



## Health workforce: a case for physician assistants?

Dr Rhonda Jolly  
Social Policy Section

### Executive summary

- Health workforce shortages are a global phenomenon. Dealing with these shortages requires a multi dimensional strategy that some developed countries have recognised may need to include the introduction of new health professionals. These professionals supplement the work of medical practitioners in dealing with changing population health needs.
- One such complementary practitioner, the physician assistant, has made significant contributions to the United States' health system for over forty years. In the United States, physician assistants have proven to be an efficient and cost effective means to deliver health care and demand for their services is growing.
- Other developed and developing nations have either adapted the United States physician assistant model to suit their health system or have shown interest in the model.
- In Australia, debate is still underway concerning the merits of alternative practitioners. Primarily, this debate centres on whether these practitioners constitute a threat to the quality and safety of health care.
- This paper outlines the development of the physician assistant model in the United States, Britain and Canada and considers the possible application of the model to the Australian health system.
- The paper concludes there is potential to adapt this model to suit the Australian health system so that quality of care and safety in the delivery of services is not compromised.

## Contents

Executive summary . . . . .	1
Introduction . . . . .	1
Physician assistants—origins . . . . .	2
Physician assistants in the United States . . . . .	4
Definition, education and practice . . . . .	5
Definition . . . . .	5
Education. . . . .	6
Benefits of physician assistants . . . . .	9
Support and criticism . . . . .	12
The future . . . . .	13
Transferring the physician assistant concept into other health systems. . . . .	17
Britain . . . . .	18
Workforce shortages . . . . .	18
Physician assistant trial . . . . .	20
Collaboration and recommendation . . . . .	22
National standards . . . . .	23
Criticism . . . . .	24
Future prospects . . . . .	25
Canada . . . . .	26
Australia: a role for physician assistants? . . . . .	29
Support . . . . .	29
Resistance . . . . .	31
The task substitution debate. . . . .	33
The state of play . . . . .	35
Possibilities for Australia based on overseas experience . . . . .	37
Conclusion . . . . .	41
Appendix A: the global applicability of physician assistants. . . . .	42
Appendix B: Physician assistant education programs in selected countries. . . . .	43

## Introduction

According to the World Health Organisation (WHO), a conservative estimate is that there are over 59 million health workers world wide. These workers are spread unevenly between countries and the ratio of health workers to population is greater in developed nations. WHO predicts that there will be a global shortage of more than four million doctors, nurses, midwives and other health workers over the next decade.<sup>1</sup>

In Australia, despite the fact that the health workforce has been growing at nearly double the rate of the Australian population, shortages in a number of workforce areas have been evident for some time. These are particularly obvious in general practice, dentistry, nursing and key allied health areas.<sup>2</sup>

Factors such as a reduction in the average number of hours health professionals choose to work, ageing of the health workforce and the feminisation of some previously male-dominated professions, have contributed to the phenomenon. In some areas, including aged and disability care, demand has also outstripped supply.

In 2005, the Australian Medical Workforce Advisory Committee considered that there would be a shortage of between 800 and 1300 general practitioner graduates by 2013.<sup>3</sup> In a 2006 research report for the Council of Deans of Nursing and Midwifery Australia and New Zealand, Barbara Preston predicted there would also be a shortage of around 470 registered nursing graduates a year by 2010 despite increases in nursing training numbers.<sup>4</sup>

Various attempts have been made to resolve the health workforce shortage problem in Australia. Since the mid 1990s these have included the extensive use of the services of overseas trained doctors and nurses, resulting in what has been criticised as an over reliance on the services of overseas trained doctors.<sup>5</sup> More recently, attempts have included

- 
1. World Health Organisation, *The world health report 2006 – working together for health*, <http://www.who.int/whr/2006/en/index.html>, accessed 13 November 2007.
  2. Productivity Commission, *Australia's health workforce*, December 2005, [http://www.pc.gov.au/data/assets/pdf\\_file/0003/9480/healthworkforce.pdf](http://www.pc.gov.au/data/assets/pdf_file/0003/9480/healthworkforce.pdf), accessed 17 October 2007.
  3. Australian Medical Workforce Advisory Committee, *The general practice workforce in Australia. Supply and requirements to 2013*, 2005, [http://www.health.nsw.gov.au/amwac/pdf/gp\\_2005.pdf](http://www.health.nsw.gov.au/amwac/pdf/gp_2005.pdf), accessed 13 November 2007.
  4. B. Preston, *Nurse workforce futures*, July 2006, [http://dpl/Books/2007/CDNM\\_Nurseworkforcefutures.pdf](http://dpl/Books/2007/CDNM_Nurseworkforcefutures.pdf), accessed 13 November 2007. Note: both Preston's paper and the AMWAC report were written before the Howard Government responded to shortages in these areas.
  5. Department of Immigration and Citizenship figures indicate that in 2005/06 there were approximately 4,500 overseas trained doctors working in Australia on temporary visas.

substantial increases in student numbers for nursing, medicine and some allied health courses.<sup>6</sup>

However, there are structural pressures on demand and supply that increasing student numbers and importing health workers alone are not likely to address. A changing mix of disease burdens, rising expectations of patients, ageing of the population and technological advances, have contributed to shortages and led to a mismatch between workforce demand and supply. As a result, like other developed nations, Australia has begun to examine the possibility of implementing new models of care and workforce practices into health planning 'to accommodate and utilise the wider range of treatment possibilities'.<sup>7</sup>

This paper considers one such model which involves the introduction of a type of medical 'assistant', usually referred to as a physician assistant, who can supplement the services of doctors by undertaking routine and less complex care at both primary and tertiary care levels.<sup>8</sup>

## Physician assistants—origins

Assistants in one form or another have been supplementing the services of doctors at least since the seventeenth century in Europe.<sup>9</sup> One group of assistants, called feldshers, was first introduced into the Russian Army by Peter the Great (1672–1725).

By the early twentieth century feldshers provided much of the medical care received by the rural population in Russia. Russian doctors however, were critical of these assistants who,

---

Department of Immigration and Citizenship, *Population flows. Immigration aspects 2005/06*, Chapter 5, <http://www.immi.gov.au/media/publications/statistics/popflows2005-6/Ch5pt3.pdf>, accessed 15 November 2007.

6. See for example, the announcement to increase medical student numbers by 600 (later 605), nursing students by 1000 and other allied health worker places by 573 made by the Howard Government in July 2006. Media release, 'More doctors, nurses and allied health workers for Australia's health system', 13 July 2006, [http://www.pm.gov.au/media/Release/2006/media\\_Release2018.cfm](http://www.pm.gov.au/media/Release/2006/media_Release2018.cfm), accessed 15 November 2007.
7. Productivity Commission, op. cit.
8. As the first 'modern' physician assistants were employed in the United States, the name of this assistant reflects the medical terminology in that country which refers generally to medical practitioners as physicians. In Australia and New Zealand a physician is a specialist in internal medicine. For this reason, if the physician assistant model is adopted in Australia there may be an argument for these practitioners to be referred to by another title. On the other hand, it can be argued that retaining the title physician assistant will better ensure there is consistent, wider ranging recognition internationally of the responsibilities and duties of this profession.
9. These include the *Officer de sante*, a health worker in France in the 1800s and more recently, a number of variations of the barefoot doctors first used in China in the mid 1960s.

they argued, lacked adequate training and provided inferior medical services. Despite the disdain Russian doctors held for feldshers, the medical profession rejected any proposals to improve their training, fearing that better trained, but cheaper assistants would replace many doctors.<sup>10</sup> By the 1970s, there were over 500 000 feldshers practising in Russia, mostly in isolated areas.<sup>11</sup>

Other medical assistants called loblolly boys were also used in the British and United States navies from the early 1800s as aides to surgeons.<sup>12</sup> Their duties were:

...to do anything and everything that was required – from sweeping and washing the deck and saying 'amen' to the chaplain, down to cleaning the guns and helping the surgeon to make pills and plasters and to mix medicine.<sup>13</sup>

The loblolly boy evolved into the modern navy corpsman (or sick bay attendant).<sup>14</sup>

- 
10. A. Kotok, *The history of homeopathy in the Russian empire until World War 1, as compared with other European countries and the USA: similarities and discrepancies*, 2001, <http://homeoint.org/books4/kotok/3500.htm>, accessed 20 September 2007.
  11. Feldshers also continue to work in Asia where access to doctors and nurses is severely limited. For example, in the central Asian state of Kyrgyzstan, feldshers are an important part of health reform programs to improve access to care for a predominantly rural population. See 'Feldsher training in Kyrgyzstan increases access to quality care and saves lives', February 2006, [http://www.zplus.kz/Success/RTR\\_Feldsher%20Training%20in%20Kyrgyzstan.pdf](http://www.zplus.kz/Success/RTR_Feldsher%20Training%20in%20Kyrgyzstan.pdf), accessed 20 September 2007.
  12. Loblolly was the term for the thick gruel served to sick sailors.
  13. *The Bosun's Chronicle*, Vol. 4, No. 2, February 2004, <http://www.julianstockwin.com/Newsletter/Newsletter%20Feb%202004.txt> and 'History of the navy corpsman', <http://www.jeffreywiener.com/pamphlet.htm>, accessed 21 September 2007.
  14. D. Steinert, 'The WWII Navy corpsman', 2000, <http://home.att.net/~corpsman/>, accessed 21 September 2007.

## One view of the Physician Assistant



Source: BMJ Careers<sup>15</sup>

## Physician assistants in the United States

While military surgeons throughout the world have been using medical assistants since the mid 1800s, civilian physician assistants were only introduced in the United States in the 1960s to provide medical care in places where there were obvious shortages of medical practitioners.

In the 1960s, the American health system not only faced a mal distribution of the medical workforce, it also experienced an actual shortage of medical practitioners. Initially, in order to address this situation, new medical schools were opened and class sizes for medical students were increased, general practice was promoted as a medical specialty and special programs were created to deliver medical services to under serviced areas.<sup>16</sup>

However, medical practitioner shortages were accompanied by rapidly rising medical costs and increased public demands for better access to health services and improved care. So in order to contain costs, the United States Government was forced to consider other workforce

- 
15. V. Katikireddi and S. Rushworth, 'Using physician assistants in the United Kingdom', *BMJ Careers*, 14 February 2004, <http://careerfocus.bmj.com/cgi/content/full/328/7436/69>, accessed 21 September 2007.
  16. R. Hooker and J. Cawley, *Physician Assistants in American Medicine*, Churchill Livingstone, St Louis, 2003, p. 6.

solutions. One of these involved developing and using alternative, cost effective, non physician health workers.<sup>17</sup>

Eugene Stead of Duke University<sup>18</sup> developed one such option for a ‘new’ class of health workers who were eventually labelled physician assistants. Stead at first envisaged that the new health workers would be nurses with expanded clinical skills, but his proposal to develop an advanced nursing program was rejected by the American National League of Nursing.<sup>19</sup>

This rejection led Stead to consider training ex military corpsmen as ‘generalist assistant[s], whose training and skill development were adequate to serve as a platform for further education and further skill development by the physician employer’.<sup>20</sup>

Stead’s first class of three physician assistants graduated in 1965. Soon after, other university medical schools adopted similar programs.

At first, these programs were mostly privately funded, but under legislation such as the Health Manpower Act of 1970, the United States government provided some funding for physician assistant (and nurse practitioner) training to stimulate recruitment of underrepresented minorities and deployment to rural areas. In 2008 this funding was (US) \$2 million.<sup>21</sup>

## Definition, education and practice

### Definition

Physician assistants are generally defined as non autonomous health professionals who are licensed to practice medicine under the supervision of medical practitioners.

The definition given by the American Academy of Physician Assistants is:

Physician assistants are health care professionals licensed, or in the case of those employed by the federal government they are credentialed, to practice medicine with physician supervision. As part of their comprehensive responsibilities, PAs [physician assistants] conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on

- 
17. C. Edwards, ‘A candid look at health manpower problems’, *Journal of Medical Education*, no. 49, 1974, pp. 19–26.
  18. Dr Eugene Stead is credited with founding the modern profession of physician assistants. See biography at Physician Assistant History Centre, <http://www.pahx.org/steadBio.html>, accessed 21 September 2007.
  19. Nurses were uncomfortable with Stead’s proposals because they were based on a medical model of health care delivery, rather than a nursing model. P. Younger, *Physician assistant legal handbook*, Jones and Bartlett, 1997.
  20. Hooker and Cawley, 2003, op. cit., pp. 6–7.
  21. *ibid.*, p. 75.

preventive health care, assist in surgery, and write prescriptions. Within the physician-PA relationship, physician assistants exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services. A PA's practice may also include education, research, and administrative services.<sup>22</sup>

## Education

Physician assistant training is provided through tertiary programs which are accredited to a national American standard.<sup>23</sup> Admission requirements to individual training programs vary, but in many cases there is a pre requisite requirement of two years university study and experience in a health related field.

The physician assistant curriculum<sup>24</sup> 'resembles a shortened form of traditional medical education, and emphasises a primary care, generalist approach'.<sup>25</sup> Unlike undergraduate medicine training however, physician assistant courses are usually only about two years in duration.

