopelman, SGUL  
Peter Allen, AHPRA

**Facilitator:**
Steve Slade, CAPER

**Questions and Answers**

**How do the issues of self-sufficiency and fluctuations of over and under supply in countries play out in the rural and remote areas of these countries?**

**Ivy (CD):** Following the World Health Organization’s international code for self-sufficiency, there were discussions in Canada with regards to increasing the number of students produced in our medical schools but we recognized that there would still be distribution issues, especially in rural and remote areas of the country. Although there have been efforts to increase recruitment and retention of physicians in these areas, including policy tools that range from 3-5 years of return of service, there isn’t any strong evidence to see whether these tools are actually effective and they are not long-term solutions to the recruitment problem. There are however, a higher percentage of international medical graduates in rural and remote areas, hard to fill sectors and long-term care and as such, there has been discussion with regards to considering passive instead of active recruitment of internationally educated health professionals in these areas. In this sense, IEHPs would have to go through a point system in order to come into Canada in which they would get points for their education. There is some justification with regards to active recruitment of nurses from the Philippines as it would provide mutual benefits that in terms of creating a balance between the oversupply of nurses in the Philippines and undersupply of nurses in Canada.

**Peter (AU):** Australia went from a situation of oversupply to undersupply and so in order to be able to address the issue of self-sufficiency; we needed to improve the quality of national data available in order to define problems and construct solutions in a well-informed, evidence-based manner. Health Workforce Australia is the national entity that provides leadership in this regard and is dedicated to the collection, improvement and presentation of such data. Moving forward however, we will continue to recruit from the rest of the world because at present, we are not able to be self-sufficient nor are this our present focus.

**Peter (UK):** Self-sufficiency is hard to define because we assume a conventional workforce and what the requirements will be. The unfortunate element is that there is free movement of doctors from common wealth countries. From the European Union perspective, there is more movement into the United Kingdom including an increase in the medical workforce coming from Greece, Portugal and Spain largely as a result of competitive salaries.
How would immigration reform impact the international physician workforce?

**Patricia (US):** The United States is in the process of debating legislation that would, among other things, change the way we regulate flow of IEHPs by through a point system process in which higher points will be provided to those with more education. This will make it easier for physicians to enter the United States. However, if they are able to obtain permanent residencies immediately, they will no longer be required to practice in rural areas of the country.

**What are some of the issues the countries are facing with regards to the immigration services available to internationally educated health professionals?**

**Peter (AU):** There was a recent parliamentary inquiry which highlights the major frustration with regards to glitches in the system which creates challenges for internationally educated health professionals to migrate to Australia. Although the building blocks are there, there are challenges within the system with regards to making it work effectively and in terms of making it a more accountable and transparent process.

**Peter (UK):** Immigration is a hot topic in the United Kingdom. The point system that is being introduced in the UK is political rather than practical which dissuades people from migrating to the UK. In my opinion, mobility in professions should be encouraged to gain experience in other countries.

**Ivy (CD):** In the Canadian context there isn’t a requirement stating that IEHPs have to have a job and this is a policy problem. The large portion of IEHPs in Canada are not integrated or have a license and are working in restaurants as opposed to working in their field. Trying to figure out immigration policy is also challenging as there seems to be new things announced every two weeks which makes it hard to follow.

**The Netherlands is particularly vulnerable to doctors leaving the country. What strategies are there to retain doctors that are already in the country? It is important to recognize that migration is only part of the issue, the other part is emigration. It doesn’t make sense to discuss one without the other.**

**Ivy (CD):** We are also experiencing this issue in Canada and the United States and it is a complex issue in which at present there are no hard and fast solutions. At best, we can begin to capture immigration and emigration trends through data in order to enable to better understand the issue. We have developed much better data for capturing immigration and emigration in Canada.

**Nations should work together to promote self-sufficiency and improve health workforce planning so that we are not dependent on migration and to provide more opportunity for employment to our own citizens, especially given high unemployment rates. If we are unable to get our own citizens to work in rural areas of the country how can we expect this of others?**

**Peter (AU):** Through Health Workforce Australia we are improving our data to provide a better understanding of these issues and better inform decisions for going forward.
Distribution is a persistent problem that remains unchanged and is also specialty dependent. Medical schools have failed to address this issue in terms of addressing a multitude of factors that affect distribution such as who will go to medical school, how it is delivered and where. What is the best way to address this issue?

Ivy (CD): Distribution is a complex, multi-layer issue that will require a multi-level intervention and preparation. Deployment is a significant factor in distribution and we tend to use carrots as opposed to sticks for guiding deployment of the health workforce. We need to enforce very strict rules like that in midwifery where one needs to show a need in order to get a license and adopt it consistently to other professions.

There are a number of challenges with regards to the definition and distinction between recruitment and migration in the WHO code. In terms of data, we should look at the effectiveness of the code moving forward. Also, Canada needs to be careful in terms of what is meant by active and passive recruitment.

Patricia (US): The United States was among the last countries to agree to sign the code. Yet it appears now to have taken the code more seriously than some other countries. The issue however, is that while reporting requests have been respected, the Code has not really led to a change in policies, at least in the US. Until we take evaluation of the code more seriously, it will be difficult to push nations to modify their policies.
Conference Evaluation of Concurrent Session #1

The following is an evaluation of concurrent session 1 which summarizes data and feedback from participants who have attended the session and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 57.** Participant Ratings: Quality of Presentations

<table>
<thead>
<tr>
<th>Number of Respondents</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
<th>Not Provided</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>0</td>
<td>11</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 58:** Participant Feedback: Question(s) Discussed in This Session Were Appropriate for the Theme of This Session

<table>
<thead>
<tr>
<th>Number of Respondents</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Disagree nor Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>Not Provided</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1</td>
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<td>9</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

**Figure 59:** Participant Feedback: Concluding Discussion Adequately Summarized the Responses to Question(s) Posed in This Session

<table>
<thead>
<tr>
<th>Number of Respondents</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Disagree nor Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>Not Provided</th>
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<td>0</td>
<td>1</td>
<td>12</td>
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<td>3</td>
</tr>
</tbody>
</table>
Figure 60: Participant Ratings: Overall Quality of the Presentations and Discussions

![Bar chart](chart.png)

Figure 61: Participant Feedback: Improved knowledge and Understanding of the Challenges and Issues Surrounding the Recognition and Integration of Internationally Educated Health Professionals

![Pie chart](chart2.png)

Additional Comments

Positive Comments

- Great presentation and discussion around a very important and difficult topic.
- Good questions from Steve Slade and from the floor and the panel was very informed.
- The US presentation was particularly helpful with very pragmatic information.
- Pleased that they discussed more professions than just physicians.

Constructive Criticism

- Felt this session only touched the surface of the issues.
- Would have been great to have more discussion on ethical issues and the problems of decision making between federal & provincial/state or state/private.
- The chair's pre-prepared questions squashed audience participation until late in its session. The audience is more than able to be involved and provide questions for discussion.
PROCEEDINGS OF CONCURRENT SESSION #2:
Research in Action: Poster Presentation of Novel Work (Top Poster From Each Country)

Moderator:
Gail Tomblin Murphy, Director, WHO/PAHO Collaborating Centre on Health Workforce Planning and Research

Objectives

The purpose of this panel discussion is to present and discuss the top posters for each of the IHWC countries. Abstracts for all of the other posters presented at the IHWC are provided in Appendix D, E, F, & G. The following are abstracts and discussion points for each of the top posters that were presented at this concurrent session.

Top Poster For Australia
Workforce Dynamic Indicators

Presenter:
Ian Crettenden, Health Workforce Australia

POSTER ABSTRACT

Authors:
I. Crettenden, F. S. Szuster, B. Fenech,

Objectives

To establish a set of key indicators that can be used to highlight aspects of the current workforce that may be of concern in the future. These indicators represent the key dynamics of workforce recruitment, retention, return to practice and retirement.

Methods

Health Workforce Australia (HWA) has developed a set of Workforce Dynamics Indicators (WDIs). These have been based on Health Workforce New Zealand’s medical discipline vulnerability ranking method, where a traffic light approach is used to score workforces against the selected indicators. The first set of WDIs were developed with the indicators of average age of existing workforce, replacement rate (ratio of annual workforce entries to exits), dependence on international graduates (migrant inflows as a percentage of all inflows) and duration of training program (years). Five categories were selected for each indicator with the range boundaries set to be relatively equal, rather than being established using a statistical base. The five categories were green for minimal concern, yellow, orange, amber and red for significant concern. Subsequently, the set of WDIs were extended to include percent aged 55 years and older and changes in average hours worked for males and females.
Findings

The first set of WDIs was determined for medical specialties in HWA’s Health Workforce 2025 (HW 2025) – Volume 3. The WDIs were prepared for 2012 from the study baseline data and for 2025 from the comparison scenario workforce projections. For the WDIs the majority of medical specialties were determined to be of minimal concern (green) for the replacement rate while significant concern (red) was identified for the dependence on international graduates for General Practice, Psychiatry, Radiology and Other Surgery. The revised set of WDIs was prepared for the HW 2025 – Allied and Other Health Professions which is currently being drafted.

Conclusions

WDIs provide a visual summary of aspects of the current workforce. They provide an easily understood presentation of health workforce planning information for a broad audience. Further development is needed to determine whether the WDIs would benefit from additional indicators. In addition, the range boundaries of the five categories of the WDIs need to be refined on a statistical base

Questions and Answers:

Why not split by males or females?

This data is present however it does not present much of an impact in terms of differences between males or females.

Why wasn’t vacancy rate included?

Because most are self-employed and so vacancy rate was not included.

Why wasn’t population rates not included?

Because the practitioner to population ratio are such an invariant and maintaining a constant ratio does not really help.
Top Poster for Canada: 🇨🇦
Influences on Career Choice: What Factors Influence the Career Choice of Medical Students

Presenter:
Stephen Rimac, Canadian Resident Matching Service

POSTER ABSTRACT
Authors:
S. Rimac

Objectives and Purpose of Study
Over the past decade, the top career choice of Canadian medical graduates (CMG) has been in family medicine, surgery, and internal medicine. The purpose of this study is to uncover what factors influenced graduate’s career choice in family medicine, surgery, and internal medicine.

Data Sources & Study Design
The Canadian Resident Matching Service (CaRMS), is a not-for-profit organization that works in close cooperation with the medical community to provide an electronic application and computer match for entry into postgraduate medical training throughout Canada.

This longitudinal study uses data from CaRMS’ Post-Match Survey of Canadian Medical Graduates. The goal of the survey is to address issues concerning medical graduates. The survey focuses on the following issues: post-graduate training and career plans, factors that influence their decision to train and practice in a particular discipline and location, and socio-demographic characteristics. This study looks at factors that influence career plans.

Emerging Findings
Differences in interest and career choice have been found between family medicine, surgery, and internal medicine. From 2003 – 2012, interest in family medicine increased (8.9% increase) while interest in surgery decreased (3.9% decrease), and little change was found in interest for internal medicine (0.2% decrease). Differences in factors that influence career decisions have also been found between specialties. In choosing their career, teaching opportunities were important for CMGs interested in internal medicine (81% of CMGs interested in internal medicine considered teaching opportunities important), compared to CMGs interested in surgery (74%) or family medicine (59%). On the other hand, work-life balance was an important consideration in choosing a career for CMGs going into family medicine (72%) compared to internal medicine (57%) and surgery (47%).
Conclusion

The goal of this study is to look at differences in how medical graduates make their career choices. Graduate discipline choice is an important determinant of the distribution of specialties and associated training locations across the country. Understanding the characteristics associated with career choice can assist residency institutions in determining the characteristics, motivations, and needs of residency applicants.

Poster Presentation Notes

- 60% of medical graduates in CARMS are female (steady for a number of years)
  - Lack of interest in males for family medicine in the early years.
- Reasons for significant decline in family medicine
  - Rigid training system.
  - Accessibility to medical education.
  - View of family medicine as low prestige.
- Initiatives to promote family medicine
  - Mentorship from existing family doctors.
  - Scholarships supporting family medicine.
  - Better negotiated salaries.
  - Incorporation of family medicine in medical curriculum.

Questions and Answers

What is link of training time from family medicine to internal medicine to surgical medicine?

- Internal medicine minimum is minimum four years.
- Average training time is minimum five years.
- Surgical medicine is much longer; close to seven years.

Were there any regional differences?

Yes. Regional and cultural differences were found between campuses.
Top Poster for the United States

Innovative, Interprofessional Model of Specialty Care Delivery and Education in the Department of Veterans Affairs (VA)

Presenter:
Dr. Barbara Chan, Office of Academic Affiliations

POSTER ABSTRACT

Authors:
B. K. Chang1, J. Brannen2, C. Howard2, D. Latini3,

Objective

The overarching goal is to foster transformation of clinical education by preparing health professions trainees to work in and lead patient-centered, interprofessional teams providing coordinated longitudinal specialty care.

Methods

Setting: The largest health professions education program in the U.S., with 127 clinical teaching facilities, and over 10,000 funded positions, through which 37,809 physician residents rotate annually. Moreover, in FY2012, VA trained 20,218 medical students and 59,473 other health professions trainees.

The Patient-centered Specialty Care Centers of Excellence (COE) initiative was designed to: a. Develop exportable models of education integrated with healthcare delivery featuring Interprofessional and interdisciplinary collaboration, coordinated longitudinal care of patients requiring specialty care, and specialty care in the context of primary care in order to meet not only the needs of patients, but also of the primary care practitioners; b. Select VA COE sites competitively based upon strength of the proposed educational and clinical models, availability of local interprofessional leadership, evaluation plans, and expressed support of local VA and academic affiliate leadership; and c. provide evaluation support to determine what features of the COEs work best. Three sites were selected in August 2011 with funds released in January 2012 ($500,000 per site per year for 3 years). In year one, the program foundation was developed (including hiring of faculty and staff). Project management consisted of frequent contact and monthly calls between sites and the coordinating center along with ongoing oversight of budget and use of funds Evaluation across sites, in addition to site-specific assessment, consists of the Learners’ Perceptions Survey-“SC” (specialty care), Team Development Measure (TDM), Annual COE site report template, annual site visits with semi-structured interviews, plus use of VA’s corporate data warehouse to assess outcomes focusing on access, utilization, and clinical outcomes.
**Results**

Three very different COE sites have been funded (since January 2012), established, and began engaging trainees. These are Atlanta, GA [Women's Health Clinic in an underserved area, access to specialty and primary care, including mental health]; Cleveland, OH [Interprofessional Cancer Clinic, including telehealth]; and Salt Lake City, UT [Musculoskeletal Disease Center – interprofessional specialty team in which patients are seen alongside primary practitioner]. 63 interprofessional and interdisciplinary trainees were exposed to COE training in FY2012. Centralized monitoring, oversight, and support of the COEs, including substantial guidance with respect to evaluation metrics, are essential in undertaking this type of initiative. Online tracking systems assist in collaboration across sites. Space/hiring issues (1 site) can inhibit progress. Funding of administrative and evaluation staff, as well as protected time for faculty, are essential.

**Conclusion**

Considerable flexibility and support is required to allow COE sites, each of which is unique, to innovate around the core ideas of interprofessional, patient-centered care. Interprofessional models of care require attention to communication, team-building, and schedule coordination, especially for trainees.

**Poster Presentation Notes**

- 30% of total medical school grads train in veterans affairs annually.
- Only 9% of US positions are funded by veterans affairs.
- Challenges/Lessons.
  - Vigilance – have to keep going after the practitioners to encourage them to get them done.
  - Needs to be collaborative on some level to get this to work.
Top Poster for the United Kingdom

General Medical Council (GMC) National Training Survey

Presenter:
Andy Knapton, General Medical Council

POSTER ABSTRACT

Author:
A. Knapton,

Objective

The GMC registers doctors to practice medicine in the UK. Their purpose is to protect, promote and maintain the health and safety of the public by ensuring proper standards in the practice of medicine. As a part of ensuring standards, for the past six years the GMC have surveyed doctors in postgraduate training across the UK to find out what they think about the quality of their training. The survey gives a snapshot of the quality of medical education and training at a national level. The survey also generates a unique dataset of the training pathway and progression of UK trainees.

Method

The survey is undertaken as a web based survey using in-house GMC systems, which allows survey responses to be automatically stored against the doctors’ records held by the GMC. The 2012 survey involved the following key stages: Ensuring that all training locations were correctly recorded by both GMC and Postgraduate deaneries. Matching of all trainees to a training location as of the 30th April. The trainees undertaking the survey, including confirming their training information, during a seven week period starting 30th April. Data cleansing of the survey results. Publication of survey results using an in house developed reporting tool. The survey collects metrics on training by the seven different indicators. The survey also enables trainees to raise any concerns they have about their training and if their day-to-day activities were limited because of health problems.

Findings

In 2012, 51,316 doctors in training completed the survey, giving a response rate of 95.0%. The doctors in training surveyed were: trainees in the first (F1) and second (F2) year of the Foundation Programme, core trainees, higher specialty trainees, including Specialist Registrar (SpR) and General Practitioner (GP) trainees, fixed term specialty training appointment (FTSTA) trainees.

The poster will present some of the results of the survey which will include: The geographic distribution of trainees across the UK. The variation of training levels, as a measure of progression, across the UK. The variation of reporting of concerns by training level.
Conclusion

The 2012 in-house survey had one of the highest survey response rates of all GMC trainee surveys and was able to publish results only one month after the survey closed. The survey identified variation for example in the overall satisfaction of training, with General Practice having the highest average score of 87.8%, and Surgery with a score of 76.2% the lowest. The 2013 survey will build on the 2012 survey (which is open from 26th March) and will include improvements to the results presentation and tracking of trainees both in the geographic and level of training.

Additional Poster Presentation Notes

- Survey response rates \(\rightarrow\) deeper into training less likely to complete the survey.
- Those just out of medical school are highly likely to report patient safety issues.
  - Not prepared by med schools for reality of hospital setting, or they're flagging every single problem that arises.
Conference Evaluation of Concurrent Session #2

The following is an evaluation of concurrent session 2 which summarizes data and feedback from participants who have attended the session and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 62.** Participant Ratings: Quality of Poster Presentations

![Bar chart showing participant ratings for the quality of poster presentations.]

**Figure 63.** Participant Feedback: Research Topics Presented Were Relevant to the Health Policy and/or Planning Contexts

![Bar chart showing participant feedback on the relevance of research topics.]

**Figure 64.** Participant Feedback: Concluding Discussion Adequately Summarized the Responses to Questions Posed in This Session

![Bar chart showing participant feedback on the adequacy of the concluding discussion.]

**Figure 65.** Participant Ratings: Overall Quality of the Poster Presentations and Discussion

![Bar Chart](chart.png)

**Figure 66.** Participant Feedback: Research Presented at This Session has a Significant Degree of Applicability in Health Policy and/or Planning Contexts

![Pie Chart](chart.png)

**Additional Comments**

**Positive Comments**

- Excellent session!
- All strong presentations.

**Constructive Criticisms**

- Felt that there wasn’t any time left at end of the session for general discussion and that the quality of presentations was uneven but it was a good idea to give posters some profile.
- The posters were illegible.
- The session could have been more strongly linked to policy and policy implications.
- Presentations were quite variable and I felt that further screening was needed to ensure a degree of consistency in presentations.
PROCEEDINGS OF PLENARY #5: Key Take-Aways

Moderator
Marie-Dominique Beaulieu, President, College of Family Physicians of Canada

Objectives

The objective of this plenary is to share understanding between different IHWC countries about the lessons learned from participation in various sessions to date in order to help optimize individual and delegation experience.

Canadian Take-Aways

Presenter:
Morris Barer, University of British Columbia

Personal Reflection

Dr. Barer’s personal reflections of the IHWC, given his involvement with the committee since its establishment and his attendance to most of the 14 conferences, has been very positive in the sense that he feels that these conferences are very relevant and one of the best in terms or providing a range of different approaches organizationally and embracing a broader perspective beyond the medical workforce. He feels that one of the biggest strengths of the conference is the inclusion of participants from a wide range of backgrounds and full participation as it offers the opportunity for everyone to participate and to hear a variety of different perspectives.

Canadian Context

From a Canadian perspective, the conference provides the opportunity to learn about the advancements and progression being made in different countries with regards to health workforce planning and modeling and leaves us a little jealous with regards to the work that should and could be done here in Canada; particularly on the observatory front, as we presently lack the national infrastructure needed to move forward. When it comes to health workforce planning, Canada has one of the longest continuing soap operas in which many academics appear to be recycling ideas from previous years and conversations continue to be dominated by physician preoccupations or are profession “silo” centric and there is much to be learned from such countries as the Netherlands in terms of what should and could be done.

Moving Forward

In terms of moving forward, we need to be able to commit to specific outputs and follow ups and to also assess the impact of what comes out of these conferences to get a better understanding of its value and. We should also ensure that the agenda resonates internationally with PAHO, OECD and other international organizations and to consider potential missed opportunities in terms of learning from other countries outside of the
typical four. We should also be cognizant of our communication efforts in terms of using country specific terminology and acronyms so as to be more sensitive to new participants who may not familiar with these terms and acronyms. It is also important to hold dedicated sessions for poster presentations moving forward as it provides an opportunity to showcase and learn about additional work and innovations taking place within these countries.

Another suggestion for consideration is to have continued professional development credits associated with these conferences as a way of providing recognition towards the knowledge and partnerships acquired at these conferences.
United States Take-Aways

Presenter:
Erin Fraher, Centre for Health Services Research

Provision of Clarity and Overview of Health Systems

First, Dr. Fraher touched upon a few issues with regards to providing more clarity with regards to the country specific terminology (e.g. what is meant by social care in the United Kingdom), as was mentioned earlier by Dr. Barer but also to provide and to have available a brief overview of each of the health systems for each of the countries as this would be helpful to everyone, especially new participants.

