



Physician Assistants

The scale of the volume of literature available on Physician Assistants^a means that it is not possible to provide a comprehensive review. Consequently the following is a “snapshot” of the accessible literature, which attempts to capture the main themes. The review starts with a description of the role and training of the Physician Assistant (PA), also known as the Physician Extender, before considering the available information regarding advantages and disadvantages of the role, quality of care provided and a comparison with the role of the Nurse Practitioner (NP). A section on the situation in the UK is also included as they have recently debated the introduction of PAs into the healthcare system and have initiated their introduction in the Midlands and in Scotland. It should be noted that in the literature reviewed there was evidence of some divergence of views, and the advantages promoted by some authors appear as disadvantages when described by others.

Background

The introduction of non-physician providers (NNPs) in the form of Nurse Practitioners and Physician Assistants occurred in the US during the 1960s in response to the physician shortage and a desire to improve care provision. Federal government provided training subsidies and NNPs were expected to “improve access to care in rural and inner-city areas, increase the availability of primary care in all areas, produce a health provider team that would be more cost effective than the solo physician, and improve quality of care by augmenting and enhancing the roles of physicians” (Weiner, Steinwachs & Williamson, 1986, p. 510).

According to American Academy of Physician Assistant statistics (Walker, 2005) PAs have virtually all come from other healthcare roles. Half have a nursing background and the remainder have been emergency medical technicians, medical assistants, physical therapists, occupational therapists, and pharmacists. “PAs generally have three or four years experience before enrolling in a PA curriculum, which takes about two years^b. These programs are offered in medical schools, with PA students and medical students studying together. PAs are accredited by a single national body, with a single standardized exam and recertification every six years. Instead of picking a specialization, PAs are trained across all disciplines” (Walker, 2005). Education is both classroom and laboratory based and covers anatomy, pharmacology, pathophysiology, clinical medicine and physical diagnosis. This is followed by rotations in family and internal medicine, surgery, paediatrics, obstetrics and gynaecology and emergency medicine (Smith, Tevis & Murali, 2005). As an example, the University of North Dakota offers a PA training program described as a clinically oriented, rural emphasis degree in Master of Physician Assistant Studies. The prerequisites for the qualification include being an RN with a minimum of four years experience, having a BN or BS degree – not necessarily in nursing - and a proven record of continuing education in an appropriate field. In addition to passing

^a A search of the PubMed database using Physician Assistant as a keyword produced 3340 references

^b The range is 20 – 36 months with an average of 27 months (Hooker, 2006)



the national certifying examination, which has to be re-sat every 6 years, the graduates are also required to complete 100 hours of continuing medical education every two years (Smith, Tevis & Murali, 2005).

Recent statistics document that:

- there are currently 137 accredited PA training programmes in the US
- in 2005 10,100 students were enrolled and 4,644 PAs graduated
- the number of graduates has increased 9% from 4,261 in 1998
- almost all PA programmes are oriented towards primary care, as PAs were initially intended to be primary care providers. However they have since moved into the institutional area and two programmes emphasise surgery and another has a paediatric focus

(Hooker, 2006)

As noted earlier, while the term Physician Assistant is most common, Physician Extender is also in usage. It has been suggested that Physician Extender may be preferred by physicians as it subsumes the role. A study of case managers with a range of backgrounds, found that the term Physician Enhancer was considered more appropriate as it separates out the role (Netting & Williams, 2006).

With respect to the size of the PA workforce, the 63,000 employed in 2002 is expected to rise by 49% to 94,000 in 2012 according to the US Bureau of Labor Statistics cited by Walker (2005).

While PAs are legally required to practice under supervision, most US states allow them to practise within a 50 mile radius (or one hour drive) of their supervising physician, with the caveat that they remain in telephone contact. Direct contact is a supervisory requirement but the frequency varies from daily in most states to weekly or even monthly in others. Several states require supervising physicians to review only 10-15% of PAs' patient charts (Cooper, 2006).

Advantages

The main advantage of PAs is clearly in relation to the impact they have on the physicians they work with and are supervised by. As they are employed to adopt a part of the physician's workload the result is that physicians are able to work fewer hours (Mittman, Cawley & Fenn, 2002). This has the potential firstly to meet the requirements of hospitals to ensure that staff are limited in the number of hours they work each week, thus providing a safer healthcare workforce. Secondly, they can improve physicians' quality of life both by reducing the hours worked during the day as well as sharing on-call time (Mittman, Cawley & Fenn, 2002). In addition, PAs are colleagues with whom physicians can collaborate in the provision of care (Mittman, Cawley & Fenn, 2002) and to whom less demanding tasks can be delegated thus enabling physicians to concentrate on more complex cases. In more independent situations, PAs are able to run satellite clinics in underserved areas (Mittman, Cawley & Fenn, 2002), thereby improving access to healthcare for those who find it less accessible, for instance in rural locations.