In 2008, there are 139 United States education programs for physician assistants accredited or provisionally accredited by the Physician Assistant Education Association. More than 90 of these programs offer the option of a master's degree, while the rest offer either a bachelor's degree or an associate degree. In addition, all programs grant a certificate, which is required to sit for the national certification examination<sup>26</sup>

## Practice

Physician Assistants are required to adhere to a set of professional competencies. These include:

...the effective and appropriate application of medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, systems-based practice, as well as an unwavering commitment to continual

- 
22. American Academy of Physician Assistants, 'Information about PAs and the PA profession', <http://www.aapa.org/geninfo1.html>, accessed 15 November 2007.
  23. This is administered by the Accreditation Review Commission on Education for Physician Assistants, see website at <http://www.arc-pa.org/ProvisionalAccreditation/index.html>, accessed 26 October 2007.
  24. See for example the Master of Physician Assistant program at James Madison University at <http://www.jmu.edu/healthsci/paweb/year1.html>, accessed 26 October 2007.
  25. D. Mittman, J. Cawley and W. Fenn, 'Physician assistants in the United States', <http://www.paworld.net/whatpadoes.htm>, accessed 21 September 2007.
  26. Accreditation Review Commission on the Education of Physician Assistants (ARC-PA), <http://www.arc-pa.org/accessed> 21 February 2008.



learning, professional growth and the physician-PA [physician assistant] team, for the benefit of patients and the larger community being served.<sup>27</sup>

To practice, physician assistants need to be registered in the state in which they wish to work.<sup>28</sup> As noted in the definition of a physician assistant, in compliance with conditions attached to their registration, physician assistants are able to perform, under supervision, many of the tasks previously only the prerogative of doctors.

What constitutes supervision for physician assistants is dependent on the state in which they practice, the settings of their practices and the services they offer.<sup>29</sup> But generally rules for supervision:

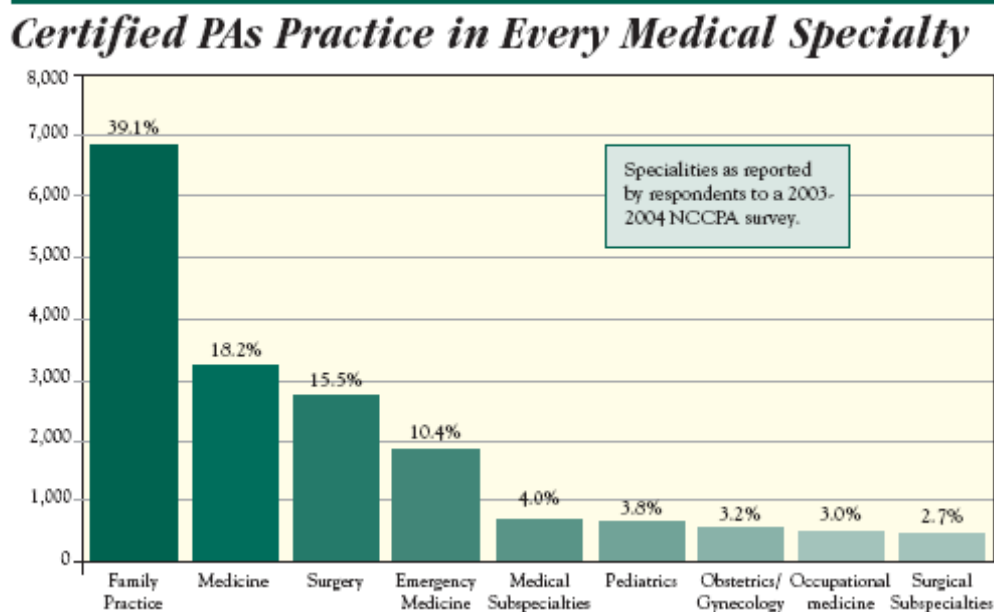
...convey the idea that direction of the medical practice of the physician assistant is provided and assured by supervising physicians, but that this does not necessarily require the physical presence of a supervising physician at the place where services are rendered. It is imperative, however, that the [physician assistant] and a supervising physician are or can be in contact with each other by telecommunication.<sup>30</sup>

In all American states physician assistants have prescribing rights, but these are subject to limitations.<sup>31</sup> For example, in the State of Florida they are prevented from prescribing controlled substances, anti-psychotics, general anaesthetics, radiographic contrast materials, and parenteral injectables except for insulin and epinephrine. Similarly, in general practice, they are able to write prescriptions only for medications within the scope of the practice of their supervising doctors.<sup>32</sup>

- 
27. National Commission on Certification of Physician Assistants, *Physician Assistant Competencies*, no date provided, [http://www.nccpa.net/PAC/Competencies\\_home.aspx](http://www.nccpa.net/PAC/Competencies_home.aspx), accessed 26 October 2007.
  28. See for example conditions of registration for the State of Minnesota at [http://ros.leg.mn/bin/getpub.php?pubtype=STAT\\_CHAP&year=2006&section=147A](http://ros.leg.mn/bin/getpub.php?pubtype=STAT_CHAP&year=2006&section=147A), accessed 10 October 2007.
  29. United States Department of Health and Human Services, 'A comparison of changes in the professional practice of nurse practitioners, physician assistants and nurse midwives: 1992 and 2000', Chapter 5, <http://bhpr.hrsa.gov/healthworkforce/reports/scope/scope3-5.htm#4>, accessed 21 September 2007.
  30. American Academy of Physician Assistants, *Guidelines for state regulation of physician assistants*, 2006, <http://www.aapa.org/manual/06-GuideforStateRegs.pdf>, accessed 26 October 2007.
  31. See chart 'Where physician assistants are authorized to prescribe', at <http://www.aapa.org/gandp/rxchart.html>, accessed 21 September 2007.
  32. See information on prescribing for this state at <http://www.fapaonline.org/faqCategory.asp?cID=5>, accessed 10 October 2007.

As part of their licence conditions registered physician assistants need to undertake 100 hours of continuing medical education (CME) every two years and to sit for recertification every six years.

Physician assistants work across a number of medical practices and locations. As the table below shows these are extensive and include general practice and hospitals, where they specialise in areas including surgery, neurosurgery, orthopaedics, pathology, dermatology, endocrinology, urology, obstetrics-gynaecology, ophthalmology, gastroenterology and rheumatology.



Source: National Commission on Certification of Physician Assistants<sup>33</sup>

In 2007 there were approximately 70 000 physician assistants in the United States and approximately 5500 more physician assistants graduate each year. The United States Department of Labor ranks the occupation of physician assistant as one of the fastest growing in the country.<sup>34</sup>

33. National Commission on Certification, op. cit.

34. United States Department of Labor, Bureau of Labor Statistics, 'Physician Assistants', *Occupational Outlook Handbook*, 2006-07 edition, <http://www.bls.gov/oco/ocos081.htm>, accessed 26 October 2007.

While the first physician assistants were all male, in 2002 the majority of physician assistant students were women.<sup>35</sup> Seventy per cent of applicants for physician assistant programs are white.<sup>36</sup>

### Benefits of physician assistants

Research on physician assistants has been carried out in the United States since the 1970s. Although a considerable amount of this research is dated, its findings are consistently positive about the benefits physician assistants have delivered to the United States health system.

A number of studies have concluded that the quality of care provided by physician assistants is equal to that provided by doctors in comparable situations.<sup>37</sup> One evaluation of over 40 000 patient satisfaction surveys for example showed that patients were equally satisfied with care delivered by doctors, physician assistants and nurse practitioners.<sup>38</sup>

Another study undertaken in April 2007 on behalf of the American Academy of Physician Assistants, noted that over 80 per cent of respondents were happy to consult a physician assistant for a routine health visit if their doctor was not available. Of people previously treated by a physician assistant, 90 per cent were happy to see a physician assistant again.<sup>39</sup> One explanation for this high approval rate is perhaps, as some evidence suggests, that many people prefer the more holistic care delivered by physician assistants.<sup>40</sup>

Some research has indicated that physician assistants and nurse practitioners are more likely than doctors to establish practices in rural locations and in other areas where there is an overall shortage of health professionals.<sup>41</sup> Forty two percent of physician assistants work in

- 
35. College of Nurses Aotearoa, 'Physician assistants', November 2006, <http://www.nurse.org.nz/temporaryFiles/Physician%20Asst%20Review.pdf>, accessed 30 October 2007.
  36. Physician Assistant Education Association, *2007 Health Professions Update*, <http://www.naahp.org/PDFs/HealthProfPDFs/paea.pdf>, accessed 15 November 2007.
  37. Mittman et al, op. cit.
  38. D. Roblin, E. Becker, K. Adams, D. Howard and M. Roberts 'Patient satisfaction with primary care: does type of practitioner matter?' *Med Care* 2004, 42:579–590, cited by Mittman et al., op. cit.
  39. American Academy of Physician Assistants, 'Majority of public say they are willing to be treated by PAs', Academy website, <http://www.aapa.org/majoritysays.html>, accessed 30 October 2007.
  40. R. Hooker, R. Potts and W. Ray, 'Patient satisfaction: Comparing physician assistants, nurse practitioners and physicians', *The Permanente Journal*, Volume 1, Number 1, Summer 1997, <http://xnet.kp.org/permanentejournal/sum97pj/ptsat.html>, accessed 30 October 2007.
  41. K. Grumbach, L. Hart, E. Mertz et al (no further detail cited), 'Who is caring for the underserved? A comparison of primary care physicians and non physician clinicians in California and Washington', *Annals of Family Medicine*, Number 1, 2003 pp. 97–104, quoted

communities with less than 50 000 population and ten per cent of those work in communities with less than 10 000 people.<sup>42</sup>

Any claim that physician assistants are the definitive solution to rural workforce shortages must be tempered, however, by arguments such as those advanced by Dr Robert Bowman, a researcher from the University of Nebraska Medical Center (sic) in the United States. Bowman considers that because United States health policy has failed to recognise the value of the services of physician assistants and nurse practitioners in providing solutions to workforce shortages in rural areas a trend has emerged for these professionals to locate to major medical centres as the centres take advantage of the versatility and cost savings the professions offer.<sup>43</sup>

Economic studies suggest that physician assistants deliver cost effective service. One comparison of the productivity of physician assistants and physicians<sup>44</sup> in a number of medical fields, including general practice, revealed that physician assistants generally saw ten per cent more patients than doctors.<sup>45</sup>

Importantly also, in terms of the delivery of quality services and in the context of a litigious American health system, studies have also found that there appears to be no increased liability cases as a result of using physician assistants in all settings and all types of medical practice.<sup>46</sup> Some anecdotal evidence indicates in fact that physician assistants can reduce the risk of malpractice claims by improving communication between patients and healthcare providers.<sup>47</sup>

---

by R. Hooker, 'Physician assistants and nurse practitioners; the United States experience', the *Medical Journal of Australia*, 185, 1, 2006, [http://www.mja.com.au/public/issues/185\\_01\\_030706/hoo10101\\_fm.html#0\\_i1091967#0\\_i1091967](http://www.mja.com.au/public/issues/185_01_030706/hoo10101_fm.html#0_i1091967#0_i1091967), accessed 25 September 2007.

42. Hooker and Cawley, 2003, op. cit., p. 7.

43. R. Bowman, *Changing primary care contributions, 1970–2015*, research paper at University of Nebraska Medical Centre, [http://www.unmc.edu/Community/ruralmeded/changing\\_pc\\_contributions.htm](http://www.unmc.edu/Community/ruralmeded/changing_pc_contributions.htm), accessed 16 November 2007.

44. Nurse practitioners were also included in this comparison.

45. R. Hooker, 'The roles of physician assistants and nurse practitioners in a managed care organization', quoted in D. Clawson and M. Osterweis (editors), *The roles of physician assistants and nurse practitioners in primary care*, The Association of Academic Health Centers (sic), Washington DC, 1993 pp. 51–68.

46. J. Cawley, F. Rohrs, R. Hooker, 'Physician assistants and malpractice risk: findings from the national practitioner data bank', *Fed Bull.* 85, 1999, pp. 242–246, cited in Mittman et al, op. cit.

47. G. Walker, 'Professional assistance', *Health Executive*, Julian Stevens Communications, 2005, [http://www.healthexecutive.com/features/feb\\_2005/feb05\\_management.asp](http://www.healthexecutive.com/features/feb_2005/feb05_management.asp), accessed 2 November 2007.