Personal Reflection

Based upon her personal reflection, it appears that these different health care systems are undergoing similar transformations and that the context is changing and shifting and it is good to capture and learn about the various transformations and to see how they are progressing within each of the countries. Although key drivers of change are not always clear, each country tends to have some idea of what these are and she feels it would be good to learn from other countries what these key drivers are and to discuss differences and similarities among the different countries. She also feels that there have been transformations of the IHWC meetings and conferences in the sense that participants have become more highly committed and that the mix of new and old collaborators attending the IHWC conferences provides added value in terms generating new ideas and perspectives.

United States Context

From a United States perspective, the conference provides a sense of relief in terms of learning that health workforce planning is just as chaotic in other countries. It also provides value in terms of providing an opportunity to discuss innovations and to share challenges, different system dynamics, facilitators and drivers in the context of other countries. To this end, Dr. Fraher felt that there is a need for more champions of innovations and a need for more qualitative information to help inform some of the work that is being done by the individuals attending the IHWC conference.

Moving Forward

Indeed, each of the countries benefit from learning about the views of other countries however, Dr. Fraher felt that it is equally important to look at where things are headed and to determine how this can be measured moving forward. She also felt that the conference would benefit from addressing a few key topics that she felt were missing from the conference including such topics as population health prevention, tying interprofessional teams into modeling and planning and empowering patients and to determine what this means in terms of workforce.
Australia Take-Aways

Presenter: 
Ian Wronski, James Cook University

Personal Reflection

Although the topics and the nature of the conference facilitate discussion, Mr. Wronski’s personal reflection is that there could have been more opportunities for discussion outside of the program. He was also pleased that there were a lot of discussion around health workforce modeling, projections and innovations given their importance to health workforce planning and he felt that these discussions should be taken forward in terms of how these tools can be aligned with health needs, health outcomes and disease management/rates and to discuss how to make them more relevant to the political process. He also felt it was important to address the issue of evaluation and to really think about what is actually being measured.

Provision of Clarity and Definitions

In terms of clarity, Mr. Wronski felt there is a need to discuss what is meant by workforce for health and what is meant by generalism in relation to the health workforce within the context of each of the countries. Similarly, he felt there is a need to discuss definitional issues with regards to the terms vertical and horizontal specialization and to further discuss the role that they play in each of the health care systems, particularly in rural and remote areas of the country.

Moving Forward

In terms of moving forward, Mr. Wronski felt it would be helpful to all countries to hold discussions around rural generalism in terms of how it can be applied to and/or across other areas or professions of the workforce such as midwifery.

Mr. Wronski also noted that although each of the countries has different ways of doing policy there appeared to be similarities in terms of the political limitations and that although research does not influence policy change in some respects, he felt that in terms of moving forward, it would be good to discuss how to best translate research knowledge to help inform policy making and address political limitations of health workforce planning. He also noted that most countries are undergoing university evaluation exercises and that this would provide an excellent opportunity to discuss how each of the countries are moving forward with the recommendations generated from these evaluations.

Finally, Mr. Wronski suggested that discussions should expand to other professions in a real way including involvement of various health professions and incorporating consumer perspective.
**United Kingdom Take-Aways**

**Presenter:**
*Graham Willis, Centre for Workforce Intelligence*

Dr. Willis emphasized that many of the points presented from the previous countries touched upon similar ideas discussed within the United Kingdom caucus in terms of moving forward and he proceeded to present a few additional points that were not captured by the other countries that he felt were important.

Dr. Willis felt that it was important to highlight those ideas and topics that have the most impact and chance of success, and those that are also able to promote action. He also felt that it was important to move projects and ideas forward and to maintain collaborations outside the conference.

**United Kingdom Perspective**

From a United Kingdom perspective, the topic of uncertainty is of particular interest and they would like to explore this in more detail, especially from the perspectives of other countries. Furthermore, they feel that it is important to discuss the issue of uncertainty with key stakeholders and to help them deal with these uncertainties through modeling.

**Moving Forward**

A few additional pieces that to consider in terms of moving forward include:

- Getting more data and hard evidence for follow up with regards to the debate between generalism and specialism. Especially given that it is a common theme across countries.
- Developing a better understanding of the career intentions and desired occupations for the upcoming generation of health professionals in order to be able to help improve health workforce projections.
- Discussion around patients in terms of how to shape health care services around their needs.
- Sharing success stories but also to learn more from failures as there is a lot of valuable insight that can be learned from the failures and how one progresses through struggles.
- In terms of knowledge translation, having publications and social media including twitter and blogs on the work, ideas and discussions generated at the IHWC conferences would be excellent in terms of generating knowledge.
Conference Evaluation of Plenary #5

The following is an evaluation of plenary 5 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 67.** Participant Ratings: Quality of the Lessons Learned Presented By the Delegates at This Plenary

![Bar Chart](image)

**Figure 68.** Participant Feedback: Session Adequately Addresses the Purpose of This Plenary Session Which is to Help Optimize Individual and Delegation Experiences

![Bar Chart](image)

**Figure 69.** Participant Feedback: Discussion Generated in This Session Were Amenable to Next Steps

![Bar Chart](image)
Figure 70. Participant Ratings: Overall Quality of This Session

Figure 71. Participant Feedback: Improved Knowledge and Understanding of the Individual and Delegation Experiences Between the Different IHWC Countries
Thursday May 8th 2013

PROCEEDINGS OF PLENARY #6:
From Learning to Application: Ideas and Challenges From Decision-Makers

Lead:
Graham Willis, Head of Research and Development, Centre for Workforce Intelligence
Meena Mahil, Head of Horizon Scanning and Care Pathways, Centre for Workforce Intelligence

Introduction

Dr. Willis began the plenary by presenting a brief overview of the activities and objectives for the plenary as described in Appendix H, and also provided the following definitions to help guide discussions.

Key Definitions

Driving Forces: Factors that are relevant to the area under investigation and cannot be controlled such as the state of the economy, students applying to university, medical tourism and migration. Some driving forces will be relatively certain and others very uncertain.

Pre-Determined Factors: Other factors that cannot be controlled and are in the pipeline like birth, death and taxes.

Trends: Increasing population, more elderly people, rising cost of energy, growth in global migration.

Preparing for Changes Resulting From Innovative Workforce Practices and Technology

Canadian Decision-Maker:
Terry Goertzen, Manitoba Health

N.B. Focus on transforming health professions education.

Factors of High Impact and High Uncertainty

- Changing scopes of practice among physicians and other health care providers.
- Impacts of different types of medical cultures and their interaction with each other as part of interprofessional collaboration.
- How to incorporate training into health workforce planning.

Area for Joint Action

- Six collaborators will work together as a mini network to scope this issue in terms of how best to approach the topic in preparation for discussions at the next IHWC conference.
Achieving the Right Balance of Generalists and Specialists

Australia Knowledge User:
Etienne Scheepers, Health Workforce Australia

Factors of High Impact and High Uncertainty

- Uncertainty around need, how does need match to what we have in the present workforce and population health needs.
- Issues around status compensation and cultural prospect. Should be seen within a profession and specialty.
- Need for competency-based training approach with respect to the definition of generalism.

Area for Joint Action

Identify volunteers to further work on:
- Developing a definition of generalism across professions and across borders.
  - Defining scopes of practice across borders. Learning across the countries.

Preparing for Globalization

United States Decision-Maker:
Clese Erikson, Association of American Medical Colleges

Factors of High Impact and High Uncertainty

- Lack of linkage between immigration and credentialing and how to best articulate.
- Regulation of international medicine in terms of determining who should be accountable and how to regulate this.
- Sale of medical education and what it is doing to workforce planning in terms of the increasing levels of debt for graduates.

Area for Joint Action

Group of individuals interested in doing work that:
- Focuses on scoping the issue and identifying how this is impacting each of the countries including their students for achieving our goals.
- Obtaining contact information to get access to relevant data.

How Do We Deliver Service Given Fiscal Restraints

United Kingdom Knowledge User:
Meena Mahil, Centre for Workforce Intelligence

Factors of High Impact and High Uncertainty

- Determining how quality is measured and whether the right indicators are in place.
- Determining the quality of services provided by different groups of health care professionals.
- Ensuring transparency, and meeting public expectations.
Areas for Joint Action

Identify Volunteers to Investigate:
- Strategies for developing incentives towards better quality, while ensuring transparency, and providing a better understanding about the costs and values of different services.
- Roles and ways of working which include working out barriers and determining what factors are involved in retention. Not just applicable to hospital it is also applicable to community care.
- How we measure quality and effectiveness.

The CfWI will be publishing the progress of these challenges in more detail on an idea bank, which is a mechanism for supporting ongoing communication between the various groups as they continue to work on these challenges.
Conference Evaluation of Plenary #6

The following is an evaluation of plenary 6 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 72.** Participant Ratings: Quality of the Discussions Around the Four Challenges Provided for This Plenary

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>0</td>
</tr>
<tr>
<td>Fair</td>
<td>3</td>
</tr>
<tr>
<td>Good</td>
<td>13</td>
</tr>
<tr>
<td>Excellent</td>
<td>14</td>
</tr>
<tr>
<td>Not Provided</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 73.** Number of Participants by Challenge Group who Completed Evaluation Forms

<table>
<thead>
<tr>
<th>Challenge Group</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation and Workforce Technology</td>
<td>5</td>
</tr>
<tr>
<td>Quality and Fiscal Restraint</td>
<td>6</td>
</tr>
<tr>
<td>Globalization</td>
<td>6</td>
</tr>
<tr>
<td>Generalist vs Specialist</td>
<td>4</td>
</tr>
<tr>
<td>Not Provided</td>
<td>9</td>
</tr>
</tbody>
</table>

**Figure 74.** Participant Feedback: Idea(s) Presented Were Relevant to the Challenge That was Presented to the Group

<table>
<thead>
<tr>
<th>Agreement Level</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td>1</td>
</tr>
<tr>
<td>Neither Disagree nor Agree</td>
<td>0</td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>20</td>
</tr>
<tr>
<td>Not Provided</td>
<td>1</td>
</tr>
</tbody>
</table>
**Figure 75.** Participant Feedback: Idea(s) Presented by the Other Groups Were Relevant to the Challenge They Were Asked to Address for This Plenary Session

<table>
<thead>
<tr>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
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<tr>
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<tr>
<td>10</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

- **Strongly Disagree**: 0
- **Somewhat Disagree**: 0
- **Neither Disagree nor Agree**: 3
- **Somewhat Agree**: 6
- **Strongly Agree**: 21
- **Not Provided**: 1

**Figure 76.** Participant Ratings: Overall Quality of the Ideas and Discussions for Joint Action and Follow-Up

<table>
<thead>
<tr>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
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<tr>
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<tr>
<td>6</td>
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<tr>
<td>4</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

- **Poor**: 2
- **Fair**: 3
- **Good**: 13
- **Excellent**: 12
- **Not Provided**: 1

**Figure 77.** Participant Feedback: Improved Knowledge and Understanding of the Four Challenges Presented by the Knowledge Users in This Plenary Session

- **Yes**: 84%
- **No**: 13%
- **Not Provided**: 3%
Additional Comments:

**Positive Comments**

- This was of the best interactive session of the entire conference.
- This was an excellent exercise!
- This was the best wrap up of any IHWC conference to date. It encouraged commitment and collaboration in a positive way.

**Constructive Criticisms**

- Would have been great to be made aware of the topics in advance.
- While this session’s approach has merit, more rigor is required to get the most out of it. For example, providing a better introduction and explanation of the topics.
- Should include more specialty inputs.
- This session would have benefitted from more structure such as providing more handouts of the 'exercise’ to facilitate discussion. The process of rating seemed to be different at the start and end so, this might affect the 'outcome’.
- Insufficient time for our group to address action items and discussion.
- The session lacked real focus and the challenges that were presented to us were a little vague.

**Suggestions**

- Have responses typed on the screen so that we are able to read the responses provided by other groups.
PROCEEDINGS OF PLENARY #7:
Overview of Current Health Workforce Priorities in OECD Countries, and Policies to Improve the Geographic Distribution of Doctors

Speaker:
Gaétan Lafontaine, Senior Economist, OECD

Objectives

The objective of this plenary is to learn about innovative work done outside the collaborative (IHWC), and to stimulate afternoon discussions about the future of the IHWC and potential collaborations.

Introduction

This presentation provided an overview of health workforce trends and policy priorities in OECD countries, following the 2008-09 economic crisis. It used data from OECD Health Statistics 2013 as well as results from the 2012 OECD Health System Characteristics Survey to describe these trends, the current policy priorities and some of the policy responses to address health workforce issues in different OECD countries. The last part of the presentation focused specifically on policies relating to the persisting issue of the geographic maldistribution of doctors and other health workers.

Trends in Number of Practicing Doctors per Capita Across OECD Countries

OECD collects annual data across the OECD countries with regards to the number of doctors per capita. Figure 77 shows the results from the 2013 data collection. The comparability of data across countries is somewhat limited by the fact that while most countries submit data on “practicing” doctors (doctors providing direct care to patients), some others (including Canada provide data which also include other doctors working in the health sector as managers, educators, researchers etc., and a couple of countries include all doctors licensed to practice (thereby also including many who may no longer be active).

As seen in Figure 77, there is a large variation in the number of doctors per capita across OECD countries, ranging from a low of between 1.5 to 2 doctors per 1000 population in middle-income countries such as Chile, Turkey and Korea, to more than 6 per 1000 population in Greece. The average number of doctors per capita across OECD countries at was 3.2 per 1000 population in 2011.

Among those countries represented at the IHWC conference, most fall below the OECD average with the exception of Australia which is slightly higher than the average.

Since 2000, the number of doctors per capita has increased in nearly all OECD countries, with the exception of Estonia and France where the number has remained stable and Israel where it decreased. The number of doctors and nurses has continued to grow in nearly all OECD countries even during the recession in 2008-09, albeit at a slower pace in some countries. In Greece, the number of doctors has increased strongly between 2000 and 2008, but has stabilized since then.
OECD Health Statistics also shows that there have been strong increases in the number of medical graduates over the past ten years in many OECD countries, including in Australia, Canada and the United Kingdom, contributing to a substantial increase in the number of doctors in absolute levels and on a per capita basis.

**Figure 77.** Practicing Doctors Per 1000 Population, OECD Countries, 2000 and 2011 (or Nearest Year)

1. Data include not only doctors providing direct care to patients, but also those working in the health sector as managers, educators, researchers, etc. (adding another 5-10% of doctors). 2. Data refer to all doctors licensed to practice (resulting in a large over-estimation of the number of practising doctors in Portugal).

**Source:** OECD Health Statistics 2013.
Health Workforce Priorities in OECD Countries

Prior to the economic crisis, there were widespread concerns in most OECD countries about general shortages of doctors and nurses – what was referred to as “the looming crisis in the health workforce” in a 2008 OECD publication. Following the economic crisis, the context for health policy making in general, and health workforce policy in particular, has evolved in many OECD countries, as shown in responses to the module on health workforce issues from the 2012 OECD Health System Characteristics Survey, which were provided by Ministries of Health in 31 out of the 34 OECD member countries. The health workforce module included four main questions regarding:

1) Issues related to physician supply;
2) Policies to address issues related to physician supply;
3) Limits to entry into medical and nursing education, and recent changes in student intake; and
4) Extension of role for non-physicians and skill mix.

Issues Related to Physician Supply

In response to the survey question regarding issues related to physician supply, only one country (i.e. the Netherlands) reported having no issues whereas most of the other OECD countries reported geographic maldistribution as their primary concern. Other concerns that were reported include: possible shortages in some specialties, maintaining the current share of general practitioners, and more general concerns about meeting increasing demand and maintaining current level of physician supply.

Policies to Address Issues Related to Physician Supply and Regulations of Practice

OECD countries are using a variety of policies to address issues related to physician supply. In the Health System Characteristics Survey, countries were invited to indicate whether they had policies in place in seven areas. Figure 78 summarizes the responses to this question. It shows that:

- Six countries reported they had policies that might help to prolong the working time of physicians, such as incentives for postponing retirement.
- Six countries have targeted immigration policies to attract foreign physicians generally or in specific underserved areas in the country.
- A greater number of countries (eleven) indicated they are providing some incentives (financial or non-financial) to foster the take-up of general practice.
- Eleven countries reported they are providing some incentives to foster the take-up of certain specialties that are deemed to be in shortages now or for which shortages are expected in the future.
- Eleven countries also indicated that they have introduced or expanded the roles of non-physician providers to relieve pressures on physicians.
- Sixteen countries have increased the overall intake into medical education and training.
- Eighteen countries indicated that they have put in place some financial incentives to correct a perceived geographic maldistribution of physicians.
**Figure 78:** Policies in Place to Address Identified Physician Supply Problems, OECD Countries, 2012

Source: OECD Health System Characteristics Survey 2012 (based on 31 country responses as of May 2013)

**Limits to Medical and Nursing Education in OECD Countries, and Recent Changes in Student Intake**

Nearly all OECD countries use some form of “numerus clausus” to limit the number of students entering in medical education (and in nursing education also), and in the case of doctors, also limit the number entering in further specialty training following their first medical degree. In the few countries which do not explicitly impose such “quotas” to medical education (Chile, Czech Republic and United States), budgetary constraints at the national or sub-national level or capacity constraints at the university level or in post-graduate training limit de facto the number of students.

There have been increases in the number of medical graduates over the past ten years in many OECD countries, including Australia, Canada, the Netherlands and the United Kingdom (Figure 79), reflect decisions to expand student intakes that were made several years prior to that.
Figure 79. Number of Medical Graduates in Selected OECD Countries (1990-2012)

Source: OECD Health Data 2013, Forthcoming

Extension of Roles for Non-Physicians and Skill Mix

To counter potential shortages in physician supply, about a third of OECD countries responded to the 2012 Health System Characteristics Survey that they had introduced or expanded the roles of non-physician providers over the past five years (Canada, Chile, Finland, Ireland, Netherlands, New Zealand, Slovenia, Spain, Sweden, Switzerland and the United States).

In the United States, the number of graduates from programmes training “mid-level” providers, such as Physician Assistants (PA) or Nurse Practitioners (NP), has been growing faster than that of medical graduates (MD) over the past decade. This indicates that the share and role of these mid-level providers (relative to medical doctors) can be expected to increase in the years ahead.

A 2010 OECD study focused on advanced roles for nurses, and nurse practitioners more specifically, gathering information from 12 OECD countries who chose to participate. Half of the participating countries (i.e. Australia, Canada, Finland, Ireland, United Kingdom and the United States) had a lot of experience to share in this regard, including potential barriers and facilitators associated with expanded roles, whereas the other six countries did not have as much experience but were very interested in learning from other countries in this regard.
The results from evaluations of advanced practice nursing in those OECD countries that have a relatively long experience indicates that nurse practitioners and other advanced practice nurses can improve access to services, help reduce wait times and provide the same quality of care as doctors for a range of services, including first contact for patients with minor illness, routine follow-up for those with chronic conditions and patient education/nursing). Furthermore, these evaluations suggest that patient satisfaction may actually be higher with the provision of care from advanced nurses due to quicker access and longer consultation.

The main barriers and facilitators to implementing advanced practice nursing include:

- Professional interest: overcoming opposition from the medical profession.
- Organization of care and funding barriers: e.g. solo practice, fee-for-services.
- Legislation and regulation on scope of practice.
- Education and training opportunities: organizing training opportunities to allow nurses to work to these new levels of practice.

**Geographical Distribution of Doctors**

The OECD has also looked at policies to promote a better geographical distribution of doctors and services within OECD countries. In most OECD countries, there continues to be significant disparities in physician density, and in many countries there tends to be a large concentration of doctors in the national capital region (Figure 80).

The issue regarding the maldistribution of doctors is most notably evident in rural versus urban areas, but the issue of maldistribution may also affect disadvantaged urban areas (e.g., in Paris, France, there are a lot of physicians on the west end or rich part of the city compared to the northeast end or poor part of the city).

---

Figure 80. Disparities in physician density within OECD countries, 2009
Areas of Action to Improve Geographic Distribution

Based on a review of policies in different countries, health policymakers may use three broad strategies to respond to imbalances in physician distribution:

1) Education policies.
2) Financial incentives or regulations (carrots or sticks).
3) Health service delivery innovations.

Education Policies:
Education policies may include two different types of policies:
- Policies aimed at student selection:
  - Attracting more students coming from rural and other underserved areas (e.g. through entry quota)
- Policies aimed at training institutions:
  - Decentralizing medical schools
  - Increasing training opportunities in rural/underserved areas

Financial Incentives or Regulations (Carrots or Sticks)
Here as well, two different types of policies may be used to promote better geographical distribution:
- Carrot Approach: approaches to entice physicians to work in underserved areas. These might include wage or fee bonus for services provided in underserved areas (e.g. US Medicare bonus) or fixed cost subsidies to support the establishment of practices in underserved areas (e.g. 60 000€ in Eastern German Länder).
- Stick approach: approaches that control or constrain the location of practice for physicians through the use of regulations. Very few OECD countries use this approach however. Germany and Austria provide examples of countries that use regulations as a strategy to control the possibility for newly-trained doctors to open practices in areas deemed to be in oversupply according to a set physician density threshold.

Health Service Delivery Innovations
Several health service delivery innovations may help to attract or keep doctors in underserved areas or improve access to health services for the population, including innovations that:
- Support the establishment of group practices and service co-location to reduce isolation and improve working conditions in rural areas (e.g. “Maison de la santé” in France)
- Introduce or extend new roles of certain providers in rural and remote areas
- Support further development and use of technology and tele-medicine
Evaluating the Impact and Cost of Interventions to Promote Better Geographical Distribution

Rather than aiming for one strategy that would “fix all” issues related to distribution of physicians, the reality for policymakers in most countries is that they will have to use several strategies, and review this mix over time. The best mix of such strategies will depend in part on the specific health needs of the population, the health system characteristics and the characteristics of the physician workforce, the budgetary situation, and the overall health reform context.

