

Evaluation of physician assistants in National Health Service Scotland

J Farmer*, M Currie†, J Hyman‡, C West§ and N Arnott**

*Chair of Rural Health Policy & Management, Centre for Rural Health, UHI Millennium Institute, The Centre for Health Science, Perth Road, Inverness IV2 3JH, UK; †Research Fellow, Centre for Rural Health, UHI Millennium Institute, The Centre for Health Science, Perth Road, Inverness IV2 3JH, UK; ‡Professor Emeritus, University of Aberdeen Business School, Edward Wright Building, Dunbar Street, Aberdeen, UK; §Clinical Services Manager (Primary Care), NHS Highland, Argyll and Bute Community Health Partnership, Oban, UK; **General Practitioner, Tweeddale Medical Practice, Fort William Health Centre, Camaghael, Fort William, UK
E-mail: jane.farmer@uhi.ac.uk

Abstract

Physician assistants (PAs) have medical training and work supervised by a doctor. In 2006–2008 the Scottish Government piloted use of USA-trained PAs. The aim of the paper is to evaluate the impact and contribution made by PAs to delivering effective health care in National Health Service (NHS) Scotland. Mixed methods, longitudinally, including interviews, feedback forms and activity data collection. Data analysis used nVivo, SPSS and Excel. Participants were 15 USA-trained PAs, medical supervisors and team members, 20 patients, four NHS senior managers and three trade union representatives. Settings were four Scottish NHS Boards where PAs worked in primary care, out of hours clinics, emergency medicine, intermediate care and orthopaedics. Two minor patient safety issues arose. Patients were satisfied with PAs. Scope of practice did not replicate US working. Inability to prescribe was a hindrance. PAs tended to have longer consultations, but provided continuity and an educational resource. They were assessed to be mid-level practitioners approximating to nurse practitioner or generalist doctor. Valued features were generalism, medical background, confidence differential diagnosis and communication. Interviewees suggested PAs could fulfil roles currently filled by medical staff, potentially saving resources. In conclusion, there is potential for PAs to fulfil distinctive mid-level roles in the Scottish NHS adding value in continuity, communication and medical approach.

Keywords: physician assistants, mid-level practitioners, new roles, staffing

Introduction

Physician assistants (PAs) have generalist medical education and work under the supervision of a doctor. The profession emerged in the USA in the 1960s to address a shortage of primary care doctors in under-served rural and urban areas. The US PA workforce has since expanded to address shortage of primary care generalists, secondary care 'gaps' caused by legislation curtailing 'resident' doctors' working hours,¹ generalist provision and delegated duties from physicians within Health Maintenance Organizations.² PAs cost less to train, compared with doctors, and will work in unattractive locations.³ Around 75,000 PAs are eligible to practice in the USA⁴ and, as of 2007, PAs have prescribing rights in all American states. PAs are increasingly employed and trained elsewhere, including Australia, Canada, Ghana, Netherlands and South Africa.⁵

Initial PA education incorporates a curriculum similar to that of medical students, but abbreviated and without

long vacations. Most US PA programmes are full-time and average 27 months. In 2008, there were 144 US masters and bachelors PA programmes, some of which are run by university medical schools.

Considerable US, and some English, evidence suggests that PAs are safe (with fewer medical malpractice cases against them than physicians⁶), appreciated by patients for their communication skills,⁷ a cost-effective addition to teams⁸ and capable of performing many routine functions of general medical practice.⁹ Evidence about referral rates is equivocal; PAs tend to be less productive and to see less complex cases,¹⁰ when compared with doctors.

In England, some USA-trained PAs work in the National Health Service (NHS) and four PA education programmes are established.¹¹ PAs were first piloted in England in 2003 in response to difficulties recruiting medical staff to work as general practitioners (GPs) in disadvantaged areas, and in inner-city emergency medicine departments. A *Competence and Curriculum Framework*

for the *Physician Assistant* sets standards for education, training and assessment.¹²

A team of researchers with no prior involvement with the PA initiative, were commissioned to undertake a Scottish pilot to 'evaluate the impact and contribution that could be made by PAs to delivering effective health-care' which ran from 2006 to 2008. Fifteen, who were USA-educated and based, were recruited through open advertisement. These PAs worked, at varying times during this period, in settings of primary care, out of hours clinics, emergency medicine, intermediate care and orthopaedics. The PA pilot was originally conceived in a Scottish NHS apparently threatened by an impending medical staffing crisis. During the pilot period, however, *Modernizing Medical Careers* was introduced, producing the opposite effect of a potential surplus of junior doctors without training places. Simultaneously, NHS Boards continued to introduce a variety of new specialist nursing roles. Here we reveal what happened with PAs in Scotland and consider – what happens next?¹³