Other research has found that physician assistants, in rural and solo practices particularly, increase productivity in terms of the number of patients seen. At the same time, they alleviate the workload and improve the income of doctors that employ them; thereby delivering a safer and more effective health workforce.<sup>48</sup>

Still other studies suggest that where physician assistants see the same types of patients, most of the time, it was more beneficial financially to employ these health professionals than to employ more doctors.<sup>49</sup> This claim must necessarily be qualified by noting that doctors continue to see more difficult, complex and time consuming cases. At the same time, however, the fact that physician assistants are available probably assists doctors to have adequate time to attend to such cases.<sup>50</sup>

Promoting the study of physician assistant courses to Native Americans (American Indians), Alaskan natives and native Hawaiians has been recognised as a potential strategy for delivering benefits to indigenous communities. Like Aboriginal and Torres Strait Islander people, Native Americans make up only a small proportion of the American population.<sup>51</sup> However, also like Aboriginal and Torres Strait Islander people, this group is more likely to suffer from chronic disease and to die younger than its white counterparts.<sup>52</sup> A number of institutions run programs particularly targeted to Native Americans. Study under the Arizona School of Health Sciences Native American Physician Assistant Track program for example leads to the award of a master's degree and involves additional indigenous orientation

- 
48. R. Hooker, 'The economics basis of physician assistant practice', *Physician Assistant*, 24, 2000, pp. 51–71.
  49. Compared with a practice employing a full-time physician, a practice employing a full-time physician assistant had an annual financial differential of \$52 592 (in 1999 US dollars). D. Grzybicki, P. Sullivan, J. Oppy, A. Bethke and S. Raab, 'The economic benefit for family/general medicine practices employing physician assistants', *American Journal of Managed Care*, 8, 2002, pp. 613–620.
  50. R. Hooker, 'The roles of physician assistants and nurse practitioners in a managed care organization', Quoted in D. Clawson, M. Osterweis, (editors), *The roles of physician assistants and nurse practitioners in primary care*,: The Association of Academic Health Centers, (sic) Washington DC, 1993 pp. 51–68.
  51. According to the 2000 United States census, American Indians and Native Alaskans make up a little over 4 million people or 1.5 per cent of the population. S. Ogunwole, *We the people: American Indians and Alaskan Natives in the United States*, Census 2000 special reports, February 2006, <http://www.census.gov/population/www/socdemo/race/censr-28.pdf>, accessed 16 November 2007.
  52. Similarly, health outcomes for African Americans and Hispanic Americans compare unfavourably with those of white Americans. See information at the Office of Minority Health and Health disparities website, <http://www.cdc.gov/omhd/AMH/AMH.htm> accessed 16 November 2007.

components.<sup>53</sup> The University of Washington Medex program actively recruits Alaskan natives working as community health aides to enter the Seattle program and return to their communities.<sup>54</sup>

### Support and criticism

The American Academy of Physician Assistants notes that the American Medical Association, the American College of Surgeons, the American Academy of Family Physicians, the American College of Physicians and other national medical organisations in America support the physician assistant profession by actively supporting a physician assistant certifying commission and an accrediting agency.<sup>55</sup> According to some academics, this support is due to the 'interdependent' relationship physician assistants and doctors enjoy. Within this relationship, doctors and physician assistants are functional teams<sup>56</sup> and physician assistants negotiate what has been labelled 'performance autonomy'.<sup>57</sup> What this means effectively is that physician assistants have a degree of professional independence, within a relationship of trust and mutual respect they share with their supervising doctors.

There is some indication that this was not always the case. Initially, both nurse practitioner and physician assistant models were criticised by the medical profession in America as 'a second tier of medical care'.<sup>58</sup>

It appears doctors were initially reluctant to transfer responsibility to physician assistants, despite the fact that the profession was created partly as a response to the excessive workload doctors faced.<sup>59</sup> One assessment makes the point that state and local medical societies feared the physician assistant concept and hindered development of the profession through their control of state licensing laws.<sup>60</sup>

---

53. See the Arizona School of Health Sciences website for information on this program [http://www.atsu.edu/ashs/programs/physician\\_assistant/napa.htm](http://www.atsu.edu/ashs/programs/physician_assistant/napa.htm), accessed 16 November 2007.

54. Medex 'is committed to educating experienced health personnel from diverse backgrounds to practice medicine with physician supervision'. See information on the program at the University of Washington School of Medicine, Medex website, <http://www.washington.edu/medicine/som/depts/medex/> accessed 16 November 2007.

55. American Academy of Physician Assistants, 'Information about PAs and the PA profession', 16 July 2007, <http://www.aapa.org/geninfo1.html>, accessed 26 October 2007.

56. Hooker and Cawley, 2003, op. cit., p. 8.

57. E. Schneller, *The physician: innovation in the medical division of labor*, Lexington Books, Lexington, 1978, p. 18, quoted by Mittman et al., op. cit.

58. Hooker and Cawley, op. cit., p. 22.

59. R. Mastrangelo, 'The name game', *Physician Assistant*, 2, 1993, quoted in Hooker and Cawley, op. cit., p. 26.

60. T. Keenan, 'Support of nurse practitioners and physician assistants', *To improve health care*, Volume II, Robert Wood Johnson Foundation, 1997,

The nursing profession also criticised physician assistants. Nurses argued that the development of the discipline was an attempt by the American Medical Association to sabotage recognition of nurses as independent and professional associates of doctors.<sup>61</sup>

Further criticism of physician assistants is based on the argument that there is no actual need for any type of alternative medical practitioner within the health systems of developed nations. This argument contends that while such professionals may represent a valuable resource in developing countries where the advanced skills of doctors are not essential (or available) to the delivery of basic health care, in developed countries the same claim cannot be justified. According to this view, alternative practitioners are simply a hasty solution to medical workforce shortages which could be more effectively resolved by other means. In the American case, for example, the argument continues:

... policies in the 1970s were based on an unwillingness to impose social obligations on the physician (e.g., location in areas of need) and to train adequate numbers of primary care doctors.<sup>62</sup>

It could be argued that this approach is condescending in that it assumes the health of people in developing countries is less important than the care of those in developed nations. It is also questionable to what extent so called social obligations could be imposed on medical practitioners in the predominantly private sector driven American health system.

### The future

The existence of a largely privately financed health sector is most likely one important reason why the introduction of a physician assistant profession has been successful in America.<sup>63</sup> This may be because there is an inherent flexibility in the United States' system which marries well with policy devised to deliver quick responses to health demands. In the 1960s, therefore, introducing alternative health practitioners into the system was not only feasible, but considered crucial in supplementing the services provided by medical practitioners and in ensuring the financial well-being of the system.

Commentators on the American health system have argued there was, and continues to be, a need to contain escalating costs associated with public assistance schemes for the poor, elderly and disabled and the treatment of chronic conditions associated with an ageing

---

[http://www.rwjf.org/files/publications/books/1999/chapter\\_11.html](http://www.rwjf.org/files/publications/books/1999/chapter_11.html),  
accessed 1 November 2007.

61. N. Holt, 'Confusion's masterpiece. The development of the physician assistant profession', *Bulletin of the History of Medicine*, 72, 2, 1998, quoted by Hooker and Cawley, 2003, op. cit., p. 26.
62. Hooker and Cawley, 2003, op. cit., p. 22.
63. This comment applies also to nurse practitioners.

population.<sup>64</sup> As the American health system relied on competition as the principal lever to deliver efficiencies, this made the employment of alternative health practitioners, such as physician assistants, an attractive way to deliver more cost-effective services.<sup>65</sup> These less costly services then helped compensate for escalating health costs.

Nevertheless, Professor Roderick Hooker, a long-term researcher and commentator on the physician assistant profession, is convinced that despite the innate flexibility of its health system and the influx of alternative practitioners this has not been enough to satisfy America's medical needs. Professor Hooker believes this situation is likely to worsen as the numbers of American medical graduates remain static.<sup>66</sup> This is likely to be further compounded if a trend for graduating doctors not to select general practice as a career continues and if the number of international medical graduates entering the United States declines.<sup>67</sup>

The situation is compounded by the growth in numbers of older patients and the rise in chronic diseases as well as changes in the work patterns of medical practitioners. In addition,

- 
64. J. Newhouse, 'An iconoclastic view of health cost containment', *Health Affairs*, Vol. 12, (supplement), 1993.
  65. E. Docteur, H. Suppanz and J. Woo, *The US health system: An assessment and prospective directions for reform*, OECD Economics Department Working Papers, No. 350, OECD Publishing, 2003, p. 2.
  66. In 1980, there were 15 681 graduates; in 2003, 15 521 graduates. E. Salsberg, C. Erikson and H. Yamagata, *Medical workforce expansion in the United States – commitment and capacity*, 9th Medical Workforce Collaborative Conference, Melbourne 2005,  
[http://www.healthworkforce.health.nsw.gov.au/amwac/amwac/pdf/9\\_expansion\\_us.pdf](http://www.healthworkforce.health.nsw.gov.au/amwac/amwac/pdf/9_expansion_us.pdf), accessed 26 September 2007.
  67. P. Hilsenrath, K. Lykens and D. Mains, 'Physician supply: an economic and policy perspective'. *Texas Journal of Rural Health*, 21, 3, 1 March 2003, pp. 16–29. J. Showstack, N. Lurie, E. Larson et al (no further details given) 'Primary care: the next renaissance [comment]'. *Annals of Internal Medicine*, 138, 2003, pp. 268–272. L. Sandy and S. Schroeder, 'Primary care in a new era: disillusion and dissolution? [Review]', *Annals of Internal Medicine*, 138, 2003, pp. 262–267. G. Moore and J. Showstack 'Primary care medicine in crisis: toward reconstruction and renewal [comment]', *Annals of Internal Medicine*, 138, 2003, pp. 244–247. H. Sox, 'The future of primary care [comment]', *Annals of Internal Medicine* 138, 2003, pp. 230–232. Referred to by R. Hooker, 'Physician assistants and nurse practitioners: The United States experience', *The Medical Journal of Australia*, 185, 1, 2006,  
[http://www.mja.com.au/public/issues/185\\_01\\_030706/hoo10101\\_fm.html#0\\_i1091989#0\\_i1091989](http://www.mja.com.au/public/issues/185_01_030706/hoo10101_fm.html#0_i1091989#0_i1091989), accessed 26 September 2007.



it is possible, as some researchers predict, that economic expansion will place additional pressure on the American health system.<sup>68</sup>

Hooker concludes that the shortage of physicians will mean that physician assistants and nurse practitioners 'may be the only resource available in the near future'.<sup>69</sup> But it appears even one source of alternative practitioners is in decline, as the numbers of nurse practitioner graduates diminish.<sup>70</sup> In contrast, however, the number of physician assistants is increasing.<sup>71</sup> The (American) Department of Labor agrees that one reason for this growth is an increasing emphasis on cost containment in the health system.<sup>72</sup>

Taking the cost containment premise as a starting point, it may be concluded that physician assistants will continue to play an important role in the delivery of health care in America. Therefore, they will play a substantial role in providing services where the underlying health system ethics are that consumers should have freedom of choice about the value they place on their health and what they are prepared to pay for protection against sickness or accident. In this context, vertically integrated prepaid group practices, such as health maintenance organizations (HMOs), which offer insurance and health care, in seeking to minimise costs to consumers (and at the same time maximise organisational profits), are likely to employ more physician assistants.<sup>73</sup>

Similarly, there may be an increasing potential for the services of physician assistants to be used more often through telemedicine consultations. As telemedicine develops further using post-operative television and vital monitoring protocols, physician assistants could be employed to determine if health care needs to be taken to the level of medical intervention. Employing more physician assistants to undertake these tasks is not only likely to be cost effective, but it may enhance patient care in rural and remote areas by providing services where there may have been none previously.

In addition, as the supply of medical practitioners declines, physician assistants in hospital settings may be able to take on a greater workload in areas such as teaching. They have

- 
68. R. Cooper, T. Getzen and P. Laud, 'Economic expansion is a major determinant of physician supply and utilization', *Health Services Research*, 38, 2003, pp. 675–696 in Hooker, 2006, op. cit.
  69. Hooker, 2006, op. cit. The decline, according to Hooker, was from 8200 in 1998 to 6552 in 2005.
  70. *ibid.* Hooker suggests that the ageing of the nursing workforce and a waning interest in nursing as a career may be responsible for this decline and that it may increase in the future.
  71. *ibid.*
  72. Department of Labor website, op. cit.
  73. R. Hooker, 'A cost analysis of physician assistants in primary care', *Journal of the American Academy of Physician Assistants*, 15, 2002, pp. 39–50

already been called upon to fill gaps in care, which have resulted from an 80-hour week cap placed on the working hours of medical residents introduced in 2003.<sup>74</sup>

There is provision in the American system to cater for the needs of the poor and the elderly through the Medicare and Medicaid programs.<sup>75</sup> But there is considerable criticism of the cost of these programs.<sup>76</sup> As the Medicare rebate for physician assistants is 85 per cent of the prevailing fee paid to doctors (although some clinic visits may be reimbursed fully if certain conditions are met),<sup>77</sup> there is also scope for the greater use of the services of physician assistants as a cost saving measure under these programs.<sup>78</sup>

- 
74. In 2003, the organisation that evaluates and accredits medical residency programs in the United States, the Accreditation Council for Graduate Medical Education, enacted new work limits for residents of no more than 80 hours a week or more than 30 hours straight. J. Cawley and R. Hooker, 'The effect of resident work hour restrictions on physician assistant hospital utilization', *Journal of Physician Assistant Education*, 17, (3), 2006, pp. 41–43.
75. There are two major public programs Medicare and Medicaid. Medicare is a national, federally-administered program that provides services to elderly and disabled persons. Medicare provides cover for doctor and hospital services and is financed by a combination of premiums and general revenues.
- Medicaid provides for low-income groups. Under this program, the federal government provides matching funds to state governments, which operate and administer the program under federal guidelines. Eligibility requirement, benefit levels and provider reimbursements vary greatly from state to state.
76. The Director of the Congressional Budget Office predicted in June 2007 for example that the cost of these programs was expected to rise to about 20 per cent of gross domestic product by 2050, an amount that would be equivalent to the entire United States' Federal Budget in 2007. P. Orszag, 'Health care and the Budget: Issues and challenges for reform', Testimony to the Committee on the Budget, United States Senate, 21 June 2007, <http://www.cbo.gov/ftpdocs/8255/type=0&sequence=0>, accessed 19 November 2007.
77. These are that the doctor must see all new Medicare patients and physician assistants attend to consequent visits, must be on site during visits and that established patients with new medical problems are seen initially by the doctor.
78. P. Knott and D. La Barbera, 'Physician assistants: partners in the practice of medicine', Turner White Communications, 2000 and Hooker and Cawley, 2003, op. cit.