Different strategies are also likely to have a different time horizon. Investment into and changes of medical education will take considerable time to have an impact, because of the duration of training. In contrast, financial incentives and regulation of location choice may be introduced relatively more quickly, while service delivery reform may take more time to implement, depending on which policy is put forward.

Strategies also differ in their cost structure. There are currently insufficient evaluations to enable a detailed cost assessment, and some interventions are more easily costed than others. Nevertheless a basic overview of possible areas of policy action, likely impact and cost (upfront/recurring and fixed/variable) is provided below (Table 12).

Table 12: Overview of possible strategies to promote better geographical distribution of doctors: Areas of actions, impact lag and cost structure

<table>
<thead>
<tr>
<th>Area of action</th>
<th>Impact lag</th>
<th>Cost structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical education</td>
<td>Long-term</td>
<td>Moderate fixed upfront cost, moderate variable cost</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Short to medium term</td>
<td>Significant variable cost</td>
</tr>
<tr>
<td>Regulatory policies</td>
<td>Short term</td>
<td>Moderate variable (administrative) cost</td>
</tr>
<tr>
<td>Service delivery reform</td>
<td>Medium to long-term</td>
<td>Significant fixed (upfront) cost, moderate variable cost</td>
</tr>
</tbody>
</table>

OPEN DISCUSSION: Health Workforce Priorities in OECD Countries

Presenters:
Gaetan Lafortune, OECD

Questions and Answers

With regards to the number of physicians per population, has OECD broken this down by medical specialty?

It is difficult to disaggregate doctors by medical specialty because there is no international classification of medical specialties that would allow a consistent data collection across countries. That being said, the OECD does collect data for a certain number of categories of doctors: general practitioners, pediatricians, gynecologists and obstetricians, psychiatrists, a medical group of specialists and a surgical group. When we introduce a further breakdown of categories of doctors beyond generalists and specialists a few years ago, we got a few unexpected results. For example, some countries, such as the United States, started to report general internal medicine doctors in the “medical group of specialists”, rather than as “general practitioners, as they were doing before. Hence, a much lower share of “general practitioners” is now reported in these countries, although general internal medicine doctors may be doing a fairly similar job as family doctors. There doesn’t seem to be any easy solution to collect data for different categories (and subcategories) of doctors in a fully consistent way across countries.

First, a comment with regards to national and state level policy incentives to promote better geographical distribution. The Cochrane Collaborative has also conducted a review of efforts to address maldistribution issues and have noted one of the more promising incentives in terms of having a bigger impact is medical student loan repayment followed by scholarships. Second, has OECD considered linking the two themes: geographical distribution and specialty distribution to help address both issues in tandem?

With regards to the Cochrane review, not one of the studies met the Cochrane criteria. The student loan and scholarship incentive is not really a new intervention, and it must have some positive impact if it has been developed further in certain countries. At the same time, it would be useful to evaluate its impact and cost, compared with other possible interventions that are designed to achieve the same goal. France provides an example of a country where health workforce planning takes into account both the geographic distribution of doctors and the specialty composition as a starting point, and these distributions are taken into account in “numerus clausus” policies and in the number of internship places for medical students in different location and specialty, but there is a sense among many health policy analysts in France that the current policies may not be sufficiently coherent and strong to achieve their ultimate objective of promoting a more even geographic distribution.
With regards to innovations presented for the delivery care there was mention of telehealth approaches and this is actually something that the United States are increasingly using to facilitate specialty consultation in rural areas for such fields as mental health. It would be interesting to look at the extent of adoption of this particularly in terms of impact and cost effectiveness.

This is something that will be further investigated. For example, Finland and Sweden are also using telehealth approaches to link health centres in remote areas with bigger locations.

How is mal-distribution defined by OECD? Is there a standard minimum number of doctors or health professionals threshold? Also, are there any discussions with regards to having a common definition across OECD countries?

No, the OECD hasn’t set any benchmark minimum number of doctors, nurses or other health professionals, at a national level or subnational level. This is up to each country to determine what number of different health professional categories is needed to respond to population health needs. That being said, some countries have decided to use either the OECD average in terms of doctor-to-population ratio, or the ratio in certain countries, as a benchmark or target to achieve, but that’s really up to each country to make these decisions.
Conference Evaluation of Plenary #7

The following is an evaluation of plenary 7 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

Figure 81. Participant Ratings: Quality of the Presentation

![Bar chart showing participant ratings for the quality of the presentation.]

Figure 82. Participant Feedback: Innovation Work Presented by OECD Opened Up Opportunities for Potential Future Collaborations With the IHWC

![Bar chart showing participant feedback on innovation work presented by OECD.]

Figure 83. Participant Feedback: Concluding Discussion Adequately Summarized the Responses Around the Future of the IHWC

![Bar chart showing participant feedback on the concluding discussion.]

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Royal College of Physicians and Surgeons of Canada

Health Canada

Canadian Health Human Resources Network
**Figure 84.** Participant Ratings: Overall Quality of the Presentation and Discussion

![Bar chart showing participant ratings](chart.png)

**Figure 85.** Participant Feedback: Improved Knowledge and Understanding of Some of the Interesting Work Taking Place Outside the IHWC

![Pie chart showing feedback](chart2.png)

**Additional Comments:**

**Positive Comments**
- The presentation was excellent, we need to have Gaetan return to future IHWC conferences!
- The evaluation and findings presented were valuable
- The overall data presented was excellent.
- This was an interesting session with a good speaker.

**Constructive Criticisms**
- Would have been nice to have examples of how OECD work can influence or has influenced policy, research, or practice.
- Again, it would have been helpful to review a (draft) paper of the presentation prior to the conference.
- There was a touch too many graphs and I would have appreciated more analytical conversation.

**Suggestions**
- More discussion of deeper innovations such as patient self-empowerment or patient centered care or community-based prevention would have been great.
PROCEEDINGS OF PLENARY #8:  
The Future of IHWC

Australasia Presentation

Presenter:
Mr. Mark Cormack, Health Workforce Australia

What Worked Well at the 2013 IHWC Conference:

- Program:
  - Program development and coordination was excellent.
- Networking:
  - Networking opportunities ensures that participants get good value for attendance.

Areas of Improvement for the 2013 IHWC Conference:

- Technical Skills Workshop:
  - Although the technical skills workshop went well, the program could have delved deeper into technicalities of HRH modeling.
  - More linkages established between the technical skill workshop and rest of the conference. Participants who did not attend the technical skills day felt left out in select discussions during the main conference.
- Debate:
  - Perhaps too respectful and polite.
  - A more provocative debate would enhance the quality of discussions.
- Q & A Panel Sessions:
  - Panel speakers need to be better prepared on the content areas that will be explored during the Q&A panel sessions.

Continuation of IHWC:

Although IHWC should continue, resource sustainability is a concern that needs to be addressed.

Changes That Might Make IHWC More Valuable if it is to be Sustained:

- Country Overview (i.e. Health System 101):
  - To provide orientation to participants would be helpful.
- Update on Country Collaborations
  - Important to keep track on the cross-country work that has been done.
- Specific Areas of Focus Moving Forward:
  - Mental health.
  - Population health.
  - Innovations.
- Balancing Size and Scale of Conference:
  - Although broad stakeholder engagement is great, dilution of conversations is a concern that needs to be balanced.
United States Presentation
Presenter:
Dr. Susan Skillman, University of Washington Center for Health Workforce Studies

What Worked Well at the 2013 IHWC Conference:

- Cross Country Interaction:
  - Small groups tend to foster cross-country interaction.

Areas of Improvement at the 2013 IHWC Conference:

- Technical Skills Workshop:
  - Should be more inclusive of other participants.
- World Café:
  - Format worked well however more time between discussions would be useful.

Changes That Might Make IHWC More Valuable if it is to be Sustained:

- Conference Principles and Objectives:
  - International committee should communicate objectives for the conference to participants in advance.
- Conference Materials:
  - Glossary of terms and basic descriptions of the participating countries’ health care systems.
  - Downloadable package on the website should be prepared.
  - Conference papers should be prepared in advance. Topics should drill down on select issues versus discussing a broad range of topics with less depth.
- Innovation:
  - Focus on Innovation rather than reiteration of problems that we are well aware of now.
  - Look at the positive deviance in things instead of more documentation of problems.
- Specific Areas of Focus:
  *While focus should remain on HRH, we risk limiting discussions that are more ‘silo like’ in nature.
  - Healthy populations should be overarching framework guiding conference program development.
  - Innovation.
  - Health outcomes.
  - Health infrastructure (telehealth).
  - Retooling the existing health workforce in effective ways.
  - Interprofessional education in practice.
United Kingdom Presentation

Presenter:
Graham Willis, Centre for Health Workforce Intelligence

What Worked Well at the 2013 IHWC Conference:

Felt the program was set up well. There is no need to stay fixated about the perfect format for this conference as there is no perfect format.

Areas of Improvement at the 2013 IHWC Conference:

- Program:
  - Program development needs to focus on balancing different contemporary HRH themes.

Changes That Might Make IHWC More Valuable if it is to be Sustained:

- Follow Up:
  - Follow up actions and collaboration between conferences is crucial.
- Themes:
  - Theme based days as done in the past should be considered.
- Specific Areas of Focus:
  - Innovation.
  - Intervention including unintended consequences of intervention.
  - Broadening to other related areas such as social care.
- Balance of Participants:
  - From researchers to policy-makers and educators is great.
  - We should build on this by including employers in the next meeting.
- Conference Materials:
  - Distribution of papers, briefing notes and other background materials prior to the conference.
Canada Presentation

Presenter:
Ivy Lynn Bourgeault, Canadian Health Human Resources Network

What Worked Well at the 2013 IHWC Conference:

International perspective beyond 4 countries worked well: Gaetan presentation for instance could have led the conference.

Changes That Might Make IHWC More Valuable if it is to be Sustained:

- **Specific Areas of Focus:**
  - Patient Engagement.
  - Countries’ Strengths and Weaknesses in Health Care System.
- **Pre-Conference Sessions:**
  - Organizing multiple pre-conference streams that allow participants delve into their specific areas of interest. These streams would then subsequently report back in the main plenary to inform discussions.
  - Each country should be assigned to develop a pre-conference brief that identifies HHR issues and advancements being made in the country.
- **Conference Materials:**
  - Balance of whether there should be background papers or not will continue to be a challenge moving forward. For this year’s conference, organizers faced various issues trying to recruit people to write papers and do panels. Such issues in participation will need to be attended to next time.
Conference Evaluation of Plenary #8:
The following is an evaluation of plenary 8 which summarizes data and feedback from participants who have attended the plenary and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 86. Participant Ratings: Quality of the Panel Presentations**

![Bar chart showing participant ratings](chart1.png)

**Figure 87. Participant Feedback: Idea(s) and Argument(s) Presented by the Panelists Pertaining to the Continuation of the IHWC Were Reasonable.**

![Bar chart showing participant feedback](chart2.png)

**Figure 88. Suggestion(s) Provided for Improving the IHWC in Terms of Value Were Feasible**

![Bar chart showing suggestion feedback](chart3.png)
**Figure 89.** Participant Ratings: Overall Discussion and Suggestions Related to the Future of IHWC

<table>
<thead>
<tr>
<th>Number of Respondents</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
<th>Not Provided</th>
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<tbody>
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<td>0</td>
<td>4</td>
<td></td>
<td>14</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 90.** Participant Feedback: Improved Knowledge and Understanding of the Value of the IHWC

- Yes: 92%
- No: 0%
- Not Provided: 8%

**Figure 91.** Participant Feedback: Should IHWC Continue?

- Yes: 96%
- No: 0%
- Not Provided: 4%
OVERALL CONFERENCE EVALUATION:

The following is an overall evaluation of the 14th annual IHWC conference which summarizes data and feedback from participants who have attended the conference and completed evaluation forms. The purpose of the evaluation was to provide valuable feedback to be used towards improvement towards future IHWC conferences.

**Figure 92.** Participant Feedback: Able to Access to Conference Information Through the IHWC Website Without Any Difficulty

![Bar chart showing feedback on accessing conference information.]

**Figure 93.** Participant Feedback: Materials Prepared for the Conference Were Helpful

![Bar chart showing feedback on materials prepared.]

**Figure 94.** Participant Feedback: Satisfied With the Conference Facilities at the Loews Hôtel Le Concorde, Québec City:

![Bar chart showing feedback on conference facilities.]

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ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA

Health Canada

Canadian Health Human Resources Network
Figure 95. Participant Feedback: Conference Program Was Relevant and Met Expectations

Figure 96. Participant Feedback: Conference Program Allowed for Sufficient Time to Network

Figure 97. Participant Feedback: Balance of Plenary Sessions, Panel Discussions, Breakout Sessions and Presentations, Were Appropriate
**Figure 98.** Participant Feedback: Information Learned at This Conference Was Applicable to Workplace

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Disagree nor Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>Not Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

**Figure 99.** Participant Feedback: Overall Level of Satisfaction With This Conference

<table>
<thead>
<tr>
<th>Very Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Neither Dissatisfied nor Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Very Satisfied</th>
<th>Not Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>23</td>
<td>2</td>
</tr>
</tbody>
</table>
What Participants Enjoyed Most About the Conference:

Candid/Open Discussions:

- Candid discussions about relevant and current workforce issues.
- Networking; hearing truth from other countries.
- Trust, candor, and conviviality. Topics and diversity of format. Seeing old friends from other countries and making new ones!

Networking:

- Networking opportunities and exchange.
- Highly relevant topics.
- Connections, new collaboration ideas
- Friendly atmosphere, great location and good chance to network and catch up with colleagues.

Conference Structure:

- The preconference session and innovations session ending at 3:00 PM is great as it allowed those who were jet-lagged to leave work and talk with colleagues more productively.
- The conference structure and how the breakfast got folk together and work productively.
- OECD quote was also valuable across the conference.
- Good balance of sessions and variation of formats for plenaries
- Great conference structure in terms of interactive, small-group discussions, debates and workshops
- Great timing, location, informality, congeniality.
- The commitment to collaborations as well as the country caucus and reflective time to shape the future of the conference

Conference Content:

- Great themes and good diversity in formats.
- The content was interesting and informative.
- Pre-conference workshop was focused and held the greatest relevance.
- The venue and connections were great and I am also leaving with a couple of ideas and contacts but was hoping for more applied research info.
- The range of information, opportunities for discussion in breakout groups and pre-conference workshop was great.
- Putting ideas into action was a great strategy for this conference.
What Participants Enjoyed the Least About the Conference:

**Positive Comments:**
- Going home.
- The entire conference was enjoyable.

**Conference Content:**
- Debate session was the least enjoyable session of the conference.
- Would have preferred more discussion, particularly within the alternative formats.
- Too academically focused.
- Lack of context for the specifics.
- The conference would have benefited from providing more background materials. Some sessions were rushed due to the time spent on explanation which could have been avoided by circulation of background material.
- Difficult to achieve a balance between in depth and width of issues.
- Not enough research evidence or academic input. The conference should cross academic, policy and service boundaries.
- There were not enough specialties, students or education represented at the conference.
- A better overview of country issues.
- Chairs should prepare fewer questions to allow the floor the opportunity to ask questions.

**Conference Structure:**
- The poster session was not well highlighted and as a result I feel there was a richness lost.
- Too many plenaries the first day which were not as interactive.
- Too many presentations.
- The posters were poorly displayed and were not announced prior to each poster session. The posters should be adjudicated and presented "live" in-person.
- The world café “speed dating” session was too short.
- There was not much progress on the second day.
- The conference facilities were great but the Wi-Fi connections were spotty. Although there was an appropriate balance, I would have liked more discussion and more in depth presentations.
- Although there was an appropriate balance, I would have liked more discussion and more in depth presentations.
FINAL THOUGHTS FOR GUIDING NEXT IHWC CONFERENCE

The CfWI will be hosting the next IHWC in the UK tentatively in 2014

Planning and Support

- Seek support from the UK Department of Health to assist with hosting.
- CfWI’s collaborations through EU joint action projects and OECD meetings will likely assist the stakeholders involved in planning the next conference.

Conference Materials

- Seriously consider the comments put forward by the other country reps on background materials to will enhance the program.
- Perhaps commission each country to write a paper on a certain theme (e.g., mental health, social determinants of health, technology, scaling up and transferring innovations etc.)

Invitations and Participants

- More strategic with invites including:
  - Funders: it is critical to hear from the decision makers on their HRH priorities.
  - New countries: invited incrementally, depending on the geographical location of conference. Given the UK’s proximity to a number of countries in Europe, this will be an important area of further discussion for the next conference.

Ideas, Direction and Suggestions for Future Conferences

Topics or Themes

Evidence-based planning

- A possible idea is to start with 3-4 contemporary policy/planning questions and then have presentations that demonstrate how evidence/planning techniques have/can address these policy questions.

Public/population health

- Measurement of public health workforce and population health workforce
- Drilling down on public/population health and discussions on best practices for patient/population health in the context of workforce planning
- Defining the public health workforce workers, family member caregivers and emerging professions like health care navigators and genetic counselors
- Public health workforce and productivity in public health
- Exploring the acquisition of health info by moving into the community to see what works and meet with the public to address the why’s and wherefore’s
- Integrated planning for health care/health/public health and integrated planning for mental health and substance abuse.
Key Take-Aways and Next Steps

- It was helpful to have a summary session and review some of the take away parts from the conference and to help plan for the future
- Include some discussion of the conference funds as well as lessons learned

Workforce Models

- Structured updates on workforce models and research so that every country gives information at a same level.
- Strategies designed to address these wicked problems in health workforce planning and how our workforce modeling initiatives support or inhibit our ability to address the complexity of the system
- More work that captures the effect of models of care on providers
- Link international work planning and implementation scientists.

Agency Updates

- More examples of how agencies are addressing the more common workforce problems in diverse/different ways and why and how/whether they are working
- Follow up with the presenters of the workforce innovations to see their progress and if they have met their targets.
- Continue to hold country caucus.

Presenting Innovations

- Addressing innovation of health professions education related to the transformations under way (eg Quebec Family Care)
- Include an innovative format like the world café or speed dating in future events to encourage interaction.
- More discussion of innovation in workforce deployment
- More on innovation, interprofessional models both in terms of failures and success and the use of technology such as telehealth
APPENDIX A: IHWC 14th Annual Conference Program

PROGRAM
2013 IHWC, May 6-9, 2013
Loews Hôtel Le Concorde, Québec City, Canada

2013 IHWC Conference High Level Goals:
- Explore HRH related issues germane to IHWC countries from a broader health system perspective, explored through a public policy, regulatory and/or research lens.
- Enable participants to identify key learnings that can be translated into their own spheres of professional activity, or joint projects within their own country or internationally.

<table>
<thead>
<tr>
<th>Monday May 6</th>
<th>08:00 REGISTRATION - Foyer (3rd Floor)</th>
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<tbody>
<tr>
<td></td>
<td>08:00 BREAKFAST - Leduc Lisper (3rd Floor)</td>
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08:45 TECHNICAL SKILLS WORKSHOP: HEALTH WORKFORCE PLANNING TECHNIQUES AND THE POLICY CONTEXT – Suzor Coté (3rd Floor)

Facilitator: Mr. Ian Crettenden, Health Workforce Australia

This pre-conference one-day workshop to the 2013 IHWC meeting will focus on planning techniques, especially modeling, and the policy and political context. It will look at planning tools and how they fit into health workforce policy- and decision-making activities. The workshop will share the developments of the OECD and provide an opportunity for member countries to share interesting pieces of innovative work.

Full details on the workshop program available at:

17:00 ADJOURNMENT

18:30 WELCOME RECEPTION - Galerie sur le Parc
Loews Hôtel Le Concorde
1225 cours du Général-De Montcalm
Québec City
PROGRAM
2013 IHWC, May 6-9, 2013
Loews Hôtel Le Concorde, Québec City, Canada

Tuesday
May 7

07:30 REGISTRATION - Foyer (3rd Floor)

08:00 WORKING BREAKFAST (60 minutes) - Borduas (3rd Floor)
COUNTRY CAUCUS #1
Objectives:
- Opportunity for members of individual country delegations to meet each other.
- Initial discussion/exploration of key issues associated with 2013 IHWC, with special focus on day 1 program material.
- Discuss possibility to split participation in different concurrent sessions to better ensure coverage of all conference themes, for later exchange.
Format:
- Informal, round table discussions, facilitated by country lead (or delegate).

09:00 OPENING (20 minutes) - Suzor Coté (3rd Floor)
Keynote Speaker:
Mr. André Picard, Public Health Reporter, The Globe and Mail

09:20 PLENARY 1 (75 minutes) *NO PAPER
UPDATE ON HEALTH WORKFORCE AGENCIES - Suzor Coté (3rd Floor)
Lead: Dr. Erin Fraher, Director, Program on Health Workforce Research & Policy, Cecil G. Sheps Center for Health Services Research
Objectives:
- Discuss progress since 2011 IHWC and identify potential issues that can inform/impact 2013 IHWC discussions.
- Explore opportunities for collaboration, further research, etc.
Format:
- Panel style with moderator (Erin Fraher) and 1 presenter from each country:
  - CA: Dr. Ivy Bourgault, co-Director, Pan-Canadian Health Human Resources Network and Mr. Terry Goertzen, Assistant Deputy Minister, Public Health and Primary Health Care Division, Manitoba Health
  - US: Mr. Edward Salsberg, Director, National Center for Health Workforce Analysis, United States
  - NZ: Dr. Andrew Wong, Foundation Member, HWNZ Board
  - AU: Mr. Mark Cormack, Chief Executive Officer, Health Workforce Australia
  - UK: Ms. Meena Mahil, Head of Horizon Scanning & Care Pathways, Centre for Workforce Intelligence
- 09:20-10:00: 8-10 minute presentations from IHWC countries.
- 10:00-10:35: Question and answer period.