An associated theme in the literature addressed the extent to which PAs can take on the work of physicians. Studies have indicated that primary care PAs can safely assume 83% (60-90% Cooper, 2006) of all outpatient visits without supervision and can substitute for around 75% of physician services at 44% of the cost. The employment of a PA is said to be economical because the compensation to production ratio is more efficient than that of any other health care provider (Hooker, 2000). A comparison of PAs, NPs and physicians carried out in 1993 concluded that “productivity based on number of patients seen per hour was the same for all three types of provider” (Hooker, 2006). The cost-benefit of employing PAs in the area of family/general medicine was calculated in 2002 and results were favourable with an 86% physician task replacement and a saving of USD52,592 per annum (Grzybicki et al., 2002).

The training of PAs is clearly cheaper than that of physicians as, due to the considerably shorter courses, it costs less than USD50,000 to train each one (Morgan & Strand, 2005). There also appears to be no lack of interest in the role, with at least two applicants for each PA place, compared to 1.3 for medical schools in the US (Morgan & Strand, 2005). The generalist training can also be seen as an advantage as it enables PAs to “remain flexible throughout their careers and readily adapt to changing health care system needs” (Morgan & Strand, 2005).

Disadvantages

While PAs are able to at least partially replace physicians by sharing their workload, they can also add to it by requiring an “inconvenient” amount of supervisory time, especially when they are first employed (Mittman, Cawley & Fenn, 2002). A forum of PAs undertaken by the National Commission on Certification of Physician Assistants, reported that their supervising doctors often lacked time to train them (Nickell, 2006).

It appears that the cost benefit analysis of employing PAs is not totally clear. Although Hooker (2000) concluded that they represented a considerable saving when compared to their physician counterparts, when compared to new medical graduates, employment costs can be higher with PAs and NPS being described as demanding higher salaries and benefits (Riportella-Muller, Libby & Kindig, 1995). (See mean salary information on pages 5 and 6).

The literature acknowledges considerable overlap in the roles of PAs, NPs and some health care technicians and “turf battles” can arise between these groups, especially where there is uncertainty about the qualifications and roles of the new health professionals (Riportella-Muller, Libby & Kindig, 1995). It may be that such battles settle down, however, once the new role is better established.

One of the main purposes of introducing PAs into an operational health system is to extend the scope of physician services, particularly into areas where access to health care is limited. However, a disadvantage arises when existing health professionals are attracted to the PA role and leave their current positions, thereby “robbing Peter to



pay Paul” (Gray, 2005). Consequently, the development of a new PA role may not address the professional shortage issue.

Another way to extend the scope of physicians is by establishing new services in less well supplied areas. However Grumbach and Coffman (1998) say that

“advocates for certified nurse-midwives, nurse practitioners, and physician assistants have lobbied for public financing for education in these disciplines on the grounds that these clinicians might compensate for a shortage of primary care physicians in underserved communities. However, many, if not most, NPCs appear to practice in the same socioeconomically advantaged communities that are saturated with physicians”.

Maybe this situation changed quite rapidly, or was not true of all regions. Five years later in 2002, it was suggested that nearly one quarter of PAs and NPs, were working in non-metropolitan areas, many in communities of under 10,000 people (Cawley, 2002). Similarly other studies have reported that by percentage of providers, PAs were more likely to be found in areas with a shortage of health professionals than doctors or NPs (Larson et al., 2003) and in rural areas (Grumbach et al., 2003).

Care quality

A number of comparisons of the standard of care provided by PAs and other healthcare providers have been performed and one such study found PAs and NPs to outscore physicians in the provision of AIDS care. Eight measures were used and results suggested that they equalled physicians on six measures and outperformed them on the other two (Anonymous, 2006a). Another study tested the accuracy and speed of mammogram interpretation by specially trained PAs. Their interpretations were reported to be as accurate, quicker, and cheaper than those of HMO radiologists in the same unit. The same conclusion applied when they were compared to interpretation rates described in the literature (Hillman et al., 1987). A comparison of effectiveness and cost-benefits of PAs and physicians in primary care demonstrated that PAs were equal to physicians in the quality of care provided and were cheaper. The reason for the cost differential was related to diagnosis – for some it was a result of the PA’s lower salary, for others because fewer resources (i.e. imaging, laboratory services, medication, referral and return visits) were used by PAs (Hooker, 2002). A review of 40 studies of quality of patient care by NPs and PAs (Sox, 1979) confirmed them to be performing as well as physicians within their scope of practice.