## Transferring the physician assistant concept into other health systems<sup>79</sup>

While the American physician assistant model was developed to serve the needs of a particular system, Christine Legler has argued that it can be easily adopted to accommodate the health needs of other systems.<sup>80</sup>

As the table below illustrates, some nations have begun to embrace the physician assistant model while others, including Australia, are investigating the possibilities whereby it can be adapted to suit local conditions.

**Table 1. Population Statistics and Numbers of Doctors and PAs for Nations Developing PA Programs, 2007<sup>17, 18, 19</sup>**

	Population	# of PAs	Number of doctors	Dr./pop ratio
Australia	20,264,082	2	47,875	2.6/1000
Canada	33,098,932	170	66,583	2.1/1000
United Kingdom	60,609,153	26	133,641	2.3/1000
Netherlands	16,491,461	75	50,854	3.2/1000
Scotland	5,062,011	12	12,738	2.5/1000
South Africa	47,391,900	0	30,740	0.7/1000
Taiwan	23,036,087	1,400	24,418	1.1/1000
United States	301,000,000	65,000	650,000	2.1/1000

Source: *Journal of Physician Assistant Education*<sup>81</sup>

79. Note: While this section refers only to England and Canada, physician assistants have graduated from programs in the Netherlands, South Africa and Taiwan (see Appendices A and B). Note also that I have referred to Britain, rather than England where the trials discussed took place because of the ramifications of the trial for the British health system as a whole and the engagement of national organisations in discussion and critiques of the trial. Trials have since been extended to Scotland (see footnote 97).

80. C. Legler, 'Global applicability of physician assistants', presentation to Association of Physician Assistants Programs, International Affairs Committee, [http://www.globalhealth-ec.org/GHEC/Events/Conf05/conf05\\_ppt/A4\\_Legler.ppt#1](http://www.globalhealth-ec.org/GHEC/Events/Conf05/conf05_ppt/A4_Legler.ppt#1) accessed 9 October 2007.

81. R. Hooker, K. Hogen and E. Leeker, 'The globalization of the physician assistant profession', *Journal of Physician Assistant Education*, 18, 3, 2007, p. 82. Note: There are currently no

## Britain

### Workforce shortages

In 2001, the British National Health Service (NHS), like the United States health system in the 1960s, faced serious health workforce shortages. While the NHS had already begun to train more doctors, it was recognised this strategy needed to be supplemented if a potential workforce crisis were to be averted.<sup>82</sup>

One option was to introduce alternative practitioners, such as physician assistants, into the system. But it was recognised that there were obvious difficulties to be overcome in integrating this group of practitioners into the British health system. These included adapting a dependent practice model into a system where health worker practice was based on a principle of regulation of autonomous practitioners.<sup>83</sup>

Concerns were raised also that because physician assistants delivered the same sorts of medical services as doctors they would not contribute to a reduction in ‘unnecessary duplication of tasks’, nor would they improve the ‘transfer of care between services’<sup>84</sup> in the British system. Similarly, questions were raised about whether substantial training savings could be gained for the NHS. Some academics argued that there would be little significant difference in the cost of training physician assistants and undergraduate doctors for example.<sup>85</sup>

---

physician assistants practising in Australia. The two physician assistants referred to in the table are the academics employed at University of Queensland and James Cook University.

82. Department of Health, *The NHS Plan*, July 2000, [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4002960](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002960), accessed 23 October 2007.
83. L. Hutchinson, T. Marks and M. Pittilo, ‘The physician assistant: Would the US model meet the needs of the NHS’, *British Medical Journal*, 323, November 2001. <http://www.bmj.com/cgi/content/full/323/7323/1244>, accessed 9 October 2007.
84. *ibid.*
85. This appeared to be a particularly spurious claim as there had been no decision made on the length of time British physician assistants would be trained. However, given the American model of approximately two years it seemed unlikely that this would increase to equal or nearly equal the usual five years of undergraduate training undertaken by British doctors. See NHS careers website <http://www.nhs.uk/careers/details/Default.aspx?Id=637>, accessed 29 October 2007.

Additionally, it was argued that antagonism between physician assistants and other professions, particularly nursing, would be inevitable and that this would outweigh any benefits to be gained from the new workforce.<sup>86</sup>

The conclusion, from this perspective, was that:

Other initiatives aimed at reducing professional barriers and mixing skills may be more effective in solving the problems in primary and secondary care [than introducing physician assistants]. It would be a shame to respond to the impending shortfall in medical staff by creating a 'mini medic' and losing the chance to tackle simultaneously the barriers to expanded practice and to seamless care. The best aspects of the US physician assistant system could be incorporated into new initiatives, both locally and nationally, but a comprehensive national programme to train and employ US-style physician assistants may not be the answer.<sup>87</sup>

In reply, a number of critics of this view argued that there was a clear need for a broadly based, new healthcare professional who could contribute to holistic, patient-centred care in both primary and secondary care settings in the British health system. These critics considered that dismissing an American style health professional as inappropriate for Britain failed to appreciate the scale of the problem the NHS faced in providing effective primary medical care.<sup>88</sup> It could be argued equally that it failed to focus on similarities in the situations faced by both health systems and potentially to capitalise on the experience gained in the American case.

The proportion of general practitioners in the British health workforce has been falling for years. In 2002, only around a third of doctors in the NHS were general practitioners and research into medical student work preferences indicated, as Lambert and colleagues had found in the United States' case, this situation was likely to compound into the future.<sup>89</sup> Traditional strategies, such as increasing places at medical school and offering doctors financial incentives, either to enter general practice or delay retirement, many believed were seriously flawed. More radical solutions, like introducing new types of health workers, were

---

86. I. Oransky and J. Varma, 'Nonphysician clinicians and the future of medicine' and R. Cooper, 'The growing independence of nonphysician clinicians in clinical practice', *JAMA*, 1997, cited in Hutchinson et al, op. cit.

87. Hutchinson et al, op. cit.

88. M. Gavin, 'Physician assistants', *British Medical Journal*, 324, March 2002, <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1122653>, accessed 9 October 2007.

89. T. Lambert, M. Goldacre, C. Edwards and J. Parkhouse, 'Career preferences of doctors who qualified in the United Kingdom in 1993 compared with those of doctors qualifying in 1974, 1977, 1980, and 1983', *British Medical Journal*, 313, 1996 cited by Gavin, op. cit.

needed. Moreover, some research had indicated that general practitioners would consider alternative health professionals a welcome addition to health care teams.<sup>90</sup>

### Physician assistant trial

As a consequence of the health workforce crisis, and in response to the commitment by the NHS to modernising the health system to make it more responsive to the expectations and needs of patients,<sup>91</sup> in 2003, two general practices in an under serviced urban area in England employed American trained physician assistants on a trial basis. A further 12 physician assistants were employed in 2004 in primary and secondary care settings.

Results from these trials suggested that any concerns about transferring the physician assistant model were unfounded. While there were some initial difficulties for the American trained physician assistants in familiarising themselves with the British system, the problems did not appear to be insurmountable. On the contrary, it appeared the introduction of physician assistants had had a positive impact on the delivery of better patient-centred health care in the under serviced areas, a key goal of the modernised NHS policy.<sup>92</sup>

In achieving this aim, it was found that the physician assistants reduced the workload of other members of general practice teams in which they worked. Supervisory relationship arrangements worked well and patients appeared satisfied with consulting arrangements. Indeed, the main reported concern of patients was that they were required to wait after a consultation for prescriptions to be written by a doctor, as physician assistants did not have prescribing rights.<sup>93</sup>

There was some variation in cost effectiveness reported from the trials, due to factors such as longer consultation times undertaken by physician assistants in comparison with doctors.

---

90. M. Gavin and A. Esmail 'Solving the recruitment crisis in UK general practice: time to consider physician assistants?', *Social Policy and Administration*, 36, 2002.

91. Department of Health, *The NHS Plan*, July 2000, [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4002960](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002960), accessed 23 October 2007.

92. J. Woodin, H. McCloud, R. McManus and K. Jelphs, *Evaluation of US-trained physician assistants working in the NHS*, Final Report, Health Services Management Centre, University of Birmingham, 2005, <http://www.hsmc.bham.ac.uk/publications/pdf-reports/Physician%20Assistant%20final%20report.pdf>, accessed 23 October 2007.

93. J. Woodin, H. McCloud and R. McManus, *Evaluation of US-trained physician assistants working in the NHS*, Interim Report, Health Services Management Centre, University of Birmingham, 2004, <http://www.hsmc.bham.ac.uk/publications/pdf-reports/Physician%20Assistant%20interim%20report.pdf>, accessed 23 October 2007.

Overall, this was balanced by an increase in the capacity of the areas of medical practitioner shortage to service the needs of their patients.<sup>94</sup>

The physician assistant trial confirmed that some specific integration issues needed to be resolved. Primarily, these related to defining how supervision would apply in a British context, solving the regulatory issue in relation to the type of practice physician assistants could engage in (as noted above) and addressing limitations on prescribing.<sup>95</sup>

Despite the success of the trial, there was continued resistance from one sector of the medical profession on the grounds that physician assistants were a ‘fast-track, cut-price’ alternative solution to medical workforce shortages that would ultimately undermine patient care. This group was adamant that ‘pseudo-doctors’ should not be entitled to diagnose and treat patients.<sup>96</sup> Doctors who had participated in the trial on the other hand argued that physician assistants provided complementary, not replacement medical service.<sup>97</sup>

The British Medical Association’s (BMA) response to the physician assistant trials was restrained. However, it accepted there was potential for physician assistants to ease workload pressure on doctors. At the same time it stressed that patients must be consistently made aware that these practitioners were not doctors.<sup>98</sup>

Furthermore, the BMA voiced a number of concerns about what it saw were possible future impacts on doctors and doctors-in-training. It was concerned that medical students and doctors-in-training would have to compete for the same education and training opportunities as physician assistants; that possible extra training requirements for doctors would add to the

---

94. Woodin et al, Final Report, op. cit.

95. *ibid.* Note the NHS trials referred to were conducted only in England. In October 2006 trials for physician assistants in the NHS in Scotland commenced in two locations. S. Fraser, ‘NHS Lothian to import US physician assistants to tackle health inequalities’, NHS Lothian, 5 October 2006, allmediaScotland.com, [http://www.allmediascotland.com/media\\_releases/1061/05102006/nhs\\_lothian\\_to\\_import\\_us\\_physician\\_assistants\\_to\\_tackle\\_health\\_inequalities](http://www.allmediascotland.com/media_releases/1061/05102006/nhs_lothian_to_import_us_physician_assistants_to_tackle_health_inequalities), accessed 29 October 2007.

96. Dr Laurence Buckman, a member of the British Medical Association General Practice Committee, quoted in J. Henry, ‘Medical degrees lasting two years created to fill shortage of GPs’, Telegraph.com.uk, 31 January 2004, <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2004/02/01/ndoc01.xml&sSheet=/news/2004/02/01/ixhome.php>, accessed 29 October 2007.

97. Dr Ian Walton, Chairman of Tipton Care Association, quoted in Henry, op. cit.

98. Henry, op. cit.

work pressures of medical practitioners and that there was an unstated intention to expand the physician assistant role to the detriment of the medical profession in the future.<sup>99</sup>

### **British Medical Association:**

#### **Summary of concerns about the introduction of physician assistants**

- less training and less accumulated debt as a result of the period required to gain a medical degree may make the career of physician assistant an attractive option to the detriment of medicine
- if physician assistants were similarly qualified to doctors in training, the NHS may increasingly seek to employ them to undertake work traditionally undertaken by doctors in training
- doctor training better prepares practitioners for the unexpected in patient care
- physician assistants may not have sufficient training and breadth of medical knowledge to recognise the limits of their expertise and consequently, they may jeopardise patient safety
- physician assistants may not have the necessary training to apply skills and knowledge in a patient centred way
- any prescribing rights given to physician assistants should be limited and should be subject to clear guidelines.<sup>100</sup>

#### **Collaboration and recommendation**

In September 2006, following a public consultation process, the Royal College of Physicians and the Royal College of General Practitioners, in partnership with the National Practitioner Programme (the Collaborative Group) released a competence and curriculum framework proposal that it intended should apply to physician assistants working in Britain. The Collaborative Group recommended a framework, rather than a set curriculum for physician assistant study. This was intended to provide higher education institutions leeway to design

---

99. British Medical Association, *Competence and curriculum framework for the medical care practitioner*, 10 February 2006, <http://www.bma.org.uk/ap.nsf/Content/mcpconsultation>, accessed 8 November 2007.