10:35 POSTER VIEWING / HEALTH BREAK (25 minutes) - Krieghoff (3rd Floor)
**PROGRAM**  
2013 IHWC, May 6-9, 2013  
Loews Hôtel Le Concorde, Québec City, Canada

<table>
<thead>
<tr>
<th>Tuesday May 7</th>
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**11:00 PLENARY 2 (90 minutes) - Suzor Coté (3rd Floor) *NO PAPER**

**DEBATE**

**PROVIDER AUTONOMY AND PUBLIC POLICY IMPERATIVES: WHICH SHOULD PREVAIL?**

**Moderator: Mr. André Picard, Public Health Reporter, The Globe and Mail**

**Debators:**

- **Pro Profession View:**
  - **CA:** Dr. Anna Reid, President, CMA  
  - **UK:** Professor Peter Kopelman, Principal, St George’s, University of London

- **Pro State View:**
  - **US:** Dr. Daniel Derksen, Professor & Chair, Public Health Policy and Management Section, Mel and Enid Zuckerman College of Public Health  
  - **AU:** Professor Sabina Knight, Director, Mt Isa Centre for Rural and Remote Health, Australia

**Objectives:**
- Learn about differing perspectives about professional autonomy, including pros and cons for quality of health care and public/planners.
- Discuss these perspectives and areas of consensus and disagreement.

**Format:**
- 11:00-11:40 – 2 opposing views presentations (20 mins each max).
- 11:40-12:15 – discussion between debaters and participants.
- 12:15-12:30 – I-Clicker vote by participants on “winner” of debate and wrap up.

| 12:30 NETWORKING LUNCH (60 minutes) - Borduas (3rd Floor) |

| 13:30 PLENARY 3 (90 minutes) - Suzor Coté (3rd Floor) *PAPER**

**ASSURING ADEQUATE SPECIALISTS, GENERALISTS AND A HEALTH WORKFORCE WHERE IT’S NEEDED: HOW DO WE BALANCE DEMANDS TO IMPROVE QUALITY, EXPAND ACCESS AND CONTAIN HEALTH CARE COSTS?**

**Moderator: Mr. Edward Salsberg, Director, National Center for Health Workforce Analysis, Health Resources and Services**

**Pannelists:**

- **CA:** Dr. Paul Dagg, Clinical Professor, University of British Columbia and Medical Director, Tertiary Mental Health, Interior Health Authority  
- **US:** Dr. Lois Nora, President and CEO of the American Board of Medical Specialties  
- **AU:** Mr. Mark Cormack, Chief Executive Officer, Health Workforce Australia  
- **UK:** Professor Peter Kopelman, Principal, St George’s, University of London
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>13:30</td>
<td>PLENARY 3 – continued - Suzor Coté (3rd Floor)</td>
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<tr>
<td>15:00</td>
<td>ADJOURNMENT</td>
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<tr>
<td>07:30</td>
<td>REGISTRATION - Foyer (3rd Floor)</td>
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<tr>
<td>08:00</td>
<td>NETWORKING BREAKFAST (45 minutes) - Borduas (3rd Floor)</td>
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<td>08:45</td>
<td>PLENARY 4 (1.75 hrs.) - Suzor Coté (3rd Floor) - PAPER</td>
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<td></td>
<td>Lead: Mr. Etienne Schepers, Executive Director, Workforce Innovation and Reform, Health Workforce Australia</td>
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<tr>
<td></td>
<td>This session explores the policy, practice, implementation and research factors needed to successfully drive health workforce innovation on a large scale.</td>
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<tr>
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<td>Presenters:</td>
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<tr>
<td></td>
<td>CA: Dr. Antoine Groulx, Director, Organization of Front-Line Integrated Services, Ministry of Health and Social Services</td>
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<td></td>
<td>US: Dr. Elizabeth Mertz, Assistant Professor, Preventive and Restorative Dental Sciences, University of California</td>
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<td></td>
<td>AU: Mr. Nick Lord, Project Manager, Health Workforce Australia</td>
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<tr>
<td></td>
<td>UK: Ms. Meena Mahil, Head of Horizon Scanning &amp; Care Pathways, Centre for Workforce Intelligence</td>
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<tr>
<td>Time</td>
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<tr>
<td>10:30</td>
<td>POSTER VIEWING / HEALTH BREAK (30 minutes) – Kriehoff (3rd Floor)</td>
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<tr>
<td>11:00</td>
<td>CONCURRENT SESSIONS (90 minutes) *NO PAPER</td>
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<td><strong>SESSION 1: Suzor Coté (3rd Floor)</strong> RECOGNITION AND INTEGRATION OF INTERNATIONALLY EDUCATED HEALTH PROFESSIONALS <strong>Moderator: Mr. Steve Slade, Director of CAPER and VP Research &amp; Analysis CAPER-ORIS</strong></td>
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<td>Pannelists: CA: Dr. Ivy Bourgeois, co-Director, Pan-Canadian Health Human Resources Network US: Dr. Polly Pitman, Associate Professor, Department of Health Policy, School of Public Health and Health Services, George Washington University AU: Mr. Peter Allen, Chair, Agency Management Committee, Australian Health Practitioner Regulation Agency UK: Professor Peter Kopelman, Principal, St George’s, University of London</td>
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<td>- What are the reforms/developments in each IHWC country policy that have helped meet health needs and/or promote skills development?</td>
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<td>- Are there any critical success factors, levers, such as bilateral agreements, immigration policies that have enabled recognition?</td>
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<td>- Do States Integrate FQR within broader HRH planning and if so, how?</td>
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<td><strong>SESSION 2: Kriehoff (3rd Floor)</strong> RESEARCH IN ACTION: POSTER PRESENTATION OF NOVEL WORK (TOP POSTER FROM EACH COUNTRY) <strong>Moderator: Professor Gail Tamblyn Murphy, School of Nursing, Faculty of Health Professions and Director WHO/PAHO Collaborating Centre on Health Workforce Planning &amp; Research</strong></td>
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<tr>
<td>12:30</td>
<td>NETWORKING LUNCH (60 minutes) – Borduas (3rd Floor)</td>
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<tr>
<td>12:30</td>
<td>CLOSED SESSION – OPEN TO PLANNING COMMITTEE MEMBERS ONLY PUBLICATIONS (60 minutes) – Suite 410 (4th Floor)</td>
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<td>- Small group discussion around publications.</td>
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</table>
**PROGRAM**

2013 IHWC, May 6-9, 2013  
Loews Hôtel Le Concorde, Québec City, Canada

<table>
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<tr>
<th>Wednesday May 8</th>
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</table>
| **13:30 COUNTRY CAUCUS #2 (45 minutes)**  
Canada – *Kriehoff (3rd Floor)*  
Australasia – *Suite 410 (4th Floor)*  
United Kingdom – *Suite 414 (4th Floor)*  
United States – *Suite 415 (4th Floor)*  
  • Discuss issues and key learnings to date for country report at 14:15  
  • Plenary 5 session.  
  • Discuss topics to prepare for next day. |

| **14:15 PLENARY 5 (45 minutes) – Suzor Coté (3rd Floor) *NO PAPER**  
KEY TAKE AWAYS  
Facilitator: Dr. Marie-Dominique Beaulieu, President, College of Family Physicians of Canada |

Objective:  
  o To share understanding between different IHWC countries about lessons learned from participation in various sessions to date in order to help optimize individual and delegation experience.  

Format:  
  o Country leads or their delegates summarize key take aways:  
    • **CA:** Mr. Morris Barer, Director, Faculty, UBC Centre for Health Services and Policy Research  
    • **US:** Dr. Erin Fraher, Director, Program on Health Workforce Research & Policy, Cecil G. Sheps Center for Health Services Research and Dr. Elizabeth Mertz, Assistant Professor, Preventive and Restorative Dental Sciences, University of California  
    • **AU:** Professor Ian Wronski, Pro Vice Chancellor, Faculty of Medicine, Health and Molecular Sciences, James Cook University  
    • **UK:** Dr. Graham Willis, Head of Research and Development, Centre for Workforce Intelligence |

| **15:00 ADJOURNMENT** |

| **17:30 SHUTTLE TO CONFERENCE DINNER** |

| **18:00 CONFERENCE DINNER**  
Les Ancêtres Auberge et Restaurant  
391 Chemin Royal, Saint-Pierre  
Ile d’Orléans, Québec |
# PROGRAM
2013 IHWC, May 6-9, 2013
Loews Hôtel Le Concorde, Québec City, Canada

<table>
<thead>
<tr>
<th>Thursday May 9</th>
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<tbody>
<tr>
<td><strong>FOCUS OF DAY:</strong> to identify key learnings that can be translated into individual spheres of professional activity (knowledge translation/transfer), or joint projects within their own country or internationally.</td>
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<tr>
<td><strong>09:00</strong> NETWORKING BREAKFAST (45 minutes) - <strong>Borduas (3rd Floor)</strong></td>
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<tr>
<td><strong>09:45</strong> PLENARY 6 (75 minutes) - <strong>Suzor Coté (3rd Floor)</strong> <em>NO PAPER FROM LEARNING TO APPLICATION: IDEAS AND CHALLENGES FROM DECISION-MAKERS</em>* Lead: Dr. Graham Willis, Head of Research and Development, Centre for Workforce Intelligence and Ms. Meena Mahil, Head of Horizon Scanning &amp; Care Pathways, Centre for Workforce Intelligence</td>
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<td>Objectives:</td>
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<tr>
<td>o Share ideas and opinions with experts and colleagues on the key challenges.</td>
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<td>o Identify the key drivers and prioritise the drivers by highest impact and highest uncertainty.</td>
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<td>o Identify priority areas for joint action or collaboration.</td>
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<td>o Follow up with a view to taking things forward.</td>
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<td>Format:</td>
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<tr>
<td>o Panel of knowledge users (one from each country) to facilitate:</td>
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<tr>
<td>▪ <strong>CA:</strong> Mr. Terry Gortzen, Assistant Deputy Minister, Public Health and Primary Health Care Division, Manitoba Health</td>
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<td>▪ <strong>US:</strong> Ms. Clese Erikson, Director of the Center for Workforce Studies</td>
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<tr>
<td>▪ <strong>AU:</strong> Mr. Etienne Scheepers, Executive Director, Workforce Innovation and Reform, Health Workforce Australia</td>
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<tr>
<td>▪ <strong>UK:</strong> Ms. Meena Mahil, Head of Horizon Scanning &amp; Care Pathways and Dr. Graham Willis, Head of Research and Development, Centre for Workforce Intelligence</td>
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<tr>
<td>o 09:45 – Introduction and overview of the four challenges.</td>
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<tr>
<td>o 09:55 – Exercise; each table takes one challenge, one facilitator per table.</td>
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<tr>
<td>o 10:20 – Each table facilitator reports back.</td>
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<tr>
<td>o 10:45 – Vote on each area for joint action.</td>
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<tr>
<td>o 10:50 – Feedback; reflect back on what was achieved and discuss areas for joint action.</td>
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<tr>
<td><strong>11:00</strong> HEALTH BREAK (15 minutes) - <strong>Foyer (3rd Floor)</strong></td>
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<tr>
<td><strong>11:15</strong> PLENARY 7 (60 minutes) - <strong>Suzor Coté (3rd Floor)</strong> <em>NO PAPER OVERVIEW OF CURRENT HEALTH WORKFORCE PRIORITIES IN OECD COUNTRIES, AND POLICIES TO IMPROVE THE GEOGRAPHIC DISTRIBUTION OF DOCTORS.</em>* Speaker: Mr. Gaétan Lafortune, Senior Economist, OECD</td>
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<tr>
<td>Will serve as opportunity to learn of innovative work done outside the collaborative (IHWC), and to stimulate afternoon discussions about future of the IHWC and potential collaborations.</td>
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### Thursday May 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>12:15</td>
<td>NETWORKING LUNCH (60 minutes) - Borduas (3rd Floor)</td>
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</tbody>
</table>

**13:15 COUNTRY CAUCUS #3 (45 minutes)**
- **Canada** - Kriehoff (3rd Floor)
- **Australasia** - Suite 410 (4th Floor)
- **United Kingdom** - Suite 414 (4th Floor)
- **United States** - Suite 415 (4th Floor)

Objectives:
- Discuss issues and key learnings to date, including how to translate learnings into action.
- Possibly develop joint projects.
- Evaluate 2013 IHWC overall and provide feedback on structure of program (feedback will be given to next IHWC host country).
- Based on evaluation and key take-aways, discuss if IHWC should continue?
- If feel should continue, recommend issues/topics for next IHWC.

**14:00 PLENARY 8 (45 minutes) - Suzor Coté (3rd Floor)  *NO PAPER FUTURE OF IHWC***

Objective:
- Discuss what worked well and less at 2013 IHWC conference.
- Discuss if IHWC should continue?
- Discuss any changes that might make IHWC more valuable if it is to be sustained.

Format:
- Panel style with 1 presenter from each country:
  - **CA**: Dr. Ivy Bourgeault, co-Director, Pan-Canadian Health Human Resources Network
  - **US**: Ms. Susan Skillman, MS, Deputy Director, Center for Health Workforce Studies, Rural Health Research Center, and Associate Director, WWAMI AHEC
  - **AU**: Mr. Mark Cormack, Chief Executive Officer, Health Workforce Australia
  - **UK**: Dr. Graham Willis, Head of Research and Development, Centre for Workforce Intelligence

**14:45 INTRODUCTION OF NEXT HOST IF PLENARY SUPPORTS ANOTHER IHWC AND ADJOURNMENT OF CONFERENCE (15 minutes) - Suzor Coté (3rd Floor)**

Following adjournment:
- Global Planning Committee debrief
APPENDIX B: IHWC Technical Skills Workshop Program

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>8:45 — 9:00</td>
<td>Welcome and introduction of participants</td>
<td></td>
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<tr>
<td>9:00 — 9:20</td>
<td>Overview of the workshop Questions and issues to be addressed and discussed</td>
<td>Ian Crettenden</td>
</tr>
<tr>
<td>9:20 — 10:50</td>
<td>International and European experiences</td>
<td>Dr Charles Godue</td>
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<tr>
<td></td>
<td>OECD</td>
<td>Dr Gaetan Lafortune</td>
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<tr>
<td></td>
<td>United Kingdom</td>
<td>Dr Graham Willis</td>
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<tr>
<td></td>
<td>Netherlands</td>
<td>Victor Slenter</td>
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<tr>
<td>Break</td>
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<tr>
<td>11:20 — 12:30</td>
<td>International and European experiences</td>
<td>Dr Erin Fraher</td>
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<td></td>
<td>Discussant</td>
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<td></td>
<td>Open participant discussion</td>
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<tr>
<td>Lunch</td>
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<td>Experiences in North America and Australia</td>
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<td>Break</td>
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<td>3:30 — 4:40</td>
<td>Experiences in North America and Australia</td>
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<td>Summary of day and steps forward for collaboration across countries</td>
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* The discussions would include the identification of data sources, requirements, specifications and assumptions under-pinning the methods in use and those that are emerging across the countries.
APPENDIX C: Papers for Plenary #3

Canadian Paper

Assuring Adequate Specialists, Generalists and a Health Workforce Where it’s Needed: How do we Balance Demands to Improve Quality, Expand Access and Contain Health Care Costs

Author: Dr. Paul Dagg, Interior Health Authority in British Columbia and University of British Columbia

How can generalism and practice flexibility be supported and encouraged?

For many years discussion about access to health care in Canada has focused on the belief that increasing the number of generalist physicians will improve access. While it is clear that the shortage of family physicians is a significant issue (in 2004, more than 4 million Canadians did not have a family doctor) which has an impact on wait times for medical care and satisfaction with the health care system, a broader discussion of the challenges in this area is hampered by the lack of consensus of what in fact is meant by generalism in medicine. This in turn hinders human resource planning, and leaves medical education systems and teachers free to define and teach generalism as they see fit. Not every family doctor is a generalist, nor is every specialist lacking in generalism. In psychiatry, the term general psychiatry is used for everything that is not a recognized subspecialty, and yet many general psychiatrists have very narrow practice profiles and expertise.

In 2012 the Canadian Institute of Health Research funded a project to develop a consensus on the nature and role of generalism in medicine and report on the implications. The report is in preparation for publication at this time but the task force recommended that generalism be defined as “a philosophy of care that is distinguished by a commitment to the breadth of practice within each discipline and collaboration with the larger health care team in order to respond to patient and community needs...generalists are a specific set of physicians and surgeons with core abilities characterized by a broad-based practice. Generalists diagnose and manage clinical problems that are diverse, undifferentiated, and often complex. Generalists also have an essential role in coordinating patient care and advocating for patients.” This then has implications in residency training where the need to teach and model the values of generalism are important for all physicians and surgeons, while planning for the correct mix of generalists and specialists involves not only planning but ensuring access within medical education to generalist role models and training settings that are consistent with generalist care. Using the example again of psychiatry, the “general psychiatry” experience needs then to occur in a setting that best reflects generalist psychiatry practice, not necessarily a general psychiatry unit in a tertiary academic hospital.
In Canada, from 1992 to 2003 there was a significant decline in medical students choosing family medicine as their first choice of specialty for residency – declining from a high of 44% in 1992 to a low of 25% in 2003. As a result medical schools and governments, aided by work by the Canadian College of Family Physicians embarked on a variety of strategies to enhance recruitment and interest in family medicine, looking at factors including exposure to family physicians in medical school, educating medical students about family medicine, and improving the profile of family medicine in public and in academic medicine, financial incentives for practice, and expanding the proportion of residencies in family medicine. In 2012, the percentage of medical students selecting family medicine as first choice had risen to 35%. At the same time the percentage of residency positions filled in the national match in family medicine rose from 37% in 2007 to 43% in 2012, with unfilled positions in family medicine dropping from 11.4% of positions in 2007 to less than 3% in 2012. At the same time within family medicine training programs there has been a long standing focus on the philosophy of generalism and comprehensive care within family medicine.

Specialty medicine in Canada has also struggled with finding the right mix and attracting people to generalist specialties. Within Internal Medicine there is a widely reported shortage of General Internists, but here too planning has been a challenge as it is difficult to know who truly is practicing GIM – most of the stats have traditionally looked at who doesn’t have another subspecialty and assumed those are the ones practicing GIM. Using these planning assumptions, flawed as they may be, there has been a definite decline in number of General Internists versus “other” subspecialties in IM up to at least 2005. In 2005 when Canadian Society of Internal Medicine reported this decline and noted that the number of General Internists over 55 was 43.3 %. In 2010 however, after years of work and debate, the Royal College recognized General Internal Medicine as a subspecialty of medicine, which has resulted in renewed interest in the field some programs now unable to take in the number of residents that desired to do General Internal medicine for the upcoming (2014) year. Of interest given the discussion of what is generalism, the Objectives of Training in GIM for the Royal College note that “GIM is a subspecialty of Internal Medicine which embraces the values of generalism, is aligned with population needs, and promote’s the practitioner’s ability to adapt their practice profile when population needs change...General Internists provide comprehensive care of the adult patient in an integrated fashion as opposed to an organ-centred or disease-centred approach.” One wonders how much this greater clarity in defining the role of the generalist has helped raise the profile of this field.

In Pediatrics, issues of definition also plague planning, as the amount of general pediatrics practiced by subspecialists in pediatrics is not clear. Experts in the field note though that there is a trend away from pediatricians providing general office pediatrics as a part of their practice in general, raising concern about the increased demand on family physicians to provide primary pediatric care. A recent survey of residents who completed their core pediatric training in Canada between 2004-2010 showed that 37% were working as general pediatricians, of whom about 2/3 were community based. The Chairs of Pediatrics in Canada have recently circulated to residents the results of a survey on vacancies in
academic pediatric positions and compared that to residents in training to identify mismatches between need and current training.

In the surgical specialties, there has been an expanding trend for residents to seek out fellowships after their residency, with about 85% of general surgical residents doing additional training after residency in Ontario in recent years. This is driven by many issues including a desire to further develop skills that may not be fully developed in residency, but also is being driven by the current job market for surgeons where competition for jobs has become a significant issue, requiring more and more things on the resume to be attractive to potential hospital employers, which often translates into more specialized skills, rather than the generalist competencies that may be needed.

What patterns, policies, and initiatives are being experienced by each country to promote higher quality and specialized care while balancing the need to meet the range of services required by their populations when and where they need them?

Initiatives in Canada to promote higher quality care and to meet the need for the population can be divided into 4 areas: (1) expansion of the physician supply, (2) expansion of the number of family physicians relative to specialists, (3) addressing issues related to physician distribution, and (4) clarifying the need for specialization when it has an impact on outcome.

In the mid 1990’s Canada followed a policy of shrinking medical school sizes and restricting entry of internationally trained physicians with a view towards controlling health care costs. The result of this was that the physician work force aged and shortages became more obvious. Since 2000, Canada has increased the undergraduate class size of medical schools in Canada by 60% and added a new school. With this expansion though there has also been attention to issues related to the distribution of physicians in Canada, which has traditionally experienced significant shortages in rural, small urban and northern parts of the country, and the mix of specialists and family physicians that are produced by Canadian medical schools. Thus the new school is the Northern Ontario School of Medicine, based in several communities in northern Ontario with a clear mission and curriculum supporting northern and rural medicine. In addition, 11 new regional campuses have been developed, with 4 of those serving northern underserved areas. Students graduating from these programs so far preferentially select family medicine training programs over specialty programs, often in regional or rural programs. As noted above, other policies to attract students into family medicine have recently seen an expanded interest in this field.