Comparison with NPs

A few articles have compared the roles of PAs and NPs and the details they provide are summarised on the following page.



	Physician assistants	Nurse Practitioners
Training	Generalist, based on medical training. All learn primary care and rotate through specialty areas (Mittman et al., 2002)	Generalised nurse training is followed by specialty training in one area (Mittman et al., 2002)
Daily roles	Both can diagnose, treat and prescribe (Mittman et al., 2002)	
Professional alignment	Politically aligned with medicine (Mittman et al., 2002)	Politically aligned with nursing (Mittman et al., 2002)
Practice differences	Medical model, focus on disease (Moody, Smith & Glen, 1999)	Nursing paradigm, most interested in health promotion and education (Moody, Smith & Glen, 1999)
Work areas	More involved than NPs in emergency care (Mittman et al., 2002); as house officers in a hospital setting (Mittman et al., 2002); spread between primary and specialist services (Hooker & Berlin, 2002), rural outpatient areas (Mills, McSweeney & Lavin, 1998). About 50% in primary care (Hooker, 2006)	Predominantly in primary care (Hooker & Berlin, 2002) (85%, Hooker, 2006). More likely than PAs to see those receiving counselling and health promotion services and women and children's services (Mills, McSweeney & Lavin, 1998)
Supervision	Dependent on physician supervision in all US states (Hooker & McCaig, 2001). The American Academy of Physician Assistants is committed to retaining an interdependent relationship with physicians (Cooper, 2006).	Have the option of practising independently in some US states (Hooker & McCaig, 2001)
Goals	Dependence and supervision (Cooper, 2006)	Independence and collegiality (Cooper, 2006)
Gender	58% female in US (60% Hooker, 2006)	95% female in the US (90%, Hooker, 2006)
Age	Mean of 41.5 (Hooker, 2006)	Mean of 46 (Hooker, 2006)

Despite the roles of PAs and NPs being somewhat similar^c, it appears that their remuneration differs. In 2006 the mean salary of PAs was \$84,396 (range \$73,100 in public health to \$104,681 for cardiovascular/cardiothoracic surgery; Physician-Assistant Advance, 2006). For NPs a national salary survey in 2005 found the mean to be \$74,812 (Nurse Practitioners Advance, 2005), the previous year it had been \$73,620 (Goolsby, 2004).

^c See Appendix A for interview extracts which contrast the roles.



The UK situation

Following considerable debate about whether the US PA role would be adaptable and beneficial to the UK health system, some regions went ahead. The introduction of PAs into the UK started around 2003 in the West Midlands when a few PAs were recruited from the US (Smith, Tevis & Murali, 2005). In 2005 the Department of Health commissioned the Health Services Management Centre at the University of Birmingham to evaluate the impact of recruiting US-trained PAs (Woodin, McLeod, McManus & Jelphs, 2005). In addition to assessing clinical service activities, the views of doctors, nurses and patients were sought. Results were described as limited but positive, and an examination of the clinical roles of the new PAs found them to be somewhat different from the roles of the existing advanced nurse practitioners (Parle, Ross & Doe, 2006). This year, between ten and twenty individuals were to be recruited from the US to start working in Scotland for a salary of GBP30-40,000 (Anonymous, 2006c). However, twelve were actually recruited as, although 200 were interviewed, most were not from the specialties they required (Anonymous, 2006d). This is interesting in light of the observation by Morgan and Strand (2005) that PAs are trained as generalists and can consequently maintain flexibility.

A recent report in GP summarises the latest developments on the introduction of physician assistants into the UK. While the position was initially introduced under the title of “medical care practitioner” a document concerning the curriculum and competencies of the new role produced by the Royal College of Physicians and the Royal College of General Practitioners, states that it has been changed to physician assistant as is used in the US because general consensus suggested it was a more accurate description of the role. Funding for PA education will come from the multi-professional education and training budget which will put it in competition with nurse training priorities. Additionally the document proposes that PAs will have full prescription rights because independent prescribing is “central to the role and practice of the physician assistant, unlike professions for whom it is a part of the extended role” (Anonymous, 2006b). Currently however, US-trained PAs employed in the UK do not have prescribing rights (Parle, Ross & Doe, 2006). From the current literature it appears that there are fairly strongly opposing views. Some are in favour of establishing PAs and setting up training programmes to “grow” PAs locally in an attempt to address GP shortages. Others are concerned that they will attempt to duplicate the NP role as, according to Maclaine, the NP adviser and course director of the NP degree at London South Bank University, the only difference between the proposed competencies for PAs and NPs is that PAs can provide obstetrics care (Bashford, 2005), but will require medical supervision. If government funding has to be shared between training nurses and PAs there is concern that it should be used to support the development of skilled nurses who can practice independently and complement the services provided by GPs, rather than being given to the medical fraternity to develop medical assistants.