Methods

PAs arrived and left during the study period and small numbers worked in different settings, so mixed methods were used to capture complexity. Interviews were held at three stages, including six PA group interviews, 15 individual PA interviews (including 'exit' interviews) and 48 individual interviews with team members (nurses, specialist nurses, paramedics, various doctor grades, supervising doctors, managers). Staff interviews explored safety, scope of practice, team integration and costs. A sample consisting of the first five patients for each of four PAs representing four setting types was interviewed once, to investigate satisfaction (total 20). Four NHS senior managers and three trades union representatives were interviewed once to investigate impact on local working. PAs reported their scope of practice on a form. Work activity data were collected for two, two-week periods using routinely collected data or, where appropriate, by completing individual data sheets. PAs and their supervisors completed monthly forms reporting patient safety incidents, topical issues and supervision time (48% [92/190] completion, with pressures of work cited as the principal constraint against completion). For qualitative data management, nVivo was used. SPSS and Excel were used for quantitative data management and analysis.

Results

Over 24 months, two minor patient safety issues were noted: a mix-up with patient notes and a PA advising a patient to change drug regimen without consulting their supervising GP. All patients interviewed, expressed satisfaction with being seen by a PA, several highlighted PAs' good communication skills.

PAs' scope of practice tended to extend with time; however, most PAs thought they had not reached their USA scope. Current UK legislation prohibits PA

prescribing and this was reported as more of a hindrance in the out of hours clinic and primary care, compared with other settings (where there was more time to find a doctor and/or many doctors working). PAs tended to have longer patient consultations (reported in interviews and described in work activity data), attributed to time spent in discussion. Initial hostility to PAs by team members quickly gave way to expressions of their value to teams. Informative induction and presentations about PAs were crucial to their assimilation. Team members thought PAs provided continuity and acted as an educational resource for staff in training. Most interviewees reported PAs working at a 'mid-level', similar to a nurse practitioner or a doctor in training. Level of working depended on whether there were gaps in the team the PA could fill, the extent to which the PA could extend their practice and PA adaptation to differences between the NHS and US health systems; one PA continued to be deployed in a practice nurse role throughout the study, while others extended into more autonomous medical roles. Team members and supervising doctors consistently highlighted features that distinguished PAs from other team members. Appreciated was PAs' combination of generalist approach, background of medical training, confidence within their scope of practice, capacity for differential diagnosis and strong communication skills. PAs were thought to differ from nurse practitioners in their confidence, flexibility to work in different settings, willingness to think outside protocols and shared culture with medical staff. PAs reported working most effectively and were most satisfied where there was a distinct gap in a team that they could fill; for example, in the out of hours clinic they worked like a supporting GP to a lead GP and, in intermediate care, provided 9–5 generalist medical cover for large geriatric wards. Supervising doctors spent a median of 105 minutes (face-to-face) and median of 6.5 minutes (telephone) per month, on supervising PAs. Trades union representatives did not note any challenging issues. NHS senior managers were favourable about PAs, but thought it was one of a group of new roles that needed to be developed to fulfil the requirements of a changing NHS.

In the last phase of interviewing, we 'forced' interviewees to suggest what role would be most interchangeable with a PA. Crude cost comparisons were calculated using approximate 'take-home' salaries, given at the time of study. Given this, replacement costs would be in a range of £15,000 less (if a practice nurse replaced the PA) to £43,000 more if a trained doctor replaced a PA.

Variations of contribution by setting are shown in Figure 1.

Discussion

Prior to analysing findings, it should be emphasized that the pilot study embraced a number of specific features. The Scottish pilot tested PAs in a range of settings that were unrelated to assessment of strategic workforce need, so gap areas may have been neglected (for example