Along with the expansion of medical school size there has been the development of programs in many provinces to facilitate entry into postgraduate training for graduates of non-Canadian schools, with programs to support transition, assess training and facilitate entry into appropriate levels of training.

The general expansion of physicians in training has had variable impact on regions of short supply. Physicians who depend on expensive hospital facilities to work, such as surgeons
and other procedural disciplines, anesthesiologists, and radiologists, have found an increasingly competitive job environment, and so regions that have had trouble recruiting in these areas, find it easier. Other specialties that do not require the same level of hospital based services have been less affected. Psychiatry has traditionally struggled with distribution issues, based on the ability with a one party government funded system to work very independently of hospitals or health organizations. A recent study in the health authority where I work found that over the last 20 years, less than 3% of the graduates of the provincial university's psychiatry program came to the Interior Health Authority to work, even though we have 17% of the provincial population and very desirable communities. It is clear that addressing distribution is specialty dependent with some requiring not only expansion of training, but careful review of where and how that training is provided.

Canada's geography means that the population outside of the large urban centres is quite distributed with smaller urban areas often quite a distance from large urban tertiary care centres. The balance between generalist skills for specialists and sub-specialization thus requires careful review to determine when the balance between the benefits of providing care as close to the patient as possible are outweighed by the benefits from high volume sub-specialized providers. Thus the degree to which a hub and spoke model of care vs. a distributed model if care is under examination in different specialties and will have an impact on training.

Why and where is greater specialization of the health workforce needed? What factors impede needed specialization?

This is alluded to above and the answer is not clear at this time. The Royal College has been careful about pressures to expand the number of sub-specialties in Canada out of concern for the impact on fragmentation of the workforce. Recently it has developed a program that recognizes areas of special competence where there may be a need to acknowledge unique skills but where the need for full sub-specialty status is not established. In any review of new sub-specialties or these new areas of special competence, the process involves a stakeholder review including medical schools, specialty associations, government, and medical licensing bodies.

The Royal College has recently recognized sub-specialties in psychiatry in the area of Child and Adolescent Psychiatry, Geriatric Psychiatry, and Forensic Psychiatry where previously specialization was determined by use of qualifications from other countries, or Academies of the national specialty association that set standards through membership. This is in response to a clear recognition of need in these areas for specialized skills. In the surgical specialties concern has been raised about ever-lengthening training and whether sub-specialty training should start sooner, cutting out on generalist specialty skills, but that raises concerns about early career choice for students and a loss of generalist skills that may be necessary in smaller centres.
A barrier at this time to further expansion of sub-specialty training is funding for residency positions which is generally capped at the university level, so any expansion of training length that arises as a result of specialization can result in a loss of positions as previously informally funded fellowships must now be provided through residency which requires the block funding provided by government. At this point we are predicting a serious contraction in training in geriatric psychiatry and child and adolescent psychiatry in Canada as a result of the shift in funding mechanisms and loss of training positions.

Canada has benefitted for years from a highly regulated system of graduate medical education that ensures a consistency of standard across the country, but at the same time relies on full time, entry training (residency or fellowship) for sub-specialization and development of added competencies. Other fields have recognized that skill development can be required across the life span of a person, and thus distance based, part time education for further professional development is the norm in many fields. In medicine though, outside of medical education, we have not developed a part time, distance based approach to developing sub-specialized or advance skills, restricting the ability of the physician work force, especially outside of academic centres, to respond to new population needs or skills development.

**What are the incentives to produce health care providers that deliver a wide range of services and/or provide services across multiple settings?**

The centralized, university based system of graduate medical education in Canada allows for planning with government to respond to health care needs, and has enabled some of the changes discussed above. The Association of Faculties of Medicine of Canada has recently produced a report “The Future of Medical Education in Canada” that identifies several key themes that the medical schools in Canada will be addressing in the next decade. These include a desire to ensure the right mix, distribution, and number of physicians, and cultivate social accountability through experience in diverse learning and work environments. The Royal College in turn is about to publish a series of white papers on the topics in this report that will add further recommendations.

The challenge that persists is to ensure that physicians who begin practice with such accountabilities continue to be able to provide a wide range of services within their scope of practice which also requires attention to payment systems. While the predominant funding system for physicians in Canada is a fee for service system that funds unique acts by physicians, alternate payment plans and systems are being developed to better pay for the care of people with chronic illness and complex conditions.
APPENDIX C: Papers for Plenary #3

United States Paper

Assuring Adequate Specialists, Generalists and a Health Workforce Where it's Needed: How do we Balance Demands to Improve Quality, Expand Access and Contain Health Care Costs

Author: Dr. Lois Nora, American Board of Medical Specialties

Introduction
The US National Health Quality Strategy has three goals: better care, healthy people/healthy communities, and affordable care. To achieve these goals, it is important that the appropriate balance and distribution of the healthcare workforce - specialists and generalists across the healthcare professions - be in place. Further, these individuals must be operating at the appropriate level of their practice activities and working effectively in teams.

This brief document is prepared to stimulate discussion about these topics at the 2013 International Health Workforce Collaborative Conference. We present contextual elements that affect the development of US health workforce policy. We also present a sampling of activities in education, policy and regulation to expand the generalist workforce, address career flexibility, and deliver the appropriate balance and range of services across multiple settings to address patient needs. We focus on the Affordable Care Act (ACA), the most transformative US healthcare legislation since the passage of Medicare in 1965, while including references to other initiatives.

US Workforce Policy in Context
US federal policy on workforce reflects a traditional conflict over whether “planning” or “market” approaches should be used to achieve national policy goals. In many areas, American policy-making has historically favored pluralism, choice, decentralization, and market-based solutions, and this bias may be especially keen in regard to workforce issues. It may perhaps be a measure of political antipathy to planning that a Workforce Commission authorized by the Affordable Care Act (ACA) has been named and initiated but never convened because the Congress has yet to appropriate any funds for it.

Even in the face of public calls for more planning and forecasting, some of our best known forecasters doubt its utility because forecast models relating workforce to health needs have not proven to be very accurate. Forecasts have to model complex tradeoffs between health care and non-healthcare inputs, different kinds of clinical services, as well as tradeoffs within clinical settings of different kinds of health care providers. Trends that appear strong today may be trumped by unforeseen market forces tomorrow. For example, scholars at the beginning of the nineties predicted a surplus of physician specialists based on HMO staffing patterns in the eighties as managed care appeared to define the future of health care, yet many now believe that we are facing severe shortages, especially in the face of changes in demand following the implementation of health reform.
The implementation of national policy goals is complicated in the US by the many organizations with responsibility for producing the physician workforce. Standards for undergraduate medical education (UME) are made by the Liaison Committee for Medical Education (LCME) for MD granting programs and by the American Osteopathic Association’s Commission on Osteopathic College Accreditation for DO granting programs. Standard-setting for the majority of graduate medical education (GME) programs has been done by the Accreditation Council for Graduate Medical Education (ACGME). The system for matching undergraduates to graduate residency programs is the National Residency Matching Program (NRMP). These organizations have focused on the quality and effectiveness of training. Decisions about the size and distribution of programs have tended to be made locally according to local and regional more than national workforce concerns.

**Federal and State Policy Initiatives**

There is general agreement that primary care, whether delivered exclusively by physicians or with other health care professionals, is good for health systems and improves health outcomes, and some have called for an increase in the proportion of physicians in primary care in the US from today’s one-third to over 40 percent. With respect to specialty mix and distribution, we have seen a number of policy initiatives in recent years to stimulate expansion of primary care. At the federal level, the ACA legislation incorporated a variety of provisions that address health work force directly and indirectly. For example, the ACA contains provisions that provide increased reimbursement to primary care providers as a way to help make the choice of primary care more attractive. There are also provisions for scholarships, loan repayment, and training demonstration programs to invest in primary care physicians, midlevel providers, and community-based providers. A number of policies are dedicated to increasing the attractiveness of primary care practice in rural or underserved areas. These include increasing access to primary care and community-based settings in training, increasing the number of training spots for primary care physicians, rewarding programs for producing more physicians choosing primary care careers, and locating training opportunities in underserved areas. The ACA also included a new Primary Care Extension Program to provide technical assistance to primary care providers, who tend to be in small practices without much infrastructure support.

At the state level, there is also interest in policies that address specific state healthcare needs, including the attraction and retention of primary care physicians to underserved areas as well as the availability of certain specialists, especially surgeons and psychiatrists, in rural and frontier areas. States have considered a variety of mechanisms to attract physicians, including loan repayment, Visa waivers for foreign medical graduates, and flexible work options. Because primary care physicians often work in small practices, technical assistance and administrative support are also being considered. Given evidence that individuals from rural or frontier areas are more likely to locate their practices in these areas, state legislatures have linked discussions of funding support to state-located medical schools with retention of graduates in those states and with the practice types and locations within the state. These discussions of state needs often extend beyond the discussion of primary care needs, with additional focus on the scarcity of surgeons, psychiatrists, and other specialists and the negative impact that these gaps have on health access.
Scope of practice expansions for nursing, pharmacy, and other health professionals have often been justified on the grounds that services must be made available for otherwise underserved citizens. The Federation of State Medical Boards (FSMB) and individual state medical boards are focusing attention on physician re-entry in order to facilitate the expansion of physician services. There are state and federal proposals to remove regulatory barriers to the use of tele-technology to increase access to specialty care in underserved areas (email, telemedicine). The Federation of State Medical Boards has proposed compacts among the states to allow physicians to register to provide tele-medical services while still ensuring quality protection to patients.

Health System Reform
Some of the most important, and potentially transformative, policy efforts will influence healthcare workforce indirectly. Delivery reform in the ACA reframes the debate over generalists and specialists by focusing on the creation of systems of care that would be responsible for managing the health of populations and for making available a suitable mix of services, physicians and other health professionals, as necessary to meet the population’s health needs rather than on workforce solutions per se.

These efforts are directed to experiments in delivery re-engineering that can create better systems of care offering more integrated experience of care for the patient through cross-disciplinary teams, care coordination, and prudent use of specialty care.

These reforms take several different forms but all would be intended to create more systematic care around patient needs to encourage efficient production on the one hand and better coordinated care on the other. These involve one of three strategic approaches, all promoted through various provisions of the ACA.

- **Bundled payment for episodes of care** - Changes in reimbursement to drive quality improvement, integration of care, with accountability for population health and efficient delivery
- **Integrated delivery systems** - Demonstrations of new models of delivery are being encouraged at two levels through many provisions of the ACA. At the primary care level, the Patient-Centered Medical Home is being developed as the entry point for patients. While dominated by primary care with a view to managing patients through the continuum, there is equal recognition of the need to assure a well-coordinated “medical neighborhood” of specialty care for referral. Accountable Care Organizations, which would be responsible for all care to a population, including primary, acute, and chronic care are being developed under a Medicare Shared Savings Program.
- **Community-based care coordination** – Demonstration programs through community health teams, i.e., extra-medical delivery support systems that collaborate to integrate, coordinate, and tailor care to patient needs for low-income

Achieving Workforce Goals through Medical Education
A variety of formal and informal activities are occurring within medical education and health professions education that will influence the make-up of the healthcare workforce and, as importantly, the ways in which healthcare professionals work together to deliver both primary and specialized care. At the undergraduate medical education (medical school) level, medical
schools have adopted student-centered curricular models that allow accelerated entry into primary care disciplines. At its February 2013 meeting, the LCME (the accrediting body for allopathic medical education programs) approved a new standard (ED 19-A) focused on training medical students to function collaboratively on inter-professional healthcare teams. The Accreditation Council for Pharmacy Education has incorporated standards emphasizing inter-professional educational experiences for several years. A federally funded National Center for Interprofessional Practice and Education was recently inaugurated at the University of Minnesota.

At the graduate medical education level, movement toward integration of the Osteopathic and Allopathic GME Accreditation organizations could offer an opportunity for expansion of primary care residency sites to a larger community of graduating medical students as well as the opportunity for a single accreditation system to standardize curriculum and institutional systems for physicians-in-training.

It has also been suggested that federal funding for Graduate Medical Education (GME) should be used as leverage to achieve specific outcomes in training, including more emphasis on generalist skills and training in quality improvement, safety practices, and team-based care. The Medicare Payment Advisory Commission (MedPAC) proposed in 2010 that up to one-third of federal support for GME be withheld to hold programs accountable for specific training outcomes, related particularly to skills associated with patient transition management and care coordination and working in teams, in addition to building knowledge of safety and improvement science. Many viewed this proposal as superfluous because so many of the outcomes MedPAC sought were already in the process of being built into accreditation standards.

Congress never acted on this recommendation. In the meantime, the ACGME, in association with the medical specialty boards, has completed the first phase of the Milestones Project, which establishes outcome-oriented milestones for each of the six competencies, which include issues like teamwork, inter-professional communication, and system-based practice. These will help demonstrate whether the ACGME is producing graduates with the skills the public demands. In addition, as part of The New Accreditation System, a new system for evaluating the quality and safety of the clinical environments in which residents are trained is being implemented to make sure that training environments are modeling the practices that residents are expected to absorb.

The American Board of Medical Specialties is in the process of reconsidering its criteria for the approval of new specialties and subspecialties. Current discussion has suggested that the criteria may include:

- An area of clinical practice that is not routinely performed by physicians within the sponsoring specialty.
- A distinct and definable patient population that has a type of care need so unique that a “stand alone” body of medical knowledge and care principles have been developed solely to meet the needs of that patient population, requiring at least 12 months of training.
- Improved access and quality without negative impact on the cost of care.
Sufficient numbers of training programs and trainees to sustain the area of subs and to allow for a sustained critical mass of trainees necessary for trainee testing validity and training program accreditation.

**Conclusion**

The regulation of the physician training pipeline has focused on educational standards rather than workforce composition. Policies have been developed at the both the federal and state level to try to overcome the drive toward specialization, increase the number of physicians seeking training in primary care, and attracting physicians to practice in rural and underserved areas. More recently, these workforce questions of balance and distribution have been reframed as delivery system problems best resolved in health care organizations that will be held accountable for the care of populations. These delivery system solutions are likely to focus on the development of primary care teams, working across professional boundaries to allow all members of the team to work at their highest level of capability and training. Clearly, there is a movement toward solutions that are developed across sectors and organizations (federal government, state, systems), and models that will call for greater integration across the continuum of medical education and across the health professions.

**References:**

8. COGME Twentieth Report, op cit.
17 See http://www.ahceducation.umn.edu/nexus-ipe/
18 American Osteopathic Association and American Council on Graduate Medical Education. MDs and DOs move toward a single, unified accreditation system for graduate medical education. October 24, 2012.
19 Medicare Payment Assessment Commission Annual Report to Congress, 2010: Chapter 4
APPENDIX C: Papers for Plenary #3

Australian Paper

Assuring Adequate Specialists, Generalists and a Health Workforce Where it’s Needed: How do we Balance Demands to Improve Quality, Expand Access and Contain Health Care Costs
Author: Mr. Mark Cormack, Health Workforce Australia

How can generalism and practice flexibility be supported and encouraged through education, policy, regulation and compensation? Are there models in the different countries that could provide insights for the others?

Like many other countries, Australia has experienced a trend towards specialisation in the health workforce. This has been particularly evident within its medical workforce, but is also true of nursing and allied health. This trend has been driven by factors such as technological advancement in health requiring specialist knowledge and expertise in the workforce, community expectations of the health system, prolonged periods of undersupply that has inadvertently encouraged practitioners to specialise in areas of their own choice, and a lack of policy, planning and program co-ordination between the health and higher education systems.

Of the levers available to policy makers to support a generalist workforce, higher education, clinical training, workforce planning, compensation and regulation policy settings are particularly important. The higher education sector, at both professional entry and post graduate training levels, requires formal linkages with both the health care system and government. Linkages in the Australian system include

- emerging alignment of national workforce planning with training intakes;
- national registration and accreditation of health professionals and training;
- effective governance mechanisms for national, state and regional clinical training programs; and
- targeted program development to meet identified regional service requirements.

The needs of rural and regional communities have been a primary driver of recent training reforms aimed at developing generalism. The Queensland Rural Generalist Program is a recent development driven by the Queensland state government in response to the unmet needs of its rural communities, and the perceived failure of the existing general practice and specialist training programs to develop a responsive and sustainable generalist medical workforce. Key elements of the Queensland model are intensive, early exposure to generalist care models; employment arrangements which maximise attraction and retention; expanded scope of practice into traditionally specialist areas including obstetrics, surgery and anaesthetics; accredited training qualifications and remuneration arrangements. Evaluation supports the success of the model in meeting rural workforce needs. Policy work is now underway in Australia to provide a common national structure
for the rural generalist role and fully integrated with Australia’s college based specialist training programs.

Australia has also introduced Rural Clinical Schools (RCS)iv and University Departments of Rural Health (UDRHs)v which provide opportunities for generalist training of health professionals, and early exposure to the value of generalist practice in rural areas. These programs have been established in rural and regional locations, where higher education faculties are formally integrated with regional health service delivery and provide significant components of requisite clinical training for a range of professions in generalist focused rural settings.

What patterns, policies and initiatives are being experienced by each country to promote higher quality and specialised care while balancing the need to meet the range of services required by their populations when and where they need them (without increasing costs)?

Australia has been building the evidence base regarding the balance between generalists and specialists in the health workforce. In 2012, Health Workforce Australia released Health Workforce 2025 (HW 2025)vi, the first long term national projections for medical practitioners, nursing and midwifery. Work is currently being done on projections for allied health professions. HW 2025 projected that under current policy settings the following outcomes will result:

- a highly-significant shortage of nurses (109,000) by 2025.
- supply of doctors is stable now but there will be a shortage of 2700 doctors by 2025.
- medical workforce is increasingly subspecialised, leading to disparities in access to quality care
- insufficient postgraduate medical training places for the number of graduates seeking them.
- current training system is poorly co-ordinated, not aligned to health system needs and is inefficient.
- uneven distribution of the medical workforce across Australia affecting rural and regional communities.
- Australia will continue to remain highly dependent on migration of international health professionals.

Australia’s Health Ministers in November 2013 agreed on a comprehensive program of national policy responses to the challenges identified in HW2025. Health Workforce Australia (HWA) will be progressing a forward program of system reforms to progress national policy responses including

- Industrial and regulatory barriers to workforce reform and innovation.
- Maldistribution of the workforce (geographic and across professions/specialties).
- Efficiency and effectiveness of the training system.
- Consistent policy approaches to achieving self-sufficiency in workforce supply.
o Progressing an ongoing program of nationally co-ordinated workforce redesign.

Australia’s health and medical training systems have many participants. No one body is responsible for the policy, funding and delivery functions of training, and this system is operating without a robust and agreed set of information, or a collective view on future requirements.

As part of the policy responses to training system shortcomings Australian governments have agreed to the establishment of a National Medical Training Advisory Network (NMTAN).

NMTAN will bring together all organizations that play a role in medical training to provide a mechanism for improved coordination of medical training, ensure stronger links between training and the health needs of the community, strengthen the generalist / specialist mix and workforce responses to emerging models of care.

The National Medical Training Advisory Network will produce five year rolling medical training plans across the whole medical training pipeline from university training through vocational training. The proposed functions of the NMTAN are the subject of public consultation. A parallel national arrangement for nursing, and allied health professions will also be established.

**Why and where is greater specialisation of the health workforce needed? What factors impede needed specialisation?**

Australia, through HW 2025, has identified a number of specific medical specialist areas that are or are projected to be in significant shortage in Australia. These are:

- obstetrics and gynaecology.
- ophthalmology.
- diagnostic specialties in pathology and radiology.
- psychiatry.

However, no case has been made for increased specialisation of the health workforce, and the consensus across all governments and the major training colleges is that the opposite is the case. Renewed interest in generalism has been articulated by all major stakeholders.

The key factors underpinning a better balance of specialism and generalism are:

- Training system alignment and co-ordination mechanisms
- Accreditation of training
- Compensation and remuneration systems.
What are the incentives to produce health care providers that deliver a wide range of services and/or provide services across multiple settings?

Australia provides a limited range of incentives to promote and encourage generalism, especially in medicine. Most effort is currently being applied in the training system (see response to Question 2.), and exploratory policy and program development work by HWA with the professions and state governments. There is now significant national interest and in pursuing role redesign and new workforce models which broaden and deepen the scope of practice of health professionals. HWA is running a co-ordinated national program in this area viii ix as well as parallel innovations governance and reform of the training systemx. Compensation mechanisms to support generalist practice are limited, especially in Medicine, and this an area of considerable renewed interest by professional and other stakeholders following the release of HW2025 and the agreed policy responses.

References:
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United Kingdom Paper

Assuring Adequate Specialists, Generalists and a Health Workforce Where it’s Needed: How do we Balance Demands to Improve Quality, Expand Access and Contain Health Care Costs

Author: Professor Peter Kopelman, Principal, St George’s, University of London

How can generalism and practice flexibility be supported and encouraged through education, policy, regulation and compensation? Are there models in the different countries that could provide insights for the others?

In 2007 an independent inquiry into Modernising Medical Careers, chaired by Sir John Tooke, made a number of recommendations about the shape and structure of medical education and training in the UK. It called for a more flexible and broad based approach to medical training, integrating both training and service objectives into workforce planning. The inquiry raised issues about the roles of trainees and consultants and the implications of the Certificate of Completion of Training (CCT) on training and practice. Subsequent inquiries have highlighted the need to develop the current structure of postgraduate medical training so it continues to provide consistent, high quality training for doctors throughout the UK. They also highlighted the importance of more flexible training in order to equip doctors to respond better to changing needs of patients and the service.