Summary

It would appear that Physician Assistants are well established and are fully accepted as health providers in both primary and secondary care within the US. Evaluations of the quality, cost and accessibility of care they provide are positive. While there is some overlap with the Nurse Practitioner role, there is sufficient evidence to suggest that their medical-based training and required supervision enables them to occupy a different and potentially complementary niche within the healthcare team. Physician Assistants are clearly a cheaper option to most physicians, but are receiving higher salaries than Nurse practitioners and in some cases higher salaries than new medical graduates. The role is gradually being introduced into the UK, with some opposition, and there is also interest from the Australian health system (Brooks & Ellis, 2006).



References

- Anonymous (2006a). NPs and PAs outscore doctors in AIDS care. *The Clinical Advisor*
- Anonymous. (2006b). Independent nurse: Prescribing key for new PA role. *GP* October 27 p4.
- Anonymous (2006c). News in brief - physician assistants. *GP*, August 4, 4.
- Anonymous (2006d). Scotland PA numbers lower than hoped. *GP*, September 15, 5.
- Bashford, S. (2005). Independent Nurse: Professional physician assistants – Physician assistants: opportunity or duplication? *GP*, 26 August. Accessed 5 November, 2006.
- Brooks, P. M., & Ellis, N. (2006). Health Workforce Innovation Conference. *MJA*, 184(3), 105-106.
- Cawley, J. F. (1991). Hospital physician assistants past, present and future. *Hospital Topics*, 69(4), 9
- Cawley, J. F. (2002). The profession in 2002 and beyond. *JAAPA*, 15, 7-15.
- Cooper, R. A (2006). Quality among a diversity of health care providers. *MJA*, 185(1), 2-3.
- Goolsby, M. J. (2004). *National nurse practitioner sample survey comparisons over 15 year period*. American Academy of Nurse Practitioners. <http://www.aanp.org/NR/rdonlyres/ewz24bs6jt72aeldxgvk3woyo4dhasuc5hvwp t65bs2iyej2edd3723ri3ggbwiptvoym2x7o37rwridsnb2tf3gfh/2004NatLNPSampleSurveyWeb.pdf>. Accessed 16 November, 2006.
- Gray, R. (2005). A cut too far? Science graduates to get their hands on scalpels. Scotland on Sunday, 11 December. <http://scotlandonsunday.scotsman.com/index.cfm?id=2385092005>. Accessed 17 November, 2006.
- Grumbach, K., & Coffman, J. (1998). Physicians and nonphysician clinicians: Complements or competitors? *JAMA*, 280(9), 825-826.
- Grumbach, K., Hart, L. G., Mertz, E., Coffman, J., & Palazzo, L. (2003). Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington. *Annals of Family Medicine*, 1, 97-104.



- Grzybicki, D. M., Sullivan, P. J., Oppy, J. M., Bethke, A-M., & Raab, S. S. (2002). The economic benefit for family/general medicine practices employing physician assistants. *The American Journal of Managed Care*, 8(7), 613-620.
- Hillman, B. J., et al. (1987). Mammogram interpretation by physician assistants. *American Journal of Roentgenology*, 149(5), 907-912.
- Hooker, R.S. (2000). The economic basis of physician assistant practice. *Physician Assistant*, 24, 51-66.
- Hooker, R. S., & McCaig, L. F. (2001). Use of physician assistants and nurse practitioners in primary care, 1995-1999. *Health Affairs*, 20(4), 231-238.
- Hooker, R. S. (2002). A cost analysis of physician assistants in primary care. *JAAPA*, 15, 39-50.
- Hooker, R. S., & Berlin, L. E. (2002). Trends in the supply of physician assistants and nurse practitioners in the United States. *Health Affairs*, 21(5), 174-181.
- Hooker, R. S. (2006). Physician assistants and nurse practitioners: The US experience. *MJA*, 185(1), 4-7.
- Larson, E. H., Palazzo, L., Berkowitz, B., Pirani, M. J., & Hart, L. G. (2003). The contribution of nurse practitioner and physician assistants to generalist care in Washington State. *Health Services Research*, 38(4), 1033-1050.
- Mills, A. C., McSweeney, M., & Lavin, M. A. (1998). Characteristics of patient visits to nurse practitioners and physician assistants in hospital outpatient departments. *Journal of Professional Nursing*, 14(6), 335-343.
- Mittman, D. E., Cawley, J. F., & Fenn, W. H. (2002). Physician assistants in the United States. *BMJ*, 325, 485-487.
- Moody, N. B., Smith, P. L., Glen, L. L. (1999). Client characteristics and practice patterns of nurse practitioners and physicians. *Nurse Practitioner*, 24(3), 94-96, 99-100, 102-103.
- Morgan, P., & Strand, J. (2005). What about Physician Assistants? *Health Affairs*, 24(3), 886-887.
- Netting, E. E., & Williams, F. G. (1996). Case-manager physician collaboration: Implications for professional identity, roles and relationships. *Health and Social Work*, 21(3), 216-224.
- Nickell, N. (2006). PAs eye specialty recognition. *Family Practice News*, August 15, p.60.