100. *ibid.*



programs that took into account local circumstances, while at the same time remaining within national criteria requirements.<sup>101</sup>

While the Collaborative Group acknowledged criticisms of the physician assistant trials, it observed that the development of new medical roles was ‘often contentious, with perceived threats to the training, role and status of existing healthcare professionals, and the need to safeguard standards of patient care’.<sup>102</sup> But it also pointed out that as new professions did develop there was an accompanying need ‘to define the role and scope of practice and the standards for education and assessment in order to ensure that practice is to a uniformly high standard’.<sup>103</sup> This was particularly so given that an increasing number of American-trained physician assistants had found employment in England, Wales and Scotland since 2004.

As some higher education institutes had also begun to develop their own courses for physician assistants in response to employer demands, introducing regulation of training and registration for the profession was equally critical to ensure public safety.<sup>104</sup> In this context, the Collaborative Group expected that its framework would provide guidelines for new physician assistant training programs to produce:

... professionals who have the knowledge, skills and professional behaviours to function as Physician Assistants (and to have their qualification nationally and, potentially, internationally recognised) and the personal and intellectual attributes necessary for lifelong professional development.<sup>105</sup>

#### National standards

The Collaborative Group recommended the introduction across Britain of national training, registration and monitoring standards for physician assistants (see box below). It proposed that physician assistant students would undertake a 90 weeks degree program consisting of both theory and clinical placement components. On completion of this degree, students would then undergo a theoretical and clinical learning assessment which was to be set by a national examination board. In addition to this assessment, however, individual learning institutions would be free to impose further assessment requirements. Core subjects of a physician

---

101. G. Liebich, Physician assistants: Utilisation in the United States and internationally, Centre for Military and Veterans Health, July 2007, [http://espace.library.uq.edu.au/eserv.php?pid=UQ:34532&dsID=n2007\\_PA\\_Conference\\_Report\\_Liebich.pdf](http://espace.library.uq.edu.au/eserv.php?pid=UQ:34532&dsID=n2007_PA_Conference_Report_Liebich.pdf), accessed 29 October 2007.

102. (United Kingdom) Department of Health, National Practitioner Programme, *The competence and curriculum framework for the physician assistant*, September 2006, [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4139317](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4139317), accessed 22 October 2007.

103. *ibid.*

104. *ibid.*

105. *ibid.*

assistant degree, including health policy and ethics, would be validated by a professional body established for that purpose.

Upon graduation, students would undergo a 12 month internship before they would be eligible for registration. They would be required to undertake continuing professional development to retain registration and to sit a re-accreditation examination every five years.<sup>106</sup>

In keeping with the concept of autonomous practice that applies to other health professionals in Britain, each physician assistant would be responsible for his/her own practice and subject to the requirements of a regulatory organisation. However, because of the dependent nature of their practice, supervisory doctors would be required to accept overall professional responsibility and would determine the scope of duties and responsibilities of the physician assistants practising under their supervision.<sup>107</sup> In addressing the apparent anomaly in these latter requirements, the Collaborative Group observed:

Physician Assistants work under the supervision of doctors throughout their professional lives. Although this may appear to contrast with autonomous practice in nursing and other health professions, it should be remembered that all health professions, including doctors, remain professionally and managerially accountable to others throughout their working lives despite being independent, clinically autonomous practitioners.<sup>108</sup>

## Criticism

Criticism of the proposed framework for physician assistants appeared mostly to be motivated by a desire to protect professional 'turfs'. The British Medical Students Association Journal, for example, argued that those who chose to study physician assistant courses would suffer. This was because these students may otherwise have entered medicine and by choosing the physician assistant profession they would be 'condemned' to a career of reduced status, pay and career prospects.<sup>109</sup>

### **British physician assistant: competence and curriculum framework model – definition and role**

#### **Definition:**

A new healthcare professional who, while not a doctor, works to the medical model, with the attitudes, skills and knowledge base to deliver holistic care and treatment within the general medical and/or general practice team under defined levels of supervision.

---

106. *ibid.*

107. *ibid.*

108. *ibid.*

109. N. Malik, 'Physician assistants are a quick fix', *Student British Medical Journal* 12, 2004, <http://student.bmj.com/issues/04/04/letters/171.php>, accessed 8 October 2007.

**The role of the physician assistant is to:**

- Formulate and document a detailed differential diagnosis, having taken a history and completed a physical examination
- develop a comprehensive patient management plan in light of the individual characteristics, background and circumstances of the patient
- maintain and deliver the clinical management of the patient on behalf of the supervising physician while the patient travels through a complete episode of care
- perform diagnostic and therapeutic procedures and prescribe medications (subject to the necessary legislation) and
- request and interpret diagnostic studies and undertake patient education, counselling and health promotion.

Source: (United Kingdom) Department of Health<sup>110</sup>

The Association of Advanced Nursing Practice Educators (AANPE) was one of a number of groups that argued the work of physician assistants was already undertaken by existing professions – in this case by nurse practitioners.<sup>111</sup> The AANPE considered that rather than improving health care, physician assistants could ‘destabilise and undermine the extensive work in progress by other professions in establishing new advanced clinical roles’.<sup>112</sup>

### Future prospects

In the view of Jim Parle, Nick Ross and William Doe, from the University of Birmingham Medical School existing professional roles in Britain served health care delivery well in the past.<sup>113</sup> These academics argue however that the combination of many factors has generated new demands for a more flexible health workforce and that physician assistants can provide

---

110. National Practitioner Program, op. cit.

111. T. Snow, ‘Physician assistant consultation is a whitewash claim senior nurses’, *Nursing Standard*, 20, 46, July 2006, Health Reference Center (sic) Academic, Thomson Gale, [http://find.galegroup.com/itx/infomark.do?&contentSet=IAC-Documents&type=retrieve&tabID=T002&prodId=HRCA&docId=A149364974&source=gale&srcprod=HRCA&userGroupName=aus\\_dev&version=1.0](http://find.galegroup.com/itx/infomark.do?&contentSet=IAC-Documents&type=retrieve&tabID=T002&prodId=HRCA&docId=A149364974&source=gale&srcprod=HRCA&userGroupName=aus_dev&version=1.0), accessed 26 June 2007.

112. Association of Advanced Nursing Practice Educators, *Response to DOH MCP consultation*, 8 May 2007, <http://www.aanpe.org/LinkClick.aspx?fileticket=QwFgw0oSbIc%3d&tabid=1033&mid=1559>, accessed 24 October 2007.

113. As noted earlier in this paper these factors include the ageing of the population and the rise in chronic disease. As in the United States, they also include factors such as restrictions imposed on the hours doctors-in-training are able to work under the European Working Time Directive. See discussion of the directive at (United Kingdom) Department of Health website, [http://www.dh.gov.uk/en/Policyandguidance/Humanresourcesandtraining/Modernisingworkforceplanninghome/Europeanworkingtimedirective/DH\\_077304](http://www.dh.gov.uk/en/Policyandguidance/Humanresourcesandtraining/Modernisingworkforceplanninghome/Europeanworkingtimedirective/DH_077304), accessed 21 November 2007.

one viable solution to these demands.<sup>114</sup> Physician assistants in the view of these academics can deliver significant advantages in areas such as shorter patient waiting times, stability for doctors in rotation posts and the maintenance of generic medical knowledge.<sup>115</sup>

Dr Ricky Bhabutta, who is involved in extension of the British physician assistant project into Scotland,<sup>116</sup> can see a time when physician assistants will be employed, not only in Britain, but throughout Europe.<sup>117</sup> One prediction is that as early as 2010 there will be up to 200 students per annum training across Britain and there will be up to 300 British trained physician assistants in practice.<sup>118</sup>

Physician assistant courses commenced in England for physician assistant postgraduate diplomas in 2004 and the first graduates entered physician assistant roles in 2006. The University of Birmingham offers a course open to graduates with a degree in Life Sciences including biology, biochemistry, medical sciences, nursing and physiotherapy.<sup>119</sup>

## Canada

While physician assistants had been employed by the Canadian Defence Force for over 30 years, it was not until 2005 that a conference was convened to discuss how an expanded role for the profession could assist in addressing the health workforce shortages that were being experienced throughout Canada.<sup>120</sup>

At that time, the defence force employed approximately 130 physician assistants and trained about 20 each year under a program accredited by the Canadian Medical Association.

---

114. J. Parle, N. Ross and W. Doe, 'The medical care practitioner: developing a physician assistant equivalent for the United Kingdom', *Medical Journal of Australia*, 185, 1, 2006, [http://www.mja.com.au/public/issues/185\\_01\\_030706/par10411\\_fm.html](http://www.mja.com.au/public/issues/185_01_030706/par10411_fm.html), accessed 21 November 2007.

115. Parle and Ross presentation summarised in Liebich, op. cit.

116. In 2006, twelve physician assistants were employed on contract for two years in the Scottish NHS in general practice, acute and emergency medicine. J. Buchan, F. O'May and J. Ball, 'New role, new country: Introducing US physician assistants to Scotland', *Human Resources For Health*, 5 (4), 2007, pp. 13–20.

117. Liebich, op. cit.

118. *ibid.*

119. See information at University of Birmingham website, <http://www.medicine.bham.ac.uk/prospective/physicianassistant/>, see also University of Wolverhampton website, <http://www.wlv.ac.uk/Default.aspx?page=13979>, accessed 8 November 2007.

120. R. Sullivan, 'Do physician assistants have a role to play in Canada?', <http://www.valuemd.com/physician-assistant-pa/31965-do-physician-assistants-have-role-play-canada.html>, accessed 24 October 2007.

Trainees accepted into the defence force program were required to have a medical assistant<sup>121</sup> or paramedical<sup>122</sup> background. Defence Force physician assistants received two years training – twelve months theoretical instruction followed by a year of clinical rotations and station based examinations. The clinical rotations were provided in civilian hospitals and general practice.<sup>123</sup>

Although the Canadian Medical Association had approved ‘physician assistant’ as a designated health care profession in 2003, outside the defence forces opportunities for physician assistants to work in Canada were limited.<sup>124</sup> Manitoba was the only province to employ physician assistants, (known in the province as clinical assistants), and this was generally only in medical and surgical specialties.

Participants in the 2005 Canadian conference agreed that there was potential to make greater use of the services physician assistants. This was considered particularly to be the case for ‘remote communities and towns that have one or two physicians and face retention problems because of onerous on-call duties’.<sup>125</sup>

In May 2006, Ontario enacted legislation to introduce a pilot program, which involves physician assistants in its health human resources strategy, HealthForceOntario. After consultation with stakeholders, the selection of six demonstration hospital sites and the development of competency profiles and scope of practice statements, a two year pilot project began in 2008. The project has the intentions of addressing health workforce shortages in high demand areas, such as emergency departments, community health centres, and hospital services and defining what specific roles and responsibilities physician assistants may be able to undertake within the Canadian health system.<sup>126</sup>

---

121. Medical assistants perform administrative and clinical tasks under supervision. Administrative tasks include maintaining medical records and arranging hospital admissions. Clinical tasks can include recording vital signs, collecting and preparing laboratory specimens, drawing blood, preparing patients for x-rays, taking electrocardiograms or removing sutures and changing dressings.

122. Paramedics provide pre-hospital emergency patient care.

123. Canadian Medical Association, ‘Will physician assistants become part of Canada’s health care landscape?’ Canadian Medical Association website, Cma.ca, 19 April, 2005, [http://www.cma.ca/index.cfm/ci\\_id/43633/la\\_id/1.htm](http://www.cma.ca/index.cfm/ci_id/43633/la_id/1.htm), accessed 29 October 2007.

124. One example cited is where physician assistants had been employed was on remote oil rigs where it had proven difficult to recruit other medical professionals.

125. Sullivan, op. cit.

126. HealthForceOntario website, ‘Physician assistants, frequently asked questions’, 5 March 2007, <http://www.healthforceontario.ca/WhatIsHFO/FAQs/PhysicianAssistants.aspx>, accessed 30 October 2007.

The Ontario project has capitalised on the United States and British experience in developing its competency profiles and scope of practice statements.<sup>127</sup> A broad coalition of stakeholders oversees the project and an extensive evaluation project will assess the outcomes of care and satisfaction of all participants (that is, patients, doctors, nurses, and the physician assistants).

HealthForceOntario has also undertaken to introduce a four-month conversion course for overseas trained doctors (OTDs) to train as physician assistants. The rationale behind this initiative has been that there are insufficient medical residency positions available for OTDs in Ontario and that the competencies of these doctors appear to compare to those expected of physician assistants. All OTDs considered for the initiative are expected to have passed medical examinations required of all medical graduates as well as a clinical examination. Successful candidates from this program will commence practice in 2008.<sup>128</sup>

In 2008, three civilian physician assistant programs will be added to the Canadian Defence Force program and a fourth is expected in 2009. Provinces such as Nova Scotia, Alberta and British Columbia are observing the Ontario and Manitoba activity and considering their own options.