This was underlined by the Health Foundation’s commissioned report for the Royal College of General Practitioners:

“Medical training needs to become much more generalist in content, with more of it taking place in primary care settings. A placement in general practice should be compulsory during the two-year foundation programme for medical graduates. There should be an immediate extension of the length of specialist training for GPs from three years to five. This must include specific provision for training in disciplines particularly relevant in general practice, including paediatric care, learning disability, mental health, care of people with life-limiting conditions, and end-of-life care for patients and their families....................All medical undergraduates should have greater experience of these core disciplines, and opportunities for shared training modules across health and social care should be pursued”. (RCGP & The Health Foundation, 2011)

In 2011, Medical Education England (MEE) reconfirmed the issues facing postgraduate medical training which included:

- The tensions between the needs of the service and the demands of training;
- The balance between generalists and specialist care;
- Flexibility and value for money;
The need for innovation set against the risks of de-stabilisation if current arrangements are changed.

In February 2012 Professor David Greenaway, Vice-Chancellor Nottingham University, was appointed as an independent chair of the Shape of Training Review. The review is presently considering the following themes:

- Workforce needs: specialist or generalists. The review is likely to challenge an underlying assumption that there is only one appropriate outcome of successful training, which all doctors must meet, with any other outcome being failure. It will consider whether there are
- Alternatives models for training including the balance between generalism and specialism, the timing of sub-specialty training and exit points within training.
- The breadth and scope of training: The review will consider how trainees may gain the right mix of knowledge, skills and behaviours to prepare them for the range of environments in which they may need to provide care in the future.
- The needs of the Health Service: the tension between service and training when working in a system based on trainees delivering the service, particularly at nights and weekends.
- The needs of the patient: addressing the current lack of transparency for patients and the service about the standard of practice that both trainee doctors and trained doctors have attained.
- Flexibility of training: considering the difficulty doctors may face moving from one specialty to another.

Professor Greenaway is scheduled to publish his report towards the end of 2013 (see http://www.shapeoftraining.co.uk/)

Recent work by the Centre for Workforce Intelligence (CfWI) in reviewing future medical and dental school takes (DH, 2012) highlights the issues of balance between generalism and specialism. The work demonstrates the tensions between the potential oversupply of a trained hospital doctors in all the scenarios explored if there is no rebalancing from some specialties to general practice. However, it makes important assumptions about career choices, part-time working and flexible careers.

What patterns, policies and initiatives are being experienced by each country to promote higher quality and specialized care while balancing the need to meet the range of services required by their populations when and where they need them (without increasing costs)?

The Future Hospitals Commission has been established by the Royal College of Physicians of London to review all aspects of the design and delivery of inpatient hospital care. It is increasingly clear in the UK that a radical review is required of organization of hospital care is required if the National Health service is to meet the challenge of rising acute admissions, an ageing population and an increasing number of patients with complex, multiple
conditions. Hospitals also need to continue to adapt in order to take advantage of new technologies, drugs and innovations and manage pressures on budgets. These all affect hospitals’ abilities to deliver:

- high quality care sustainable 24 hours a day, 7 days a week
- continuity of care as the norm
- stable medical teams for patient care and education
- optimised relationships with other teams
- appropriate balance between care by specialists and generalists
- discharge arrangements which realistically allocate responsibility for further action

A key element of the review is the staffing of hospitals. The “people workstream” within the Commission is looking:

- What is the ideal size and make-up of teams to deliver care to acutely unwell patients;
- How medical consultants should work in the next 10 years;
- The development of new types of medical staff;
- How to make the better use of the current non-consultant medical workforce.

The preliminary conclusions support the concept of greater generalism within the medical staff, extended roles for nursing (but balancing this with the importance of basic nursing care) and the development of the role of physician associates. The importance of specialized care is acknowledged but the challenge is to create a better balance between generalism and specialism that will facilitate safe, high quality and sustainable care for all (see: [http://www.rcplondon.ac.uk/projects/future-hospital-commission](http://www.rcplondon.ac.uk/projects/future-hospital-commission)).

The costs of implementation are discussed in the next section. The issue is how better to use resources in an environment where resources are constrained

**Why and where is greater specialization of the health workforce needed? What factors impede needed specialization?**

Increasing concerns about the affordability of the medical workforce in the UK has resulted in a series of reviews by the CfWI. The technique of horizon scanning combined with Delphi techniques and analytical modeling is providing insight into possible workforce needs for the future. The analysis will inform workforce planners about particular requirements for specialization by professions other than medicine in order to address areas of patient care formerly served by doctors.

The CfWI review of medical and dental school intakes (DH, 2012) forecast (full-time equivalent basis) an increase of 29 per cent in GP supply and 64 per cent in trained hospital doctor supply between 2010-11 and 2039-40. The 64 per cent increase is near the top of the projected increase in the NHS budget across a range of scenarios, and, if it materializes, will have serious budget implications. An increase of this magnitude “may necessitate
substantial offsetting cost savings to be made in other areas”. It beggars also the question about how current costs are applied and opportunities for greater productivity and efficiency in utilizing the workforce.

Another major factor that impedes such work is a continuing dependence on a traditional approach of planning by profession rather than perceived patient need. CfWI has begun to address this by evaluating the likely needs of an ageing population with multiple morbidities but this require greater “buy in” from all health professions (see: http://www.cfwi.org.uk/resources/ipc-care-pathway-study-for-older-people-admitted-into-care). Work is also underway on workforce modelling around skills and competences, and across multiple professions rather than individual ones. This should provide a better understanding of how we might shape existing resources and use them to best advantage.

What are the incentives to produce health care providers that deliver a wide range of services and/or provide services across multiple settings?

Integrated care – patient care that crosses the health boundaries between primary and secondary care and social care – has been long proposed in the NHS. It is again topical in a context of an increasingly ageing population with increasing prevalence of long term conditions such as diabetes, cardiovascular and respiratory diseases and musculo-skeletal problems. Diabetes is an excellent example where integrated care (shared between primary and secondary care providers) results in enhanced standards of care, improved patient outcomes (and satisfaction) and financial economies.

The incentive for better care is evident to health professionals as well as patients. The major counter determinants are twofold:

- Health professional training rarely includes training to work across boundaries and the necessary additional skills;
- Funding/ commissioning of care pathways remains focussed on traditional schemes of care: primary or secondary rather than integrated care.


Under recent changes in the health system in England, general practitioners have been given more power to plan services appropriate to local needs, including much of the commissioning. (RCGP, 2012).

‘Super’ specialist services are provided in relatively few centres, treating rarer conditions, or those that need a specialised team working together at a single centre. The NHS Commissioning Board (now NHS England) has set out a single, national system for commissioning specialised services in a new operating model, to achieve consistent high quality services across England (NHS Commissioning Board, 2013a). NHS England aims to commission the provision of specialised care that is productive, efficient, patient-centred,
outcome based and accessible to all regardless of location (NHS Commissioning Board, 2013b).

The NHS Commissioning Board has held a consultation into service specifications and clinical policies and will publish a response soon. Specialised clinicians, expert patients and public health representatives were involved in this process, developing core standards to ensure that providers offer evidence-based, safe and effective services (NHS Commissioning Board, 2013c).

References

NHS Commissioning Board (2013a) Specialised commissioning resources http://www.commissioningboard.nhs.uk/resources/spec-comm-resources/


APPENDIX D: Canadian Poster Abstracts

Examining Factors for Specialist Physicians Under- and Unemployment in Canada: A Mixed Method Study
Authors:
D. Frechette, D. Hollenberg, G. Babitskaya,

There have been troubling signs in Canada that some newly certified medical specialists have had difficulties obtaining employment. The main objective of this longitudinal study is to examine the factors underlying specialist physician under/unemployment in Canada.

A mixed-method research design combining qualitative and quantitative approaches was applied. Fifty voluntary, confidential interviews were conducted with selected stakeholders including specialty and sub-specialty medicine committee chairs and program directors, senior hospital leaders, post-graduate deans, residents and recent graduates. Longitudinal quantitative survey data was also collected since 2011 through an online survey administered to every new Royal College specialty and sub-specialty certificant (N= 2002 in 2011 and N= 2231 in 2012 with response rates of 655(32.9%) and 713(31.9%) respectively).

Driving factors can be categorized into three main areas: (1) Economic: changing priorities and concomitant decreased spending have resulted in less hospital hiring and allocation of operating room time and resources; losses in investment portfolios have prompted some physicians to postpone their retirement; (2) Health System/Structural: increased reliance on residents by many hospitals to perform varying aspects of ‘call service’ and patient care reduces jobs previously open to new graduates; misalignment between needs-based provincial workforce plans and residency intake is resulting in some ‘oversupply’; some compensation models for hospital-based specialist teams do not incentivize creation of new positions; certain interprofessional care models and changing scopes of practice among new and existing health professions have decreased the need for specialist positions by reducing duplication of clinical roles; (3) Individual/Contextual: influencers of work location of new graduates include desire to be in the same city as spouse/partner and family members, and preference for a particular city or academic center; lack of career counseling was also thought to be detrimental to obtaining employment following graduation (only 37% received counseling in 2011 and 47% in 2012).

Summary profile of under-unemployed population: Majority of impacted specialists is from procedural disciplines. 66 new graduates reported in 2011 not being able to find employment, up to 97 in 2012. Survey shows 39 new specialists (12.3%) in 2011 and 64 in 2012 (17.8%) were continuing training because they did not have a position. Of those continuing training in 2012 (subspecialty/fellowship), 60% stated they believe additional training will make them more employable.

Among graduates at the endpoint of training in 2012 asked why they believe they do not have a job placement, 19 (40%) indicated they felt they did not have a job because they wished/needed to stay near family, 10 (21%) stated spousal employment and 14 (29%) indicated not liking living in rural/remote settings.

Ongoing research is needed to examine specialty and jurisdiction-specific trends in more detail to avoid, among others, over-correction in enrollment quotas.
APPENDIX D: Canadian Poster Abstracts

Factors Affecting Effectiveness of Interdisciplinary Primary Health Care Teams: A Systematic Review of Canadian and International Literature

Authors:
G. M. Mulvale, M. Embrett, S. Razavi,

Background:
Interdisciplinary primary care (IPC) approaches have gained widespread support in policy discourse in Canada. A qualitative case study of Family Health Teams – a recent IPC model in Ontario - suggests considerable variation in individual team’s effectiveness, and the importance of policy (e.g. funding, remuneration, regulatory, education) and within team (e.g. leadership, team-building, communication, personal) factors to team functioning. It is unclear if these results are generalizable to other contexts.

Study Question:
What factors have been found to facilitate and/or impede the effectiveness of team functioning in IPC models in Canada and other countries?

Methods:
We conducted a systematic review of the published literature on IPC delivery over the period 1990 to 2013 using Medline, Embase, CINAHL, HealthStAR and Proquest. The search string included variations on terms including ‘interdisciplinary team’, ‘primary care’, ‘collaboration’ and ‘team functioning’. The focus was on studies which attempted to measure the impact of various factors or interventions on team functioning.

Results:
Our initial database search identified 838 articles, of which 26 met inclusion criteria based on title and abstract review. Upon full text review eight studies were found to meet the inclusion criteria. Due to limited findings in the stage one search, the research team expanded the scope of the search to include an earlier starting date (1990 rather than 2000), and to specifically include factors that have been discussed in qualitative literature as being associated with team functioning and effectiveness as additional search terms. This yielded three additional studies which met the inclusion criteria after full text review. Most studies focused on within team and personal factors (e.g. role clarity, open culture within the team, strong leadership and professional culture and attitudes). With the exception of education and training, the policy factors suggested in previous qualitative research were not examined in the studies reviewed.

Conclusions:
The findings suggest that opportunities do exist for policy makers to enhance the effectiveness of IPC teams. At the same time, many of the most frequently reported factors that were significant can all be influenced within the teams themselves. These include having frequent team meetings, developing a shared vision or goals, working toward more explicit understanding of different professional roles, and giving all providers voice in decision-making. While policy-makers have a role in supporting teams to understand the importance of these factors, many of the decisions that influence them will be made within the team. On the other hand, optimal team size, mechanisms for routine audit and performance feedback, funding or encouragement for the use of a team champion or facilitator all have the potential to be influenced by policy-making. Efforts should be focused on interprofessional education and education programs to enhance the identified factors within individual teams. The findings suggest that there is a great need for further research in this area, with a particular need for research on economic and regulatory factors.

Limitations: The findings were limited by the number and quality of the studies identified, none of which were randomized control trials.
APPENDIX D: Canadian Poster Abstracts

The Feminization of the Physician Workforce: Implications for Health Human Resources Planning

Authors:
L. Hedden, M. L. Barer,

Objectives:
The primary objective of this research synthesis is to investigate the impact of the increasing proportion of women in the physician workforce on levels service delivery. Specific questions focus on the differences between male and female physicians in terms of quantity of work (full- vs. part-time, quantity of work, and time spent working); the patient population; the basket of services delivered; and patterns of care delivery.

Methods:
A systematic scan of the peer-reviewed and grey literature was conducted, covering literature published in English between January 1990 and January 2013, using variations on the terms “physician”, “workforce” and “women”. Peer-reviewed literature was selected from Medline, EMBASE, and Web of Science. Grey literature was identified using the Canadian Health Research Library, ProQuest Dissertations and Theses, the Canadian Health Human Resources Network Library, individual site searches from relevant organizations, governments, associations, and professional bodies, and Google site searches. Forward and reverse citation searches of were also completed. Included studies were coded according to their fit within three broad outcome areas: workload and activity (encompassing hours worked, activity etc.); patient or service mix; and workforce trends. Information on each study was collected using an abstraction tool, and the quality of included research was also qualitatively examined.

Results:
The literature focused largely on differences in the amount of work completed by male versus female physicians. Studies examining differences in practice style, patient mix, service mix, and broader workforce trends were much less common. Female compared to male physicians are more likely to have engaged in part-time work at some point during their career compared to their male counterparts. They work fewer hours per week, with difference in hours worked peaking during childbearing years. Similarly, women tend to see fewer patients and deliver fewer services than their male counterparts. Male and female physicians practice medicine differently; they see different cohorts of patients with different problems, and they provide different services. Females are less likely to work in rural practice, and are more likely work in partnership or group-based practice rather than solo. They see a higher proportion of female patients and a lower proportion of elderly ones compared to males. They are also more likely to see patients with complex psychosocial problems. The proportion of women practice medicine is rising; however, it is not rising uniformly across all specialties. Thus, specialities with very low rates of female participation may eventually experience shortages.

Conclusions:
The literature in this area focuses almost entirely on differences in the amount of work done by female compared to male physicians. More research examining differences in patient and service mix, and broader workforce trends is warranted. Robust measures of physician supply must account for sex differences in volume, and but also on the implications of the differences in patient/service mix and practice style. Issues of fair work-life balance for physicians, regardless of sex, warrant attention and research.
APPENDIX D: Canadian Poster Abstracts

Addressing Provider Shortage in Underserviced Areas: The Role of Traditional, Complementary and Alternative Medicine (TCAM) Providers in Canadian Rural Healthcare

Authors:
D. Hollenberg, M. Lytle, R. Walji, K. Cooley,

Objective:
To examine the potential Human Resources for Health (HRH) role of TCAM providers in rural/remote areas of Ontario. Internationally, TCAM providers have been recognized by the WHO as essential for rural and primary healthcare (PHC), yet in Canada their HRH role has yet to be researched in-depth and as an aspect of Canadian rural health policy.

Methodology:
This study drew on a case study of rural TCAM providers in Ontario, drawing on interviews and ethnographic observation. The research questions were (1) To what extent are TCAM providers delivering care in rural/remote communities? (2) How might TCAM providers be interacting with biomedical (BM) providers? and (3) In what specific ways may TCAM providers be contributing to HRH? Using purposive sampling, we conducted 29 in-depth interviews from four TCAM provider groups within multiple rural localities in Ontario: naturopathic doctors (NDs), doctors of chiropractic (DC), registered midwives (RM) and traditional Aboriginal healers (THs). A minimum of five interviews per provider-group was conducted. Rural physicians and certain key health administrators were also interviewed and included as supplementary data (n = 7). Data was analyzed using qualitative content analysis.

Results:
TCAM providers are essential for rural healthcare in Canada, as they are accessible and without common wait time issues as with BM providers. TCAM providers fill healthcare gaps by providing holistic care based on cultural/philosophical and spiritual congruency, “health promotion/education” and lifestyle counseling. THs play a major role in the treatment of Indigenous patients by providing culturally-specific philosophies and modalities of treatment. TCAM providers deliver PHC. NDs in some rural and remote communities indicated that they often provide, in shortage areas, a wide array of PHC services and treat a variety of acute and chronic health concerns ranging from infections, pediatrics and fertility to sexual and drug abuse, diabetes, cancer, heart disease and issues related to care of the elderly. TCAM providers such as RMs, DC and NDs also provide two novel aspects of PHC: (1) Bridged Care: the reintroduction of a patient into the BM healthcare system who has been “lost” to the system and (2) Interim Care: the provision of care while a patient is waiting for specialty care or for a specialty service. Though TCAM providers strive toward interprofessional collaboration (IPC), few accomplish this due to perceived and/or real barriers with interprofessional education (IPE).

Conclusion:
TCAM providers currently provide rural care to warrant an HRH role in Canada. There is a need for more research into IPE/IPC between rural TCAM professions and the BM community in order for their role to become embedded in future rural health policy.
APPENDIX D: Canadian Poster Abstracts

“Source” Country Perspectives on the Migration of Health Professionals: Causes, Consequences and Responses
Authors: I. Bourgeault, R. Labonte, V. Runnels, C. Packer, G. Tomblin Murphy, K. Kienapple, M. Frere,

This research addresses the causes, consequences and responses of source countries to the migration of their highly trained health personnel. Depending on the country site, it focuses on doctors, nurses, pharmacists, dentists, therapists, health care managers and educators. The countries examined specifically include the Philippines, India, South Africa, and Jamaica. Data is being gathered about who is migrating, how they are migrating and to where, and what some of the consequences have been of the migration of highly trained health personnel from these countries using a variety of indicators considered important by those actually within the countries being studied. Additionally, some of the responses to minimize the negative consequences of out-migration by health professionals will be examined highlighting some useful examples that could be implemented across these and other countries experiencing similar problems. This topic should be of interest to those in Canada because it is one of the countries that these personnel are migrating to, and we need to better understand the consequences this has for countries of origin. This information will help to ensure that Canada meets its international obligations to improve situations in countries from which it benefits from highly skilled migration.
APPENDIX D: Canadian Poster Abstracts

The Labour Force in Long-Term Residential Care: Comparing Across Jurisdictions

Authors:
K. Laxer, P. Armstrong

The Labour Force in Long-term Residential Care: Comparing Across Jurisdictions In spite of the international emphasis on care on private households, the growing number of those living with severe disabilities and of older adults means that the demand for long-term residential care is rising. Various scandals in these care homes, along with the rising acuity levels of residents, have resulted in calls for more training of those providing care. Concerns have also been raised about the supply of workers, drawing attention to the pay, benefits and status attached to work in long-term residential care. This sector has long been seen as an important link in the international care chain, with high income countries seeking workers from low income countries. Yet national data sources provide very little detailed information on the long-term residential care labour force. This poster will outline what we do know from national statistical sources in Europe and North America and what we need to know if we are to develop an accurate assessment of the training and supply in this critical sector of health services.
APPENDIX D: Canadian Poster Abstracts

Planning the Health Workforce and System Based on the Health Needs of the Population- A Knowledge Synthesis

Authors:
G. Tomblin Murphy, A. MacKenzie, S. Price, A. Elliott Rose,

Objectives:
To produce a synthesis paper on needs-based HHR and health system planning approaches as part of the CHHRN initiative to produce syntheses on key HHR thematic areas as a tool to provide evidence which decision-makers can use to improve decision-making, policy development and knowledge mobilization. A secondary objective is to use these syntheses to help map a research agenda in its four key thematic areas.

Methods:
Each of the three Pan-Canadian HHR Network (CHHRN) regional hubs took leadership in developing a synthesis paper on one of the key thematic areas of health human resources. The Eastern Hub, led by Dr. Gail Tomblin Murphy, has developed a paper on “Planning the Health Workforce and System Based on the Health Needs of the Population”. The purpose of this document is to synthesize the existing literature on needs-based HHR and health systems planning. To this end, a systematic review of the peer-reviewed and grey literature on HHR and health systems planning from 1990 through 2012 was conducted, using standardized literature search methodologies. The initial draft of the synthesis was then discussed by a group of Canadian stakeholders representing health care authorities, national health professional organizations and provincial decision-makers to ensure the content was comprehensive and consistent.

Findings:
There is a paucity of published work which explicitly considers needs in estimating HHR or system requirements for planning purposes. Generally, there is evidence that needs-based approaches are considered appropriate, however, implementation appears to be less evident. Critical issues raised in the literature include the inherent difficulties associated with using forecasts as errors are likely, the availability of planning data in general and measures of health care needs specifically, the challenge of obtaining the various types of data required, particularly levels of service, and the need to have strong collaboration between planners and policy makers as well as the collectors, stewards, and analysts of planning data and representatives of health care providers themselves for effective implementation.

Conclusions:
A range of planning methods, frameworks and tools are available to planners and policy makers seeking to make their health care systems more responsive to population health needs. Although there is growing endorsement of the principles of needs-based HHR planning, practical implementation of such methods is only emerging in a few countries. Besides the growth in the number and range of these tools, factors supporting their implementation include improved access and quality of health human resources data that reflect a broad understanding of health, the integration of needs-based health human resources planning into broader health and system planning and improved partnerships between researchers and research users.