Nurse Practitioners Advance.

<http://nursepractitioners.advanceweb.com/common/editorial/editorial.aspx?CC=65135>. Accessed 16 November, 2006.

Parle, J. V., Ross, N. M., & Doe, W. F. (2006). The medical care practitioner: Developing a physician assistant equivalent for the United Kingdom. *MJA*, 185(1), 13-17.

Physician-Assistant Advance. <http://physician-assistant.advanceweb.com/> Accessed 16 November, 2006

Riportella-Muller, R., Libby, D., & Kindig, D. (1995). The substitution of physician assistants and nurse practitioners for physician residents in teaching hospitals. *Health Affairs*, 14(2), 181-191.

Smith, J. S., Tevis, B., & Murali, K. (2005). Commentary from the front lines: American physician assistants working in a United Kingdom emergency department. *Emergency Medical Journal*, 22, 322-324.

Sox, H. C. Jr. (1979). Quality of patient care by nurse practitioners and physician's assistants: A ten-year perspective. *Annals of Internal Medicine*, 91, 459-468.

University of North Dakota.

<http://www.und.nodak.edu/dept/registrar/catalogs/catalog/graddept/depts/pa.htm>
. Accessed 16 November, 2006.

Walker, G. (2005). Professional assistance. *Health Executive*, February. Accessed 14 November 2006,
http://www.healthexecutive.com/features/feb_2005/feb05_management.asp

Weiner, J. P., Steinwachs, D. M., & Williamson, J. W. (1986). Nurse practitioner and physician assistant practices in three HMOs: Implications for future US health manpower needs. *American Journal of Public Health*, 76, 507-51.

Woodin J., McLeod, H., McManus, R., & Jelphs, K. (2005). Evaluation of US-trained physician assistants working in the NHS in England. The introduction of US-trained physician assistants to primary care and accident and emergency departments in Sandwell and Birmingham. Final report. Birmingham, UK: University of Birmingham, 2005. Available at:
<http://www.hsmc.bham.ac.uk/publications/pdf-reports/Physician%20Assistant%20final%20report.pdf>

Yong, C-S. (2006). Task substitution: The view of the Australian Medical Association. *MJA*, 185(1), 27-28.



Appendix A

The case manager study referred to earlier (Netting & Williams, 2006) presented extracts from interviews with nurses, social workers and physician assistants concerning their perceptions of their own and others' roles. Clear differences are evident in how these different health professionals are positioned:

Nurse talking about physician assistants

“I see nursing as such a holistic profession involving so many parts that are important to the patient, and I don't know physician's assistants have that sort of preparation. Possibly it is more diagnostic and medically-oriented, and ours is so much more oriented to counselling, education and prevention.”

Physician assistant talking about social workers, nurse practitioners and nurses

“The social worker or the nurse will not be able to do the physical exam. I do this and assessment, follow-ups, and treatment plans. A nurse practitioner does not have the resource information that I have.... I can see myself acting a little bit as a case manager, as a doctor, as caretaker, mother, sister, whatever is needed at the particular time ... We are to be placed underneath the physician, we are entitled to do anything he tells us to, providing he will cosign that. We have to follow the physician's guidelines and protocol, or that can leave us wide open. Nurse practitioners' training is much more focused on one particular practice area; [physician's assistants] are trained much broader.... [Physicians] prefer [physician's assistants] because nurse practitioners are pushing to be independent practitioners, [and] physician's assistants would like to be affiliated with a physician.”