Queensland academic Laurent Frossard and his colleagues consider the quick timeframe from conception to trail in Ontario has been due to several factors. These include:

... the development of strong partnerships and collaborative relationships; support from other health professions and experts in the field; high acceptance of overseas trained PAs participating in pilot projects; completion of a PA competencies document; and significant government investment in the PA initiative.<sup>129</sup>

Frossard also makes the pertinent point that the establishment of a Steering Committee to guide development, implementation and evaluation of the Ontario pilot was able to allay concerns expressed by other health professions about the introduction of 'a new and unregulated' health worker.<sup>130</sup>

### **Anticipating need – the case of the Netherlands**

Physician assistants have also been introduced in other countries. In 2004 for example the

---

127. See the Canadian Association of Physician Assistants, *National Occupational Competency Profile* at [http://www.caopa.net/OCP\\_physician\\_assistant.pdf](http://www.caopa.net/OCP_physician_assistant.pdf) and Scope of practice document at [http://www.caopa.net/Scope\\_of\\_Practice.pdf](http://www.caopa.net/Scope_of_Practice.pdf), accessed 21 November 2007.

128. Liebich, op. cit.

129. L. Frossard, G. Liebich, R. Hooker, P. Brooks and L. Robinson, 'Introducing physician assistants into new roles: International experiences', *Medical Journal of Australia*, Volume 188, Number 4, 18 February 2008.

130. *ibid.*

Netherlands inaugurated physician assistant programs at four universities and as a result, in 2008, there are over 200 graduates employed in the Dutch health system. Most of these graduates are working in hospitals, but a few are deployed in general practice.

Interestingly, as one study has observed, while the Netherlands does not have a shortage of doctors at this time, it has elected to introduce physician assistants in anticipation of increasing medical demands it calculates will result from the ageing of its population.<sup>131</sup>

## Australia: a role for physician assistants?

Like its counterparts, Australia faces health workforce shortages. These have become particularly evident in the medical workforce beginning in 1990s. Since that time various attempts have been made to address the shortage of doctors, both in the short and longer terms. Strategies are also in place to attempt to address nursing shortages, although little appears to have been done to address shortages in the allied health workforces, such as physiotherapy and pharmacy.<sup>132</sup>

The 'evident cycles in Australian medical workforce supply policy, with periodic shifts between phases of containment and growth', have intersected with questions about whether a 'numbers policy' alone can resolve either specific medical, or general health workforce supply issues, however.<sup>133</sup> As a result, discussions of how the health workforce crisis in Australia should be addressed have begun to focus on strategies that may be able to supplement plans that simply advocate the supply of more of one kind of health worker or another.

### Support

In 2004, key stakeholders in the health care sector agreed to a National Health Workforce Strategic Framework (NHWSF). One of the principles of the framework was that a complementary realignment of existing health workforce roles, or the creation of new

---

131. Hooker, Hogan and Leeker, op. cit.

132. Australian Health Workforce Advisory Committee, *The Australian allied health workforce. an overview of workforce planning issues*, March 2006, [http://www.health.nsw.gov.au/amwac/ahwac/pdf/allied\\_health.pdf](http://www.health.nsw.gov.au/amwac/ahwac/pdf/allied_health.pdf), accessed 21 November 2007.

133. C. Joyce, J. McNeil and J. Stoelwinder, 'More doctors, but not enough: Australian medical workforce supply 2001–2012', *Medical Journal of Australia*, 184 (9), 1 May 2006, <http://parlinfoweb.parl.net/parlinfo/Repository1/Library/Jrnart/X6IJ60.pdf>, accessed 21 November 2007.

workforce roles, may be necessary to make optimal use of the existing health workforce and to ensure better health outcomes.<sup>134</sup>

In its 2005 inquiry into the health workforce, the Productivity Commission not only endorsed this view but added that there were various opportunities for more significant workforce innovation, including broadening scopes of practice and major job redesign that had either not been adequately evaluated or even considered.<sup>135</sup>

The Productivity Commission in effect endorsed a multi-faceted solution to workforce solutions, recommending the establishment of national registration standards for example to increase the efficiency of the existing health workforce as well as improvements in the coordination of education and training regimes.<sup>136</sup>

Professor Peter Brooks of the University of Queensland is similarly of the opinion that no single strategy will solve the problem of health workforce shortages.<sup>137</sup> Brooks is an advocate of health workforce solutions that are achieved through combining new ways of delivery with new models of practice. He argues that governments, administrations and professions alike must 'consider how the roles of all current health professionals can be extended and how new professionals, such as physician assistants, can be integrated into the health delivery system'.<sup>138</sup>

In 2005 and 2006, two Australian health conferences supported what has been labelled a 'groundswell of feeling' in support of investigating new options for the health system 'to develop partnerships to break down the professional silos, and create a range of new health practitioners who can deliver care in a patient-friendly fashion'.<sup>139</sup> A Medical Delegation Conference in Mt Isa in December 2006 in particular cited physician assistants as a possible and viable option with which to begin this process noting that the health care system 'should

---

134. Australian Health Ministers' Conference, National health workforce strategic framework, April 2004, [http://www.health.nsw.gov.au/amwac/pdf/NHW\\_stratfwork\\_AHMC\\_2004.pdf](http://www.health.nsw.gov.au/amwac/pdf/NHW_stratfwork_AHMC_2004.pdf), accessed 21 November 2007.

135. Productivity Commission, op. cit.

136. *ibid.*

137. P. Brooks, 'Guest view' 6Minutes.com.au, 9 February 2007, [http://www.6minutes.com.au/dirplus/images/6minutes/newsletter/9\\_02\\_2007.pdf](http://www.6minutes.com.au/dirplus/images/6minutes/newsletter/9_02_2007.pdf), accessed 12 November 2007.

138. P. Brooks, 'The health workforce of the future – partnerships in health care', *Australian Health Consumer*, Number 2, 2005–2006, [http://www.chf.org.au/Docs/Downloads/AHC2005-2\\_Brooks.pdf](http://www.chf.org.au/Docs/Downloads/AHC2005-2_Brooks.pdf), accessed 12 November 2007.

139. P. Brooks and N. Ellis, 'Health workforce innovation conference', *Medical Journal of Australia*, 184, 3, [http://www.mja.com.au/public/issues/184\\_03\\_060206/bro11125\\_fm.html](http://www.mja.com.au/public/issues/184_03_060206/bro11125_fm.html), accessed 12 November 2007.



optimally utilise existing health professional groups as well as explore new classes of health professional to best meet the long-term growing needs of the whole community'.<sup>140</sup>

Findings from the Mt Isa Conference stressed, however, that national, flexible models and sets of competencies for physician assistants needed to be developed and put in place before this could occur. In addition, the Conference concluded that any models should reflect the specific needs of the health system and that they should be able to demonstrate that safe and effective care would not be compromised— similar conclusions to those earlier reached in Britain and Canada.<sup>141</sup>

## Resistance

The Australian Medical Association (AMA), like its overseas counterparts, has been restrained in its initial response to the suggestion that alternative practitioners could play a valuable role in the delivery of health care. In its reply to the Productivity Commission report on the health workforce, the AMA criticised recommendations for 'task substitution'. It claimed that proposals made by the Commission would lead to poorer patient outcomes and that the Commission's agenda was based on budgetary considerations. It noted:

Far too often, the AMA has witnessed governments talking about delivering better health outcomes through reform when what they are really on about is limiting access to costly services for budgetary reasons. It would seem that doctors are now seen as so costly that other health providers should screen patients to limit access. The actions governments take speak far louder than the things they say. It is, of course, the fate of governments to grapple with those vexing questions of how much tax to extract and where to spend the revenue. However, if the decision is to lower health outcomes for budgetary reasons, then there must be open and honest engagement with the patients and the electorate. If governments are not prepared to meet patient expectations re quality and access, they should say so clearly.<sup>142</sup>

In effect, it could be argued that the AMA saw the Productivity Commission's recommendations as a threat, rather than an opportunity. One physician argues that behind such claims about the safety of patients perhaps 'lurks the specter (sic) of self interest' whereby:

- 
140. The Mount Isa consensus Statement, 'Towards a Framework for Delegated Medical Practice in the Australian Healthcare System', Mount Isa Medical Delegation Workshop December 13–14 2006, <http://micrrh.jcu.edu.au/conferences-workshops/medical-delegation/Outcomes/mtisa-consensus-statement.pdf>, accessed 13 November 2007.
  141. 'Future health services need new breed of practitioners', *Medical News Today*, 2 January 2007, <http://www.medicalnewstoday.com/articles/59504.php>, accessed 13 November 2007.
  142. Australian Medical Association, Response to the Productivity Commission's position paper on Australia's health workforce, Canberra, November 2005, [http://www.ama.com.au/web.nsf/doc/WEEN-6J8987/\\$file/AMA\\_response\\_to\\_PC\\_position\\_paper\\_final.pdf](http://www.ama.com.au/web.nsf/doc/WEEN-6J8987/$file/AMA_response_to_PC_position_paper_final.pdf), accessed 14 November 2007.

Physicians want to maintain control of care and the financial rewards that come with it. They don't want to be undercut in the market by less costly providers.<sup>143</sup>

Another commentator is less critical, believing that such concern, couched in terms of safety and quality, may actually be more about the break down of 'the exclusivity of medical knowledge and skills', rather than simply about control or financial considerations.<sup>144</sup>

Objections to the idea of the introduction of physician assistants have also been voiced by the Australian Medical Students Association (AMSA). AMSA considers the introduction of what it labels 'a hybrid medical practitioner' will threaten the quality of patient care and jeopardise clinical training places for medical students. Echoing the concerns raised by the British Medical Association it argues:

Doctors occupy a unique and important role in the Australian healthcare system, however this role is coming under increasing threat by the prospect of task substitution... AMSA believes that Physician Assistants (PA) are an inappropriate measure to address current workforce shortages in the Australian healthcare system. AMSA believes that their training will undermine and diminish the available resources for medical students and junior doctors. Reducing training opportunities may have a negative impact on the level of clinical experience for Australia's future medical workforce and hence compromise patient safety.<sup>145</sup>

In addition, AMSA does not see physician assistants as a long-term solution to medical workforce shortages and argues resources for the training of physician assistants would be better invested in medical education and greater administrative support.<sup>146</sup>

Some sectors of the nursing profession may similarly resist any move to introduce physician assistants. In its response to the Productivity Commission inquiry the Australian Nursing Federation noted its disappointment with suggestions that a 'doctor-nurse hybrid' could be introduced in Australia, but it has not as yet made any substantial objections.<sup>147</sup> These may

---

143. Professor R. Cooper, Professor of Medicine and Health Policy, Medical College of Wisconsin, quoted in C. Geron, 'Medicine's turf wars', *US News and World Report*, Volume 138, Number 4, 31 January 2005.

144. N. Ellis, L. Robinson and P. Brooks, 'Task substitution: Where to from here?', *Medical Journal of Australia*, Vol. 185, No. 1, 2006, p. 18.

145. 'Task substitution threatens patient safety and student training. AMSA responds to UQ plans to introduce physicians assistant course', University of Queensland Medical Society, 25 September 2007, <http://uqms.org/content/view/224/>, accessed 12 November 2007.

146. *ibid.*

147. Australian Nursing Federation, Submission to the Productivity Commission on the health workforce, September 2005, [http://www.anf.org.au/anf\\_pdf/anf\\_submissions/Sub\\_Productivity\\_Commission\\_Health\\_Workforce.pdf](http://www.anf.org.au/anf_pdf/anf_submissions/Sub_Productivity_Commission_Health_Workforce.pdf), accessed 22 November 2007.

come, however, from nurse practitioners. Indeed, nurse practitioners may possibly feel threatened by the physician assistant profession because they too have yet to make a significant impression on the Australian health system, with less than 250 registered to practise across Australia in June 2007.<sup>148</sup>

### The task substitution debate

It may be that the future of the physician assistant profession in Australia is dependent on the outcome of the debate about the benefits of so called 'task substitution'.<sup>149</sup> In favour of task substitution it is argued that:

The exclusivity of medical knowledge and skill is being broken down. Interprofessional learning is now commonplace in medical education and seems likely to increase. Professional boundaries are being blurred as more and more things that were once the sole domain of doctors are being undertaken by other health care professionals. None of us works alone any longer, but in multidisciplinary teams in which we depend upon the expertise of others. This is not a diminution of medicine, but a strengthening of health care. We must acknowledge that, more than ever before, knowledge is available to patients and the public.<sup>150</sup>

It is also strongly argued that there is no evidence to suggest that task substitution will compromise health outcomes. Indeed, as has been shown in the American and British cases, there is evidence to suggest the opposite. Supporters of task substitution do not see it as the definitive solution to health workforce shortages but as one of a number of interconnected options. Other solutions include improving health outcomes through more efficient use of technology and by emphasising prevention and health promotion.

In terms of retaining health workers and providing them with graduated career paths, it is argued further that task substitution can have positive repercussions by encouraging a workforce that displays competencies that cross professional boundaries and by providing multiple entry points to health careers.<sup>151</sup>

---

148. According to the Victorian Government, Nursing in Victoria website there were 222 nurse practitioners at that time. See <http://www.health.vic.gov.au/nursing/furthering/practitioner>, accessed 22 November 2007.