Potential directions for future research and collaboration include
The enhancement of measurement and collection of data on health care needs, including consideration of the potential use of prospective data to inform HHR planning; Continuing the evaluation of new and existing models of care delivery and the impact of those models on patient, provider and system outcomes; and Evaluation of the performance of needs-based health system and HHR planning policies.
APPENDIX D: Canadian Poster Abstracts

Pan-Canadian Health Human Resources Planning Toolkit
Authors:
K. Connell,

Objectives:
The Nova Scotia Health Research Foundation (NSHRF) received funding from Health Canada to develop a national web-based Toolkit for HHR planning. The Toolkit consists of evidence based knowledge and addresses the national demand for HHR planning information and tools. Information contained within the Toolkit will constantly evolve as information is tested, best practices shared and when new models are created. The Toolkit will aid planners and decision-makers by: 1) providing linkages across Canada and the opportunity to interact with fellow professionals via a virtual forum, 2) selecting models that best match specific needs, resources and skills capabilities and 3) supporting the development of needs-based HHR planning models.

Method:
Process developed in consultation with CHHRN (Researchers), Advisory and Review Committees. The Advisory and Review Committee established necessary assessment criteria and developed a decision-making framework to assess, review, select and use HHR planning models interactively. Interviews were conducted with HHR jurisdictional and organizational experts involved in HHR and workforce planning throughout Canada. These interviews established which HHR planning models are currently in use; their functions and improvements; changes in healthcare delivery; barriers; and strengths. Focus Groups were also conducted with HHR experts to assess the functionality and usability of the Toolkit. These focus groups included: Western & Northern HHR Planning Forum, ACHDHR, HEAL and Toolkit Advisory and Review Committees, Interview Responders. Evaluation and dissemination of the Toolkit is ongoing.

Conclusions:
The Nova Scotia Health Research Foundation (NSHRF) provides ongoing management and development of the Toolkit. The Toolkit was developed to address gaps in the health care system, influence informed decision making and facilitate planning for HHR. Learning about HHR planning models, encouraging cross jurisdictional communication and creating a community where HHR professionals can interact will result in improved evidence based deployment of HHR, ultimately creating a health care system that is cost effective and sustainable.
APPENDIX E: United States Poster Abstracts

Letting the Gini out of the Bottle: Does Medicare Spending on Graduate Medical Education Relate to Income Inequality?
Authors:
K. Yamazaki, N. Yaghmour, P. H. Rockey,

Purpose of Study:
Using individual US states as the unit of analysis, we sought bivariate correlations between state-level socio-economic and geo-demographic factors and the intensity and composition of GME within each state.

Background:
State governments in the US have great control over health care delivery. States decide who can deliver health care through professional licensing boards and scope of practice legislation; what services are paid for by Medicaid and private insurers through insurance regulations and legislated benefits; and how care is provided through regulations of health-care facilities. The Affordable Care Act strengthens states’ roles by vesting in them authority to create state-based insurance exchanges. However, Medicare blankets all states with a uniform federal insurance plan for citizens over 65. Also, Medicare is the major funder of Graduate Medical Education (GME), providing US teaching hospitals about $10B of the $15B explicitly spent on GME.

Findings:
Predictably, the number of ACGME programs (#GMEPGMS) in a state correlates most highly with a state’s population (R=.85). But despite the fact that Medicare is the major source of funding for GME, the #GMEPGMS correlates inversely to a state’s percent of the population on Medicare (R= -.11), and weakly to % on Medicaid (R=.23) and % uninsured (R=.07). Also, the #GMEPGMS correlates negligibly with state-wide personal health care spending per capita (R=.08) and Medicaid spending per beneficiary (R=.02). However the #GMEPGMS does correlate significantly with total Medicare spending per beneficiary by state (R=.61) as well as the state’s household-income GINI coefficient (a measure of income inequality within the state) (R=.49). A state’s GINI coefficient correlates highly to a state’s Medicare spending per beneficiary (R=.68); moderately to % of population on Medicaid (R=.49); weakly to personal health care spending (R=.26) and the % uninsured (R=.21); and not at all to the % of population on Medicare (R=.04) and to Medicaid spending per beneficiary (R=.00). Using three factors (state-level Medicare spending per beneficiary, household-income GINI coefficient and the #GMEPGMS per state), states group into four distinct clusters: low, moderate, high and very high on all three measures.

Discussion:
Because GME dollars are distributed to teaching hospitals through complex and opaque funding formulas based on how many hospital beds are occupied by Medicare beneficiaries, finding a correlation between a state’s Medicare spending per beneficiary and its GME intensity is not surprising. However, the weak correlations between GME intensity and both public and private health insurance coverage, as well as non-Medicare health spending suggests that the current distribution of dollars to train future physicians is based on criteria that do not represent the health care needs of a state’s population. In addition, the strong and dominant correlation between a state’s household-income inequalities and Medicare spending per beneficiary suggests a potential relationship that deserves further investigation.
APPENDIX E: United States Poster Abstracts

Community Health Center Expansion: Roles of Nurse Practitioners and Physician Assistants
Authors:
P. A. Morgan, C. Everett, E. Hing

Research Objective:
Since their creation as part of the War on Poverty in the 1960’s, Community Health Centers (CHCs) have filled an important role in providing health care to underserved populations in the United States. Recent infusions of federal support have expanded this role, and demands on CHCs are expected to grow with implementation of health care reform under the Affordable Care Act. Nonphysician clinicians have been used extensively in CHCs for decades, but their use has increased, with nurse practitioners (NPs) and physician assistants (PAs) providing 30% of CHC visits in 2006-07. This project examines the roles of NPs and PAs in CHCs from 2006-2010.

Methods:
This study analyzes annual cross-sectional restricted survey data from the National Ambulatory Medical Care Survey (NAMCS) Community Health Center sample from 2006-2010. The NAMCS CHC sample is a representative national sample of CHC providers and patients. We describe provider mix, estimate number of weekly clinical encounters by provider type, and compare nonphysicians with physicians with regard to patient characteristics and patient care attributes. We also examine trends in skill mix use in CHCs. Survey weights are used to produce national estimates.

Findings:
The sample included CHC visits to 1186 physicians NPs, and PAs, representing a national average estimate of 150,100 providers and 36,469,000 patient visits per year. For the combined five year sample of 1186 providers, 68% were physicians, 21% were NPs and 9% were PAs. The physician to nonphysician ratio did not change significantly over the five years studied. Our analysis found that types of chronic problems seen varied among the three provider groups, with PA patient conditions often more similar to those of physicians than to those of NPs.

Conclusions:
Results provide detailed information about staffing patterns and deployment of nonphysician clinicians in a setting in which they comprise a large portion of providers and care for populations that carry a large burden of chronic disease. This project is relevant to current issues related to the implementation of healthcare reform, access to care for vulnerable populations, costs of healthcare, and expected workforce shortages. This project describes a system that embodies a potential solution to expected primary care provider shortages—staffing models that utilize high proportions of nonphysicians in primary care settings. Since nonphysicians cost less to employ than do physicians, results of this analysis also have implications for addressing costs associated with provider staffing. This information will be useful to health care administrators and workforce planners in other settings as they face the difficulties of providing care to growing numbers of patients with chronic disease and seek solutions to anticipated workforce shortages.
APPENDIX D: United States Poster Abstracts

Improving Access to Dental Care Through Diversity: The Data Disconnect
Authors:
E. Mertz, C. Wides, A. Cooke,

Objectives:
The U.S. is seeking to improve the racial/ethnic and socioeconomic diversity of the dental workforce in hopes of improving access to oral health care for underserved populations. Yet most program evaluations fall short of linking recruitment, retention, practice patterns and patient outcomes. Building from the conceptual model of the “dental pipeline,” this study explores what data elements, methods, and operational steps are required to connect the chain

Methods:
We conducted a literature review in PubMed, Google Scholar, and Sociological Abstracts utilizing combinations of 20 keywords to identify programs to improve diversity, stated rationales and goals, and reported outcomes. We examined publicly available data sources on the dental workforce, programmatic data where possible, and assessed the linkages among them for longitudinal tracking over time.

Results:
The evidence presented to link diversity to patient access to oral health care consists primarily of racial concordance between patients and practitioners -- often not based on practice data but on geographic proximity. Metrics and data for measuring the outcomes of ‘cultural competence’ and ‘access to care’, cited as key goals for diversity programs, are lacking. Data linking dental student recruitment efforts to education exists but is generally not publicly available. Association data are available on education (admission, entry survey, exit survey, matriculation) and practice (state of license, location of practice, practice populations and staffing), however, the education and practice data are not linked restricting longitudinal tracking. Payment data (Medicaid, private insurance) tracks utilization, however health outcomes are only available in national population surveys.

Conclusions:
A wealth dental workforce data exists, however these data sources are disconnected and not publicly available restricting meaningful analysis of the impact of diversity efforts within the “dental pipeline” on access to dental care. Organizational politics pose a greater barrier to progress in this area than do methodological issues.
APPENDIX E: United States Poster Abstracts

New Data to Inform Global Workforce Planning and Education of Physician Assistants

Authors:
A. Glicken, A. Miller,

Over the past 48 years, PAs have demonstrated that they are effective partners in a changing healthcare environment; adaptable to the needs of an evolving delivery system. Nine countries, from South Africa to the Netherlands, recently launched the profession through adaptations of US education/practice models. Effective workforce policy at the national, regional and local level requires comparable measures of provider pipelines, productivity and attrition; this study reports new measures and data on PAs to inform this dialogue.

This study draws from primary data from the Physician Assistant Education Association (PAEA) and the nccPA Health Foundation, in partnership with the National Commission on Certification of Physician Assistants (NCCPA). Primary sources include PA candidates, educational programs, students and graduates. AEA’s candidate pipeline data (2011-2012) came from the Centralized Application Service for Physician Assistants (CASPA). PAEA’s 27th Annual Report (2010-2011) is drawn from an annual survey of member programs. The nccPA Health Foundation’s workforce data is supported by a contract with HRSA’s Office of Health Workforce Analysis to develop a minimum data set on the profession. Data was solicited as part of NCCPA’s recertification maintenance process.

Interest in PA education continues to be strong. During the 2011-12 admissions cycle, 18,501 unique applications were initiated, representing a 10% increase over the previous year. Average applicant age is 27 (71% female). Eighty-six percent of programs now participate in CASPA and a supplemental survey ensures consistency with non-CASPA participating programs. There are 170 educational programs with an estimated 65 institutions seeking provisional accreditation for new programs or expansion to occur by the end of 2016. Over the past 5 years, there have been 32 new physician assistant programs and the maximum capacity of all programs has increased on average by 17%. Programs are typically 26 months and offer a Master’s Degree. Annually, there are an estimated 6035 physician assistant graduates. Additional data from the survey will be presented.

New measures on PA practice provide information on 36 variables including key demographic and practice information related to geographic distribution, employment history, and description of primary and secondary clinical positions. These data describe PA and supervising physician specialty and type of practice, proportion of time spent in activities (i.e. direct patient care and indirect services); patient services (i.e. diagnosis, treatment and care coordination), payer mix, plans for continued employment and salary information. As of December 31st, 2012, 55,066 (61%) of certified PAs have completed their “PA Profile” with the remainder expected to complete by the end of 2013, based on a two-year certification maintenance cycle. Analysis of the current sample reveals it is representative of the total population of certified PAs. Specific findings on key variables will be reported at the conference.

Evolving care models require providers to accommodate to new standards of accountability focused on efficiency, sustainability and quality of care. New models of inter-professional practice promote the utilization of physician assistants in physician led teams. Armed with pipeline and graduate data, policy makers will be positioned to ensure all patients have access to high quality, effective care.

![Royal College Logo](image1.png) ![Health Canada Logo](image2.png) ![CHHRN Logo](image3.png)
APPENDIX E: United States Poster Abstracts

A New Data Collection Mechanism is Effective in Providing Information to Inform Workforce Policy and Planning

Authors:
A. Glicken,

The Bureau of Labor statistics expects the Physician Assistant (PA) profession to grow by 30% in ten years, much faster than the national average (71 new programs under development). Tracking data on the profession has become increasingly important given new attention to developing an evolving healthcare delivery system focused on team-based, interprofessional care. To address this need, the National Commission on Certification of PAs recently launched an online data collection tool. This tool provides a unique opportunity to collect a minimum data set on the profession that is integrally tied to the certification maintenance process. This poster describes the development, implementation and outcomes of the PA Professional Profile, a new data collection tool and process to inform workforce policy and planning.

Development of the data collection system included identification of relevant variables, creating an infrastructure for data entry, storage and retrieval, licensing and data sharing agreements, privacy and security policies and strategies to engage stakeholder buy-in. The PA Professional Profile and backend data warehouse consisted of three sections including “About Me”, “My Practice” and a “New Graduate Profile”. Information on 36 variables including key demographic and practice information related to geographic distribution, employment history, and a description of primary and secondary clinical positions. These data describe PA and supervising physician specialty and type of practice, proportion of time spent in activities (i.e. direct patient care and indirect services); patient services (i.e. diagnosis, treatment and care coordination), payer mix, plans for continued employment and salary information.

As of December 31st, 2012, 55,066 (61.0%) of certified PAs have completed the Profile, with the remainder expected to complete by the end of 2013, based on a two-year certification maintenance cycle. Preliminary data analysis on over 50 variables has now been completed. The “New Graduate” section was launched in January and collects information from new graduates and alumni of 172 programs. Examples of finding include: the profession is 67% female and 56% of PAs received a Master’s degree upon program completion, with the rest receiving a Bachelor’s, Associate’s degree or informal training. Ninety-five percent are working in at least one clinical position with 33% working in general primary care; 46% have practiced in 2-3 clinical areas across their career. Approximately 14% percent practice in a rural or isolated community.

Integrating data collection into certification and/or licensure processes can be effective in providing information to inform workforce policy, planning and the development of education programs. Interest in the PA profession is growing globally. A dynamic database provides an opportunity to track important workforce data that can help inform educational program curriculum and workforce planning by highlighting practice patterns and trends in the delivery of health care services.
APPENDIX E: United States Poster Abstracts

Selecting a Representative Sample of States for a Survey About GME Funding and Policy
Authors:
J. C. Spero, E. Fraher, P. Rockey,

Purpose of Study:
We will describe the methods used to select a representative number of U.S. states for a survey of graduate medical education (GME) decision makers at the state level. The ultimate aim of our study (via structured interviews of key stakeholders and decision-makers) is to synthesize lessons learned from state-based initiatives to finance and expand GME training. To obtain a representative sample of states, we sought both balance and diversity among geographic, demographic, and physician-workforce factors.

Population Studied, Data Sources, and Study Design:
We based our state-selection criteria on multiple data sources, including the 2010 U.S. Census, the AAMC 2011 State Physician Workforce Data Book, the 2011 Kaiser Commission on Medicaid and the Uninsured and the American Medical Association's Graduate Medical Education database, (collected via GMETrack). We based state selection criteria on the following variables: percent of state population living in an urban area, ratio of total number of physicians to 100,000 population, GME residents to 100,000 population, percent IMG of total active residents and fellows in state on Dec 31 2010, percent active physicians who completed GME in state, and percent of nonelderly population who were uninsured during 2009-2010. We also created a variable for percent of 2011 graduates likely to be generalists in internal medicine, pediatrics, family medicine, surgery, and psychiatry. In addition to seeking balance and diversity in our selection of states, we sought states that have actively pursued new policies in financing and/or allocating GME slots over the past 10 years. To identify states active in GME policymaking, we reviewed published literature, white papers, and position papers. To verify that our state sample reflected national norms and diversity, we used box and whisker plots to compare selected states to both the national average and to unselected states.

Key Findings:
Our methodology resulted in a sample of states that vary widely by geographic and demographic as well as health workforce factors. Our final sample includes all WWAMI states (Washington, Wyoming, Alaska, Montana, and Idaho) plus California, Florida, Georgia, Illinois, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Tennessee, Texas, Utah, and Vermont.

Implications of Findings and Policy Relevance:
Our state selection criteria represent a novel method of using existing geographic, demographic and health workforce datasets to select a representative sample of states for a qualitative study. Although states vary greatly in their population and health workforce demographics, our sample of states should provide useful information that applies to GME policy-making processes in all states.
Selecting a Representative Sample of States for a Survey About GME Funding and Policy

Authors:
D. M. Roberton, B. Kaur, N. Hogan, R. Astles-Phillips, N. Glasgow,

The Medical Schools Outcomes Database and Longitudinal Tracking (MSOD) Project aims to determine career objectives of all medical students in Australia, with particular reference to specialist career choices, and intended geographic location of practice. The project is longitudinal, with continuing enrolment of consecutive annual cohorts of commencing medical students.

The project provides minimum dataset questionnaires for all commencing medical students in Australia. Questionnaires are then provided at completion of medical school, and in the first and third postgraduate years. Further questionnaires are planned for postgraduate years five and eight. The project enrolled its first commencing medical students in 2005. All 18 Australian medical schools have provided questionnaires to their students from 2008 onwards. Questionnaire completion rates for the Commencing Questionnaire have been greater than 94% since inception. From 2005 – 2011, 27,403 questionnaire responses were provided. 18,661 respondents were commencing medical students (7 consecutive cohort years), and 5,690 respondents were completing medical students (4 cohort years).

Graduate entry programme commencing medical student numbers were 9,113, and direct entry (undergraduate programmes) commencing student numbers were 9,548. Gender profiles for commencing students for 2005 – 2011 were 51.6% female: 48.4% male for graduate entry programmes, and 55.1% female: 44.9% male for undergraduate entry programmes (chi2 p<0.001).

For commencing medical students, the three most prevalent career choices were Surgery (27%), Paediatrics and Child Health (16%), and General Practice (14%).

For completing medical students the three most prevalent career choices were Surgery (19%), Adult Medicine (17%), and General Practice (13%).

There were significant differences in profiles of the top five potential career choices for commencing male and female students (chi2 661, 4 dof, p<0.001). There were also significant differences in the top five potential career choices for commencing students in graduate entry and undergraduate entry programmes (chi2 223, 4 dof, p<0.001)

Differences existed in the profiles of the top five potential career choices for completing male and female students (chi2 226, 4 dof, p<0.001), and for completing students in graduate entry and undergraduate entry programmes (chi2 32, 4 dof, p<0.001).

Commencing and completing female students were more likely to state they wished to pursue careers in General Practice and Paediatrics and Child Health, and less likely to intend to practice Surgery, than male students. Commencing and completing graduate entry programme students were more likely to state that they wished to pursue a career in General Practice.

High proportions of commencing, and completing, medical students stated that they wished to practice in future in capital cities.

Analyses of rural practice intentions showed associations between rural background, and rural experiences during medical school, with intentions for future practice in regional and rural environments.

The MSOD project is the only known prospective longitudinal study involving all medical students at all medical schools in one country. Longitudinal linkage of medical student career intentions with postgraduate specialist training experiences until the eighth postgraduate year, across consecutive annual cohorts, will provide important national information for medical workforce planning and for monitoring of evolving specialist workforce provision.
APPENDIX F: Australasia Poster Abstracts

‘The Long and Winding Road’: Building a Needs-Based Approach to Planning the General Practice Workforce in South Australia

Authors:
C. O. Laurence, J. Karnon, C. Chittleborough, M. Lorimer,

Objectives:
The study aims to develop and apply a needs-based simulation model for general practice that can be applied at regional and local level.

Methods:
The simulation model is based on estimating and comparing provider supply with provider requirements. The modules which form the model are training, supply, work and productivity, and need. National datasets will be used to build a simulation model for general practice that take into account provider supply (eg graduate entry rates, in and out migration, training places, program attrition, hours worked and productivity) and population needs (population characteristics, health status, service requirements). South Australia will be used as a case study.
The model will determine the gap between provider supply based on the projected population needs for a reference year and from this, predict future workforce requirements and be used to simulate the impact of various policy scenarios.
A stakeholder consultation process has been established through a Research Reference Group comprising of workforce planners, training providers, academics and discipline experts.

Emerging findings:
Defining most of the supply components of the model is relatively straightforward and in Australia we have reasonable datasets on medical school graduates, GP training positions and numbers and characteristics of the GP workforce. However, in and out migration of GPs and graduates is more difficult to determine when applied to a region such as South Australia, particularly as a national identifying number for medical practitioners has only been introduced recently.
Determining the measurements of the population’s health needs and GP productivity has been more problematic. This relates in part to the complexity of the measurements and to limitations of the data available. Initially, self-reported health status was used to determine need by population level, but this did not account for risk factors within the population and the likely impact on future health needs. We are in the process of incorporating risk factors into the need variable. Service requirements have been based on past utilisation rates, i.e. number of visits to the GP and other health providers.
For productivity, data are available on hours worked by GPs and number of services or number of consultations provided. However, this basic approach does not accommodate other influences on productivity such as new technologies, role substitution, use of health care teams or new models of care or link it to outcomes.
The poster will outline how this study has addressed these issues.

Conclusions:
Taking a needs-based approach to workforce planning is complex and has not been applied to general practice in Australia. It will complement and build on similar approaches that have been applied to the hospital workforce in the Northern Territory, and national projects such as Health Workforce 2025. The developmental work on better measurements of need and productivity will contribute to health workforce planning research in Australia and will potentially provide a more relevant framework to forecast the future health workforce requirements than more traditional approaches.
APPENDIX F: Australasia Poster Abstracts

What Models of Care Coordination Work (at a Health Workforce, Organisational and System Level) for Aboriginal and Torres Strait Islander People, With Complex Chronic Care Needs, and in What Circumstances?