149. The Australian Medical Association defines task substitution as 'allocating clinical responsibilities to lesser or more narrowly trained health professionals with or without medical supervision'. C. Yong, 'Task substitution: The view of the Australian Medical Association', *Medical Journal of Australia*, 185, 1, 2006, [http://www.mja.com.au/public/issues/185\\_01\\_030706/yon10552\\_fm.html](http://www.mja.com.au/public/issues/185_01_030706/yon10552_fm.html), accessed 22 November 2007.

150. Sir Graeme Catto, President of the UK General Medical Council, quoted in Ellis et al, op. cit.

151. Ellis et al cite for example the Skills Escalator approach adopted in the NHS. (United Kingdom) Department of Health, *HR in the NHS Plan: more staff working differently*, London,

Another perspective in this debate is that rather than considering task substitution, workforce reforms should be structured around ‘synergising’ the different skills of health professionals, rather than substitution. This approach it is argued would have more ‘capacity to extend medical services with efficiency gains, but without the potential loss of safety or fragmentation of care’.<sup>152</sup>

Encouraging other health professionals to undertake the work of doctors is counterproductive according to this view, as it is likely to increase workforce shortages in other health areas.<sup>153</sup> It is therefore effectively a poor allocation of limited resources because it expects health workers to undertake roles for which they are not adequately trained and in which they are not expert.<sup>154</sup>

### Examples of potential or current ‘task substitution’ in Australian health system:

Task*	Traditional professional	Substitute professional/assistant
Anaesthesia	Anaesthetist	Nurse anaesthetist
Clerking of new hospital patients	Hospital medical officer	Nurse
Closure of wound	Surgeon	Nurse
Foot care	Podiatrist	Foot care assistant
Foot surgery	Orthopaedic surgeon	Podiatric surgeon
Laryngoscopy/Naso-endoscopy	ENT surgeon	Speech pathologist/Nurse
Maternity care	Obstetrician	Midwife or GP
Mobilisation assistance	Physiotherapist	Physiotherapy assistant
Patient management	Medical practitioner	Nurse practitioner
Plain X-ray	Medical imaging technologist	X-ray assistant
Refraction	Optometrist	Orthoptist
Reporting pathology	Pathologist	Scientist
Reporting X-rays	Radiologist	Medical imaging technologist

\* Performance of the substituted tasks will generally require additional training and clear protocols, and will also

---

2002, available at <http://www.dh.gov.uk/assetRoot/04/05/58/66/04055866.pdf>, in Ellis et al, op. cit,

152. Yong, op. cit.

153. K. Lawson, A. Gregory and M. Van Der Weyden, ‘The medical colleges in Australia: Besieged but bearing up’, *Medical Journal of Australia*, 183, 2005, cited in Yong, op. cit.

154. Yong, op. cit.

depend on the complexity of the condition and the comorbidities of the patient

Source: Duckett<sup>155</sup>

Following from this is the claim that task substitution does not fully take account of patient preferences and expectations about care. From this perspective, patients 'will want and expect to see a doctor', not a lesser trained practitioner to ensure they receive the best available care. The view, albeit in relation to a specific instance, can be summarised in the words of Richard Clarke, President of the Australian Society of Anaesthetists:

Enthusiastic amateurs will not be, nor can they be expected to be, as skilled in the rare but crucially important area of patient rescue from either a surgical or an anaesthesia crisis. The question that needs to be answered by the proponents of task substitution in anaesthesia is: Would YOU [emphasis in original] want to have a non-medical anaesthetist or a medical anaesthetist provide anaesthesia care to you, your children or your ageing unwell parent?<sup>156</sup>

### The state of play

The Howard Government (1996–2007) showed little enthusiasm for the Productivity Commission's recommendations concerning the exploration of alternative health workforce solutions. Its primary strategy following from the Commission's recommendations was to increase the numbers of medical and nursing students and in the 2007 election campaign it promised a further increase in student places.<sup>157</sup> The Australian Labor Party similarly promised to increase nursing places.<sup>158</sup> While it did not directly commit to additional strategies apart from increasing places for existing health workers, it has noted that 'the health system of the future needs to focus on providing more health services in the one

---

155. S. Duckett, 'Interventions to facilitate health workforce restructure', *Australian and New Zealand Health Policy*, 2, 14, 2005, <http://www.anzhealthpolicy.com/content/2/1/14>, accessed 21 November 2007.

156. R. Clarke, 'Workforce innovation. Task substitution', Australian Society of Anaesthetists newsletter, November 2007, <http://www.asa.org.au/Page.aspx?A=6976>, accessed 22 November 2007.

157. The Coalition promised to increase the number of general practice training places to 900 training places by 2011, increase specialist training places in private settings to 300 by 2011 and increase nursing places to 10 100 also by 2011. It also committed to introduce 500 new hospital-based nursing training places, commencing in 2008. The Coalition Government, Election 2007 Policy, 'More Australia trained doctors, nurses and specialists', <http://www.liberal.org.au/about/documents/AustralianTrainedDoctors.pdf>, accessed 22 November 2007.

158. Australian Labor Party, '9250 extra nurses to take pressure off Australia's hospitals', Media statement 17 October 2007, <http://www.alp.org.au/media/1007/mseduthealoo170.php>, accessed 28 November 2007.

place'.<sup>159</sup> This may indicate that in Government it may be open to re-consideration of traditional health workforce policies.

To date, Queensland appears to be the only state seriously considering physician assistants as a health workforce option in the near future. In 2005, the Queensland government announced that it was exploring how to use the potential of different health practitioners better.<sup>160</sup> It was also considering how to use the services of new practitioners, including physician assistants, as part of an overall strategy to address health workforce shortages in the state.<sup>161</sup>

In October 2007, Professor Dennis Pashen, Director of the Mt Isa Centre for Rural and Remote Health, reported that a pilot program was about to commence in North West Queensland.<sup>162</sup> A number of other reports have suggested commencement of a physician assistant trial was imminent. However, it appears these announcements may be premature as Queensland Health is in the preliminary assessment phase of the pilot program which is likely to involve employment of a small number of experienced physician assistants from the United States for a period of 12 months to 18 months at a number of pilot sites.<sup>163</sup>

Sites chosen for the Queensland trial will need to demonstrate that as well as clinical need, they have capacity to provide appropriate supervision and workloads commensurate with the education, skills and competency of experienced physician assistants.<sup>164</sup> While no special regulatory processes will accompany the pilot, standards of education and training, proficiency, ethics and conduct will be monitored and physician assistants will be required to hold licences to practice in the United States and to be certified by the United States' National Commission on Certification of Physician Assistants (NCCPA).<sup>165</sup>

According to Queensland Health:

- 
159. Australian Labor Party, *New directions for Australia's health*, August 2007, [http://www.alp.org.au/download/new\\_directions\\_for\\_australias\\_health\\_gp\\_super\\_clinics\\_final.pdf](http://www.alp.org.au/download/new_directions_for_australias_health_gp_super_clinics_final.pdf), accessed 28 November 2007.
  160. For example, paramedic practitioners who are experienced paramedics who have undertaken a three year BSc (Hons) Degree as Emergency Practitioners.
  161. Queensland Government submission to the Productivity Commission study of the health workforce, [http://www.thepremier.qld.gov.au/library/office/submission\\_pc\\_workforce\\_22aug05.doc](http://www.thepremier.qld.gov.au/library/office/submission_pc_workforce_22aug05.doc), accessed 29 October 2007.
  162. Dennis Pashen as quoted in 'Rural doctors to look to physician assistants', 6Minutes.com.au, 29 October 2007, <http://www.6minutes.com.au/articles/z1/view.asp?id=134149>, accessed 22 November 2007.
  163. Queensland Health, Background note, 'Why are we even considering new roles and physician assistants?' December 2007.
  164. *ibid.*, p. 6.
  165. *ibid.*

The pilot will be evaluated to determine whether the role [of physician assistant] would be accepted by the Queensland community and whether, in social and cultural terms, the role 'fits' within the health workforce in Queensland and whether the role may increase the workforce pool by attracting a different cohort into health ...

If it is determined through the pilot that the role has applicability for Queensland, further consideration will need to be given to how the role should be developed and implemented... to ensure that the introduction of trainee Physician Assistants does not impact negatively on the training opportunities for other health professions. The development of training programs would also need to be informed by industry workforce needs and ensure that the qualifications of Australian trained Physician Assistants are recognised internationally.

Perhaps in anticipation of the outcomes of the Queensland trial, the University of Queensland and James Cook University have also formed a consortium to develop a physician assistant program to train Australian students. The first course at the University of Queensland is expected to be a two year post-graduate program. Some discussions have been undertaken with Queensland Health about placements for graduates of the course.

The Australian military has expressed interest in the development of the physician assistant profession also. Professor Niki Ellis, Director of the Centre for Military and Veterans' Health at the University of Queensland, notes this is because of the potential career options the profession may be able to offer existing military medics once they are discharged from the services.<sup>166</sup>

### Possibilities for Australia based on overseas experience

As has been demonstrated in other health systems, one of the advantages in developing the role of physician assistant is the flexibility it can bring to a health system. Physician assistants have been employed in the United States to assist in the delivery of care to rural and remote areas and underserved inner city communities for over four decades. They also assist in the hospital system, particularly in roles similar to those undertaken by junior doctors. Physician assistants are being employed successfully in the Netherlands and it appears that they may also become an integral part of the British and Canadian health systems.<sup>167</sup> In addition, a number of countries employ 'non-physician clinicians'.<sup>168</sup> Countries such as Brazil, Estonia, Thailand and Papua New Guinea are in the process of developing and establishing formal affiliation agreements with the United States for physician assistant rotation trial programs.<sup>169</sup>

---

166 A. Cresswell, 'Second-tier medicos a skills issue', *Australian*, 3 February 2007, <http://www.theaustralian.news.com.au/story/0,20867,21159562-23289,00.html>, accessed 29 October 2007.

167. Physician assistants are also employed in South Africa and Taiwan.

168. F.Mullan and S. Frehywot, 'Non-physician clinicians in 47 sub-Saharan African countries', *The Lancet*, Vol 370, Issue 9605, December 22 2007–January 4, 2008, pp. 2158–63.

169. Frossard et al, op. cit.

There would appear to be potential for physician assistants to undertake similar roles in the Australian health system. For rural and remote communities where it has proven difficult to attract doctors to practice initially and also to retain medical services, physician assistants could make a significant contribution. This could include providing doctors with relief from professional isolation and constant on call duty. It could also possibly involve, if not the elimination, at least a reduction in the need for doctors to obtain the services of locums.<sup>170</sup>

Moreover, the introduction of physician assistants has the potential to address some of the concerns that have been expressed about the lack of consistency in standards under which temporary resident overseas trained doctors (OTDs) practise in rural and remote areas.<sup>171</sup> As one study has pointed out, there is no formal assessment of the level of theoretical and clinical skills of OTDs before they are granted conditional approval to work in designated areas of need. OTDs who apply to work in Australia on a temporary basis only have to satisfy prospective employers that they hold a medical degree and that they have the skills relevant to the task the employer wishes them to fulfil.<sup>172</sup> In contrast, physician assistants would be trained to Australian standards in Australian institutions. They would also be subject to rigorous supervisory conditions and continuing education requirements in order to retain registration based on a nationally approved curriculum, most likely developed in consultation with Australia medical colleges. Importantly, in addition, physician assistants would not be approved to practise independently and their practice would be limited to mirror that of their supervisors.

Significantly, as Teresa O'Connor from the School of Public Health at James Cook University suggests, physician assistants could be employed in rural and remote (as well as urban) Indigenous communities. O'Connor points out that employing Indigenous health workers has already proven successful in these communities. Furthermore, the role of the Indigenous health worker has expanded from that of a basic nursing assistant to encompass a greater role in health education, chronic disease management and some clinical services, such as immunisation.<sup>173</sup> Expanding the skills of Indigenous health workers in this way in

---

170. This is not to imply that physician assistants could practice without supervision in these circumstances. However, remote supervision arrangements could be tailored to accommodate this situation.

171. See for example the concerns raised in the AMA position statement on overseas trained doctors 2004, at <http://www.ama.com.au/web.nsf/doc/WEEN-63AU7B> accessed 14 March 2008.

172. B. Birrell, 'The regulation of medical practice in Australia, Canada, United States and Britain', *People & Place*, Vol 12 No 3, cited in L. Hawthorne, G. Hawthorne and B. Crotty, *The Registration and Training Status of Overseas Trained Doctors in Australia*, University of Melbourne, February 2007, [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/D949ABAA95DCE77FCA2572AD007E1710/\\$File/otdreg.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/D949ABAA95DCE77FCA2572AD007E1710/$File/otdreg.pdf), accessed 21 December 2007. Note: permanent resident overseas trained doctors are subject to more stringent requirements.

173. T. O'Connor, *Physician Assistants for Queensland health*, School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Townsville, July 2005, p.63.