Authors: L. Naccarella, L. Freijser, L. Stamford,

Objective: To evaluate what models of Care Coordination (funded through the Supplementary Services and Care Coordination Program by the Commonwealth Department of Health and Ageing) work, at a health workforce, organisational and system level, for Aboriginal and Torres Strait Islander people, with complex chronic care needs, and in what circumstances?

Method: Care Coordinators were surveyed with regard to demographics and roles. In depth interviews were also conducted with Care Coordinators located across three settings (General Practice Clinics; Aboriginal Health Services; Medicare Locals) regarding their roles, outcomes, contextual influences, and resource requirements.

Results: Care coordinator survey respondents (n=43, a 72% return rate) were predominantly female, mature aged, had nursing qualifications, with an average of 18.7 years working in health care. Models of Care Coordination varied according to patient and system contexts. An Indigenous community engagement and outreach strategy is essential. Care coordinators performed multiple clinical care and patient support roles. Contextual influences included: community engagement, workforce characteristics, and resource requirements (time, funding, reporting duties). Expected outcomes ranged from: clinical (health assessments, care plans) to patient support (access to specialist care, preventing hospitalisations). Resource requirements reflected contextual influences.

Discussion: What works? No particular Model of Care Coordination was superior, as they varied according to local patient and system context. The setting within which Care Coordinators worked is key to understanding the mechanisms that make the model and the Care Coordination functions work. We hypothesise that five interdependent key mechanisms are essential: 1) connections with Aboriginal and Torres Strait Islander communities; 2) workforce role clarity and capability; 3) know-how of service systems of care; 4) appropriate clinical governance arrangements and 5) a supportive authorising environment.

For whom? High levels of agreement exist between the Care Coordinators, and across the three settings in relation to the key essential mechanisms. We acknowledge that the sample was small and not representative, but illustrative of Care Coordinator roles.

In what circumstances? Given the interdependencies between the essential mechanisms, our evaluation has limited ability to reveal in what specific circumstances the models and Care Coordinators work best. We hypothesise that the models of Care Coordination and Care Coordinators will contribute to optimising care for Aboriginal and Torres Strait Islander patients with chronic conditions where there are higher levels of connections with Aboriginal and Torres Strait Islander communities, greater workforce role clarity and capability, know-how of systems of care, appropriate clinical governance arrangements and a supportive authorising environment.

Conclusion: Three key mechanisms are critical to the future of the Models of Care Coordination and Care Coordinator workforce, namely: a workforce capability framework, appropriate clinical governance; and a supportive authorising environment. Implications at the individual workforce level; organisational level; and system level for policy, practice and research are presented.
The Cost-Effectiveness of Nurse Practitioners Providing Out of Hours Primary Care

Authors: Miranda Laurant, Nancy Wijers, Regi van der Burgt

Objectives: In the Netherlands, out of hours primary care is currently organized in large scale organizations. The number of patients consulting these services have increased with 39% in the last ten years. It is expected that the pressure on family medicine will further increase, so it is relevant to come up with a solution. Although research has shown that nurse practitioners (NPs) provide equal safe care as General Practitioners (GPs), it is unclear if this is also true for out of hours care. Therefore, this study aims to assess the effects of substitution of care from GPs to NPs in an out of hours primary care setting.

Methods: A quasi-experimental study is undertaken. “CHP Zuidoost Brabant” provides out of hours care for 304,000 people in the South East of the Netherlands. In the experimental condition patient care is provided by a team of 1 NP and 4 GPs during one day of the weekend from 10am to 5pm. In the control condition patient care is provided by a team of 5 GPs during the other day of the weekend. The study was carried out from April 2011 to July 2012. Data was collected on number of different outcomes using a range of different methods (not all reported); e.g. healthcare data were extracted from electronic medical records, patients satisfactions was measured with questionnaires and effect on GPs’ workload was measured with questionnaires. Furthermore, the costs of care were assessed.

Emerging findings: On the intervention-days 6,040 patients consulted the services (NP (n=987); GP (n=5,053), on the control-days 6,025 patients. 70% of all NP consultation concerned complaints of skin (31.2%), musculoskeletal (22.2%) and airways (16.3%). The top three of most frequent complaints seen by GPs was comparable, although in the intervention group the prevalence of these complaints is slightly higher in the NP group. On the intervention-days in 42.5% of the consultations drugs were prescribed, compared to 44.1% on control-days (p<0.01). This difference is mainly due to less prescribing of drugs by NPs (37.1% compared to GPs intervention 43.0%, p< 0.001). On intervention-days 10.2% of patients were referred to emergency department, compared to 11.6% on control-days (not significant). However, comparison NPs with GPs intervention showed that NPs referred significant fewer patients (5.1% versus 11.3%). On average NP consultations lasted 3 minutes longer compared to consultations with GPs. During the shift a NP saw on average 3 patients less compared to GP intervention (3.0 versus 3.5 patients, p<0.01).

We also calculated ‘theoretical’ substitution ratio, on basis of diagnostics, NPs could see almost 83% of all patients consulting out of hours care, of which 93% are treated independently and in 7% a GP will be consulted.

Conclusions: This study showed that NPs provided equal safe care compared with GPs. Both patients and colleagues were satisfied. Substitution of care had a favorable effect on the healthcare costs. Implementation problems, such as adequate financial structure, have to be address in order to deploy NPs on a large scale.
APPENDIX G: United Kingdom Poster Abstracts

Robust Workforce Planning
Authors: G. Willis,

Overview:
System dynamics modelling was used in a major project for the Department of Health to inform a review of whether current levels of medical and dental school intakes were in line with predicted workforce need. It takes many years to train these professionals (over 15 years for a hospital consultant), so an under or over-supply cannot be corrected quickly or easily. The decisions are highly important since too few or too many will impact the health and well-being of the population. The project was carried out in 2012.

A new approach to workforce planning was developed by the CfWI for this project, which we call Robust Workforce Planning. This is a method for identifying potential future issues that need to be addressed by workforce planners. It allows them to assess the impact of workforce policy options and minimise risk. This approach is new for health and social care workforce planning in England. We first think about what health and social care may look like in the future, including the workforce needed to provide it. We then focus on policies to deliver the required workforce, and test them across a range of futures defined by a set of scenarios. This allows robust decisions to be made that recognise the uncertainty of the future.

Central to the approach are the high degree of stakeholder participation and the use of system dynamics models that calculate workforce supply and demand. Stakeholders are involved in exploring future drivers and trends, scenario workshops, and a Delphi process to quantify the key uncertainties for modelling. The use of system dynamics meant that robust, evidence-based supply and demand models could be created to test potential policies and their impact. It also meant that the model was ‘transparent’ and enabled expertise of several hundred stakeholders from the health care system to be synthesised.

Significant decisions were made as a result of this work, including:
A 2% reduction in medical school intakes to be introduced with the 2013 intake, with a further review in 2014

No immediate change to dental school intakes because of issues over data quality highlighted by the modelling, with another review in 2013

A rolling cycle of reviews of medical and dental student intakes should be established; to be undertaken every three years.

The actions taken demonstrate the value of this approach in understanding the impact of potential policy decisions across a range of challenging but still plausible futures. The method is not limited to healthcare, and we are currently exploring its use in other workforce areas, and to help in wider strategic decision making.
APPENDIX G: United Kingdom Poster Abstracts

Nursing Care That is Left Undone
Authors:
J. Ball, P. Griffiths, T. Murrells, A. Rafferty,

Background:
An association between nurse staffing levels and patient outcomes has been established (1, 2). Recent research from the USA suggests that lower staffing levels result in more care being left undone and that this affects patient outcomes (3). A large-scale survey of nurses in England allowed this relationship to be explored further.

Aims:
How commonly is nursing care left undone?
What type of care is most likely to be undone due to time pressures?
How much variation in missed care is there between and within hospitals?
What is the relationship between nurse staffing levels and skill-mix and missed care?

Methods:
A cross-sectional survey of registered nurses working on medical and surgical wards was undertaken January-September 2010. The survey covered 31 NHS general acute hospital Trusts in England (64 were invited), including 46 hospitals and 401 wards. The sample was stratified by size, teaching status and region. 2990 responses were received, representing a response rate of 39%.

Results:
The majority of nurses reported leaving some care that was needed undone on their most recent shift. During the daytime, communication with patients/families, care planning, documenting nursing care and providing adequate patient surveillance were the most frequently left undone due to time pressures. Missed care was more likely to vary between wards within hospitals than between hospitals and a relationship with adequacy of resources and staffing was identified.

Discussion:
Examination of care that is left undone provides an insight into the association between poor staffing levels and the quality of care provided, and on patient outcomes.

Conclusion:
Lower staffing levels contribute to care not being delivered.

Contextual information:
The research in England was undertaken as part of a multi-country EU funded study: RN4Cast. The authors acknowledge the role of the RN4Cast consortium in the study design.
**APPENDIX G: United Kingdom Poster Abstracts**

**Big Picture Challenges for Health and Social Care- Implications for Workforce Planning, Education, Training and Development**

Authors: Meena Mahil

**Overview**

The Department of Health (DH) has commissioned the CfWI to identify the big picture challenges facing health, social care and public health to draw out their workforce implications. The aim of this work is to create hard-hitting reports to stimulate thinking in the sector and demonstrate the need for change. The project offers the opportunity to move away from professional silo thinking about workforce planning by looking at these overarching challenges in the context of the whole workforce. The CfWI has engaged with internal and external experts to build the list of big picture challenges that will be included in this project. These experts have provided a range of perspectives to ensure the list of big picture challenges accurately represents the challenges faced by the health, social care and wider support system.

The purpose of the posters is to identify the big picture challenges facing the health and social care system in England and to highlight the implications of these challenges on educating and training the health workforce. There are 5 poster in total.

**Poster 1 – Framing the big picture challenges**

This poster outlines the four challenge categories and the 11 linked challenges. The four categories are: demographic and social, health and social care system design, quality and productivity, and financial and economic. There are individual big picture challenges that sit in each category.

**Poster 2-5 – Linking the challenges to the Education Outcomes Framework (EOF)**

These posters explore the five domains of the EOF and provide information in question-and-answer format drawing out the implications the big picture challenges could have on each domain.
Excellent education
Excellent experience for students, excellent outcomes for patients

Education and training are commissioned and provided to the highest standard, ensuring learners have an excellent experience and that all elements of education and training are delivered in a safe environment for patients, staff and learners.

**Big picture challenges**

<table>
<thead>
<tr>
<th>Category</th>
<th>Challenge</th>
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<tbody>
<tr>
<td>Demographic and social</td>
<td>Planning to meet the needs of an ageing population with an ageing workforce.</td>
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<td>Managing changing demand and resulting from an increasing prevalence of long term conditions and co-morbidities.</td>
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<td>Managing changing public expectations about care they receive</td>
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<tr>
<td>Health and social care system design</td>
<td>Achieving better integration between health, social care and support organisations.</td>
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<td></td>
<td>Shifting the focus of the system towards prevention and well-being.</td>
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<td>Delivering personalisation agenda and providing person-centred care within financial constraints.</td>
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<tr>
<td>Quality and productivity</td>
<td>Ensuring the system delivers high quality services within financial constraints.</td>
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<td>Developing effective measures for quality of care and productivity and ensuring high quality data is collected.</td>
</tr>
<tr>
<td>Financial and economic</td>
<td>Planning service delivery given the uncertainty about level of funding in the future and uncertainty about how investment in health and care will support the UK economy.</td>
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**Not enough community placements**

Foundation for Excellence recommends that all foundation doctors should undertake a community placement.

- 42% of foundation students currently undertake a general practice rotation, mostly in P2.

The Foundation Programme (2011)

**Education costs**

Education has a productivity cost as well as a financial cost...

- 18% productivity loss occurs in teaching hospitals as a result of education-providing activities
- In 2011-12, of the £105bn NHS England expenditure, £5bn was on health education. Health and Social Care Policy (2007)

**Length of training**

**Different measures of quality...**

- give different views
  - 64% of NHS staff who received training learning or development felt that the training helped them to do their job better.
    NHS Staff Survey (2011)
  - Overall score for student satisfaction with medical training in 2012 was 80%.
    GMC National Training Survey (2012)
  - 81% of nursing students rated their course as either good or excellent.
    RCN and Nursing Standard (2011)

**Key questions**

- How can training support care being delivered in the community?
- How do different service models affect productivity and quality?
- How do we manage the drive for continuous improvement?
- How do we measure the quality of education?
- How to incorporate cross-professional working into training programmes?
Competent and capable staff
Enabling staff to meet the needs of patients and service users

There are sufficient numbers of health staff educated and trained, aligned to service and changing care needs, to ensure that people are cared for by staff who are properly inducted, trained and qualified, who have the required knowledge and skills to do the jobs the service needs, whilst working effectively in a team.

Big picture challenges

<table>
<thead>
<tr>
<th>Category</th>
<th>Challenge</th>
<th>By 2030 there will be...</th>
<th>Unless action is taken...</th>
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<tbody>
<tr>
<td>Demographic and social</td>
<td>Planning to meet the needs of an aging population with an aging workforce</td>
<td>81% more obese adults</td>
<td>A 2012 CFWI report found that unless action is taken to alter the current trajectories, there would be by 2020:</td>
</tr>
<tr>
<td>Health and social care system design</td>
<td>Achieving better integration between health, social care and support organisations</td>
<td>47% more adults with diabetes</td>
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<tr>
<td>Quality and productivity</td>
<td>Ensuring the system delivers high quality services within financial constraints</td>
<td>72% more over 65s with dementia</td>
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<tr>
<td>Financial and economic</td>
<td>Planning service delivery given the uncertainty about level of funding in the future and how this will affect future demand for and supply of care services</td>
<td>Universities UK (2013) 62% of the public surveyed believe that health and social care workers need to improve their understanding of dementia.</td>
<td></td>
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</table>

Universities UK (2013)
62% of the public surveyed believe that health and social care workers need to improve their understanding of dementia.

Alzheimer’s Society (2013)

Financial and economic
Planning service delivery given the uncertainty about level of funding in the future and how this will affect future demand for and supply of care services.

Universality about how investment in public health, health and care will support the UK economy.

Changing skills mix

Changing skills mix in adult mental health, 2002-12

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<thead>
<tr>
<th></th>
<th>Real term investment at 2011/12 levels</th>
<th>Real term investment at 2011/12 levels</th>
<th>Real term investment at 2011/12 levels</th>
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<tr>
<td></td>
<td>Home treatment</td>
<td>Home treatment</td>
<td>Psychiatric wards</td>
</tr>
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</table>

Department of Health (2013)
The King’s Fund (2011)

Did you know...

- that the average NHS Chief Executive spends only 700 days in post?
- that managers make up 15.4% of the UK workforce, but only 4.6% of the NHS in 2010?
- How do we ensure security of future workforce supply?
- If society is ageing, what skills will the workforce need?
- How do we ensure a good and affordable skills mix?
- How can we ensure effective leadership at all levels of health and social care?
3 Flexible workforce receptive to research
Better-quality services delivered by an innovative workforce

The workforce is educated to be responsive to innovation and new technologies with knowledge about best practice, research and innovation, that promotes the adoption and dissemination of better-quality service delivery to reduce variability and poor performance.

Big picture challenges

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<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic and social</td>
<td>Planning to meet the needs of an ageing population with an ageing workforce is increasingly challenging due to its increasing prevalence of long-term conditions and co-morbidities</td>
</tr>
<tr>
<td>Health and social care system</td>
<td>Achieving better integration between health, social care and support organisations</td>
</tr>
<tr>
<td>Quality and productivity</td>
<td>Ensuring the system delivers high quality services within financial constraints</td>
</tr>
<tr>
<td>Financial and economic</td>
<td>Planning service delivery gives the opportunity to meet and shape future demand for and supply of care services as a result of economic pressure</td>
</tr>
</tbody>
</table>

High impact innovations

Innovation, health and wealth (2013 QNIN payments requirements)
- Rapidly accelerate the use of assistive technologies (e.g. health, telecare) in the NHS
- Widespread implementation of fluid management monitoring technology in the NHS
- A ‘child in a chair in a day’ programme to transform wheelchair services
- NHS organisations exploring opportunities to increase national and international activity
- Reducing inappropriate face-to-face contacts in health and social care, switching to high quality, lower cost alternatives
- Commission dementia services in accordance with NICE-SCIE guidance

Working together

“We will work with ... HEE, NHS Employers and the academic sector to ‘hard wire’ innovation into managerial curricula and CPD”

Increase in older workers

Office of National Statistics (2012)

Innovation and education projects

Breakdown of national health innovation and education projects by theme:
- Multi-professional workforce development
- Integrated care network development
- Self-care development for patients
- Product/technology development

Key questions

- How do we ‘hard wire innovation into managerial and clinical curricula and CPD’ to help create an innovative culture which assists in driving growth?
- How will the ageing workforce affect the adaptability and flexibility of the formal workforce?
- How can we better understand people’s long-term career plans and objectives?
NHS values and behaviours
Ensuring staff, patients and service users are treated with care

Healthcare staff have the necessary compassion, values and behaviours to provide person-centred care and enhance the quality of the patient experience through education, training, and regular continuing personal and professional development (CPPD), that instils respect for patients.

Big picture challenges

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Demographic and social</td>
<td>Planning to meet the needs of an ageing population with an ageing workforce</td>
</tr>
<tr>
<td></td>
<td>Managing increasing demand resulting from an increasing prevalence of complex long-term conditions and co-morbidities</td>
</tr>
<tr>
<td></td>
<td>Managing changing public expectations about care they receive</td>
</tr>
<tr>
<td>Health and social care system design</td>
<td>Authoring better integration between health, social care and support organisations</td>
</tr>
<tr>
<td></td>
<td>Shifting the focus of the system towards prevention and well-being, including the prevention of disease and promoting person-centred care within financial constraints</td>
</tr>
<tr>
<td>Quality and productivity</td>
<td>Ensuring the delivery of high quality services within financial constraints</td>
</tr>
<tr>
<td></td>
<td>Developing effective measures for quality of care and productivity and ensuring high quality care is available</td>
</tr>
<tr>
<td>Financial and economic</td>
<td>Planning services delivery given the uncertainty about levels of funding in the future and how this will affect future demand for and supply of care services</td>
</tr>
<tr>
<td></td>
<td>Uncertainty about how investment in life sciences, health and care will support the UK economy</td>
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</table>

Compassionate care?

15% of poor performing NHS trusts were reported to be non-compliant on the CQC staffing standard (Care Quality Commission, 2012)

Patient experience: NHS staff survey

38% of people surveyed reported that they did not receive any training, learning or development in how to deliver a good patient/service user experience.

Health and wellbeing of staff

Health and wellbeing of staff has been linked to patient satisfaction...

<table>
<thead>
<tr>
<th>Health and wellbeing status</th>
<th>Expected patient satisfaction (score out of 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>74.0</td>
</tr>
<tr>
<td>Average</td>
<td>77.5</td>
</tr>
<tr>
<td>Good</td>
<td>80.6</td>
</tr>
</tbody>
</table>

The King's Fund and King's College London (2011)

Key questions

- How can we ensure the workforce possesses the values and behaviours to deliver high-quality care?
- With the shift towards prevention, what is the correct balance of the workforce between treating the population and treating the individual?
- How will 'Any Qualified Provider' impact NHS values?
- How do we support the health and wellbeing of staff so that they are able to deliver high-quality care?
Widening participation
Realising potential through fair opportunities for all

Talent and leadership flourish free from discrimination with fair opportunities to progress, and everyone can participate to fulfil their potential, recognising individual as well as group differences, treating people as individuals, and placing positive value on diversity in the workforce, with opportunities to progress across the five leadership framework domains.

Big picture challenges

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<td></td>
<td>Shifting the focus of the system towards prevention and well-being</td>
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<td>Delivering the person-centred agenda and providing person-centred care within financial constraints</td>
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<tr>
<td>Quality and productivity</td>
<td>Ensuring the system delivers high-quality services within financial constraints</td>
</tr>
<tr>
<td></td>
<td>Developing effective measures for quality of care and productivity and ensuring high-quality data is collected</td>
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<tr>
<td></td>
<td>Improving on changes resulting from innovation and technology</td>
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<td>Financial and economic</td>
<td>Planning service delivery given the uncertainty about level of funding in the future and how this will affect future demand for and supply of care services</td>
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Population becoming more diverse

Ethnicity by age and sex, England 2009

NHS leadership framework

Key questions

- How can we ensure that the workforce as a whole develops effectively?
- How can we encourage people from minority groups to enter the workforce and how do we ensure that everyone is treated fairly with regard to career progression?
APPENDIX H: Overview and Objectives for Plenary #6
From learning to application: ideas & challenges from decision-makers

Purpose:
- Apply your expert knowledge
- Challenges and their key factors
- Find areas for joint action
- Publish the key factors
- Follow-up for ACTION

Challenges:
Participants will be placed into groups of four and each group will be asked to address one of the following challenges:

1) Preparing for changes resulting from innovative workforce practices & technology
2) Achieving the right balance between generalists and specialists
3) Preparing for the impact of globalization on the workforce and the movement of health professions
4) Ensuring high quality service delivery given fiscal constraints

Exercise:
- Each person writes down no more than five key factors relating to the challenge
- Discuss the factors as a group
- Group vote on the top three highest impact & highest uncertainty (write 1, 2 or 3)
- Group agrees one key area for joint action
- Write it down and if you want to be involved, add your name

Report back:
A nominated decision-maker (one from every country) will take the lead in coordinating their group and each lead will take turns reporting back to the rest of the groups:

- Three key factors of high impact, high uncertainty related to their challenge
- One area for action to address the challenge

Decide and reflect
- Publish the factors on the CFWI idea bank at www.horizonscanning.org.uk
- Follow-up plan and presentation at next IHWC Conference
- Reflect on the process and continue collaborations
APPENDIX I: References for PowerPoint Presentations