O'Connor's view, 'could address the high turn over of clinical staff in remote health services', such a move could ensure better continuity of care for Indigenous people. It could also increase the participation of these communities in their own health provision.<sup>174</sup>

Physician assistants could also work in both rural and metropolitan hospitals delivering a range of services similar to those they now provide in Canada and the United States. This could help to relieve the workloads of doctors, particularly those of junior doctors, and consequently, contribute to better patient outcomes.<sup>175</sup>

It is debateable whether recent government commitments to increase the numbers of doctors and nurses will adequately improve health workforce supply in Australia. It may be that in the case of doctors, training strategies will only serve to replace those doctors due to retire and compensate for changes in the working practices, such as shorter working hours, of the next generation of doctors.<sup>176</sup> Similarly, the nursing workforce is ageing and it is increasingly being called upon to undertake more complex tasks, often without accompanying recognition of its skills. Attempts to increase the numbers of nurses may not therefore effectively relieve shortages, unless they are accompanied by complementary actions, such as increasing remuneration and improving the status of the nursing profession.

This is not to say that improving the supply of existing practitioners should be discounted as a health workforce strategy. As noted throughout this paper, however, this strategy may be one facet of a multi-dimensional approach to addressing health workforce shortages. Another may be expanding the roles of existing health workers and introducing new types of workers.<sup>177</sup>

There are concerns that quality and safety of care will be compromised by the introduction of new, 'less qualified' health care workers. However, as noted earlier in this paper, the United States and British experience has indicated to the contrary that health outcomes can be improved, both in primary and secondary care, when alternative practitioners **supplement** the work of doctors. Recent trials in Britain also suggest that quality of care for patients has been enhanced and workloads of medical practitioners alleviated as a result of the employment of physician assistants.

---

174. *ibid.*, p. 64.

175. The AMA has campaigned against hospital doctors working onerous hours since the 1990s and has noted that this medical tradition has proven detrimental both to doctors and to their patients. AMA, *Safe Hours=safe patients*, AMA safe hours audit, October 2006, [http://www.ama.com.au/web.nsf/doc/WEEN-6UWAVM/\\$File/Safe\\_Hours\\_Report.pdf?openelement](http://www.ama.com.au/web.nsf/doc/WEEN-6UWAVM/$File/Safe_Hours_Report.pdf?openelement), accessed 28 November 2007.

176. The Australian Medical Workforce Advisory Committee (AMWAC) discusses this issue in AMWAC, *The general practice workforce in Australia. Supply and requirements to 2013*, 2005, [http://www.health.nsw.gov.au/amwac/pdf/gp\\_2005.pdf](http://www.health.nsw.gov.au/amwac/pdf/gp_2005.pdf), accessed 28 November 2007.

177. I have discussed aspects of this argument in R. Jolly, *Practice Nursing in Australia*, Research Paper 10, Parliamentary Library, Canberra, 2007–08.

Evidence that introducing another type of practitioner, whose practice is based on a medical model, into the health system will result in shortages in other health workforce areas appears inconclusive. In the United States, the physician assistant profession is one of the fastest growing professions, and at the same time there has been a consistent decline in medical students choosing general practice for many years. But as this decline predated the introduction of physician assistants, it could be argued that only the existence of the physician assistant (and nurse practitioner) profession has ensured that health services shortages in certain areas are not worse.

That there has been objection raised to the introduction of physician assistants in Australia is not surprising, given this has been common to the experience of other countries. Some in the medical profession see physician assistants as a threat from a number of perspectives. Because physician assistants are trained on a medical care model, there are fears that funding may be diverted away from medical student and doctors in training programs to support physician assistant courses. There is also concern that medical exclusivity will be lost if another profession trained on a medical model is introduced. Or in other words, that the medical profession will be less central to the delivery of health services than in the past and will lose status.

The overseas experience, however, highlights the opportunities that the introduction of a new profession can deliver. One such opportunity could be that the existence of competent nursing and other professionals who are able to deal with routine care will ease the work load on doctors and allow them to use their skills more effectively treating more complex conditions. The existence of physician assistant generalists may also provide general practitioners with more opportunities to ‘subspecialise’ in certain types of care, for example, in sports medicine, palliative care, skin cancer, mental health, sexual health or diabetes care.

This view is supported by Brendan Murphy, Chief Executive Officer of Austin Health and Chair of the Victorian Health Service Management Innovation Council. New health professionals, in Murphy’s opinion, can ‘protect and justify improved income and working conditions for medical staff, as they take on a broader supervisory role’.<sup>178</sup> As Murphy notes, an evolution in medical practice in the public hospital setting has meant that doctors are not motivated to spend their time doing routine clinical work. They seek complex case work, collegiality and continuing medical education and exposure to teaching and research experiences. Role delegation and some ‘substitution’ could help therefore to increase satisfaction for practitioners by allowing them time to undertake these tasks.<sup>179</sup>

Murphy considers that existing and projected vacancies and continued reduction in working hours mean that it is inconceivable that existing doctors will be displaced. He concludes that ‘the best protection for the medical profession is to ensure that the [new, alternative

---

178. B. Murphy, “Medical substitutions and delegations—overcoming the fear”, *Australian Health Review*, Vol. 31, Supplement 1, April 2007, p. S20.

179. *ibid.*, p. S21–22.

practitioner] roles are established in a delegation/partnership manner, with a key requirement for medical practitioner involvement'.<sup>180</sup>

Under such a model, physician assistants in the hospital environment may be able to provide more stability of treatment for patients. They may also provide a counterpoint to the trend towards increasing specialisation by bringing generalist skills and flexibility into hospitals and by fulfilling generalist roles in sub speciality settings.<sup>181</sup>

## Conclusion

As health workforce shortages have become apparent worldwide, the demand for the services of doctors, nurses and allied health workers has escalated. The rise in chronic disease and the ageing of the population ensure that this need will not disappear. But in addition to these trends, more medical specialisation to keep pace with medical advances and improved technologies and changes in work practices have compounded the need for more health workers and more skilled workers.

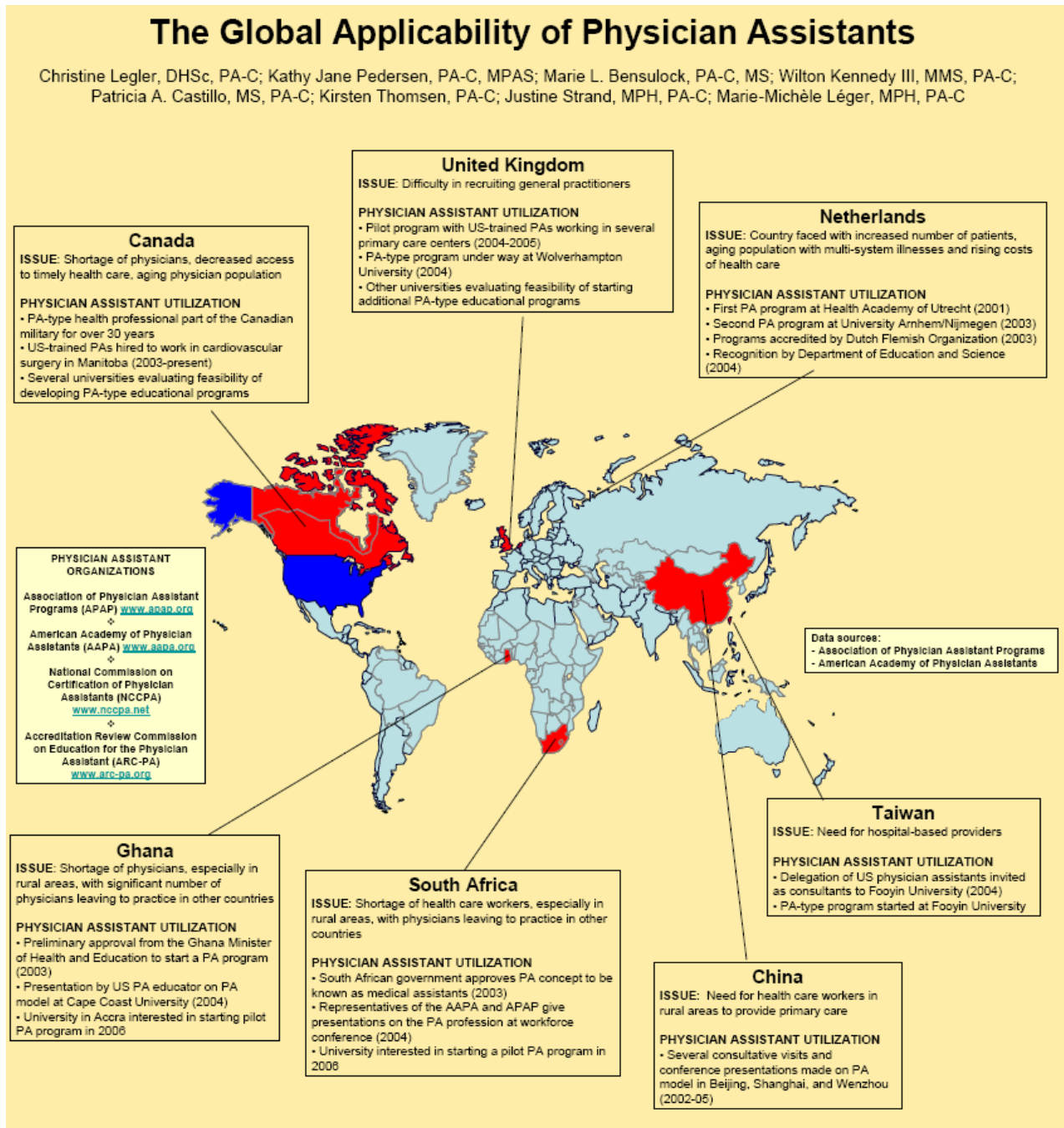
Just as the problems which have contributed to health workforce shortages are complex, so their solutions will need to be multi dimensional. Overseas experience suggests that introducing physician assistants to supplement the work of doctors in a variety of situations as well as complement the skills mix of primary and secondary health care teams provides one dimension of the remedy. Physician assistants have proven both cost effective and efficient in the American health care system for decades. Recent trials in Canada and Britain suggest they will be no less an addition to these health systems; both patients and practitioners have recorded satisfaction with the services delivered by these health professionals. Given that Australia is experiencing similar health workforce shortages and that it is faced with similar health needs as Britain, Canada and the United States, it may be that it will also experience comparable health benefits from the introduction of physician assistants as part of a future multi dimensional health strategy.

---

180. *ibid.*, p. 23–24.

181. Parle et al, *op. cit.*

## Appendix A: the global applicability of physician assistants



Source: <http://www.paeonline.org/iac/Global%20app.pdf>

## Appendix B: Physician assistant education programs in selected countries.

**Table 3. Characteristics of Physician Assistant Education Programs in Selected Countries**

Country	No. of Programs	Year and Location	Length of Program	Didactic	Clinical
Australia	2	2009 University of Queensland	24 mo.	12 mo.	12 mo.
		2009 James Cook University	24 mo.	12 mo.	12 mo.
Canada	4	2002 Canadian Armed Forces	24 mo.	12 mo.	12 mo.
		2007 University of Manitoba in Winnipeg	24 mo.	11 mo.	13 mo.
		2008 McMaster University	24 mo.	12 mo.	12 mo.
		2008 University of Toronto	24 mo.	12 mo.	12 mo.
England (UK)	7	2002 Kingston University (pilot program)	24 mo.		
		2004 St George's, University of London (pilot program)	36 mo.	24 mo.	12 mo.
		2004 University of Wolverhampton	36 mo.	24 mo.	12 mo.
		2005 University of Hertfordshire	36 mo.	24 mo.	12 mo.
		2008 London South Bank University	36 mo.	24 mo.	12 mo.
		2008 University of Surrey	36 mo.	24 mo.	12 mo.
Netherlands	4	2001 Academie Gezondheidszorg in Utrecht	30 mo.	6 mo.	24 mo.
		2003 University of Arnhem/Nijmegen	30 mo.	6 mo.	24 mo.
		2005 University of Groningen	30 mo.	6 mo.	24 mo.
		2005 University of Leiden	30 mo.	6 mo.	24 mo.
Scotland	0	No educational program established		—	—
South Africa	1	University of Witwatersrand	24 mo.	12 mo.	12 mo.
Taiwan	1	2004 Fooyin University	36 mo.	24 mo.	12 mo.

Source: R. Hooker, K. Hogen and E. Leeker, 'The globalization of the physician assistant profession', *Journal of Physician Assistant Education*, Volume 18, No 3, 2007, <http://www.paeaonline.org/perspective/100711.pdf>

Note: The Australian programs will be confirmed only if there is a market for graduates.

© Copyright Commonwealth of Australia

This work is copyright. Except to the extent of uses permitted by the *Copyright Act 1968*, no person may reproduce or transmit any part of this work by any process without the prior written consent of the Parliamentary Librarian. This requirement does not apply to members of the Parliament of Australia acting in the course of their official duties.

This work has been prepared to support the work of the Australian Parliament using information available at the time of production. The views expressed do not reflect an official position of the Parliamentary Library, nor do they constitute professional legal opinion.

Feedback is welcome and may be provided to: [web.library@aph.gov.au](mailto:web.library@aph.gov.au). Any concerns or complaints should be directed to the Parliamentary Librarian. Parliamentary Library staff are available to discuss the contents of publications with Senators and Members and their staff. To access this service, clients may contact the author or the Library's Central Entry Point for referral.

---