<p>Out of Hours Clinics (Three PAs worked in Out of Hours: one left after a month)</p> <ul style="list-style-type: none"> • Not prescribing was a hindrance as PA had to wait for GP sign-off • Reported capable of working at the level of a less experienced GP • Culturally attuned compared with international locums • Useful addition if team can operate with a GP and a PA (previously had two GPs) • Nurse and paramedic practitioners could do the same job, but need <i>specific</i> training and experience • May be less directly productive as emphasise element of patient education; this may benefit in the longer-term • No quantitative evidence of over-referral 	<p>Primary Care (Five PAs worked in primary care)</p> <ul style="list-style-type: none"> • Reported capable of working at the level of a GP in training • In one setting the PA was deployed at the level of a practice nurse • Initially, tended to see less complex patients • Some supervisors and team members thought PAs were useful; others would rather have GPs • Inability to prescribe was a hindrance
<p>Emergency Medicine (Four PAs worked in emergency medicine)</p> <ul style="list-style-type: none"> • Reported capable of working at the level of a doctor in training • Provide continuity for rotating medical trainees • Perceived to help meet waiting time targets • Better if they have emergency medicine experience • Comparable productivity to other staff • Perceived as an educational resource • Medical supervision difficult in large or busy departments 	<p>Intermediate Care (Two PAs worked in intermediate care)</p> <ul style="list-style-type: none"> • PAs carved out a distinctive and valued new role • Developed as 'physician extenders' • Reported capable of working at level of a staff grade doctor • Provide continuity for trainee doctors • Confident, flexible and autonomous • Specialist nurses would like to have trained as PAs • Perceived to have a positive impact on patient throughput <p>Orthopaedics (One PA worked in orthopaedics)</p> <ul style="list-style-type: none"> • Reported to work like a 'physician extender' • Exceeded consultant expectations • Reported working almost to level of specialist trainee doctor • An education resource for junior staff • Perceived to have enhanced consultant productivity

Figure 1 Summary of findings for physician assistants in different settings

deployment of PAs in rural areas). PAs could not prescribe and did not think they achieved the extended Scope of Practice that would be allowed in the USA; this affects assessment of effectiveness. The PAs who came to Scotland were experienced, highly qualified and evangelical. Contribution and performance of other, or home-educated PAs, may be different and potentially more restricted. Evaluation was limited by the small number of PAs, their varying lengths of employment and the several setting types included. Though compliance with supervisor/PA feedback forms was restricted (<50%), it fell within an acceptable response range. Quantitative data were necessarily limited and the topic area, exploring individual and team working in diverse settings, is by nature, an inexact science. However, extensive interview

data and several types of data aggregate to provide consistent thematic findings.

PAs were found to be safe and patients were satisfied. Most PAs integrated into teams, particularly where there was a 'gap'. Integration was sometimes dependent on personalities. PAs were reported to provide a distinct set and level of skills and attitudinal approach that was complementary to existing teams. If PAs replaced less experienced doctors, this would save money. PAs' productivity may be affected by time spent communicating with patients and, with current restrictions, seeking signatures for prescriptions.

Findings concur with English evaluation, showing high patient satisfaction, similarity of role with doctors in training and a tendency to longer consultations.¹⁴ PAs appeared to fill a 'mid-level gap' in several settings. The

US PA profession rejects the idea of distinguishing practitioners by level, stating team members have complementary roles.¹⁵ PAs have been highlighted as similarly beneficial to nurse practitioners¹⁶ and competency descriptions for nurse practitioners outline an apparently similar profile to PAs;¹⁷ however, there has been confusion over developing and defining UK extended nursing roles. PAs are a well-defined profession and study findings indicate that team members concurred, finding PAs distinctive. The skill set of PAs is clearly delineated in the DoH competencies framework; in this study, what was appreciated about PAs tended to be the 'softer' cultural and attitudinal issues *combined with* their skill set. That is, their confidence and willingness to deal with uncertainty, communicative approach and sharing of professional culture with doctors. The difficulty of defining the roles of medical staff using skill sets is highlighted by Tooke¹⁸ who, nonetheless, states this is a necessity. Problematical is defining the difference that attitudes, culture and approach can make when applying technical skills. In the USA, 25% of PAs work in family practice, but in our study, we found that PAs were less able to carve out a distinctive role in general practice, compared with the other settings. Weller¹⁹ highlights that Australian and UK primary health-care systems may require less support from new types of professionals compared with the USA. The USA has difficulties producing medical generalists, whereas the UK has formulated a well-defined team approach encompassing GPs and practice nurses.

There are gaps in knowledge about the long-term impacts on patients' health and system costs of increased time spent on patient education by PAs. Until PAs are sufficiently embedded, internationally, it is difficult to discern the extent to which they benefit different types of health-care systems. Whether UK-trained PAs will function as US PAs do, is difficult to say until there exists a cadre of trained and experienced UK-trained PAs.

The English PA profession was not introduced with NHS fanfare, but rather appears to be driven by workplace enthusiasts and higher education institutions seeking a new market opportunity. This picture may be mirrored in Scotland. It would be naïve to expect that the introduction of a new role into the tribal health-care culture will be met with open-mindedness by existing professions. There are questions for policy-makers. First, PAs are being rapidly adopted worldwide – is this a response to a modern workforce gap, cost-reduction or fashion? Second, could nurse practitioners fill this gap with appropriate education, training and professional attitudes? Third, why is it that our study participants most valued PAs' generalism, flexibility and ability to make decisions in uncertain situations? Is this something that has been lost to the UK health service by emphasis on practice guidelines and protocols? Finally, to what extent does PAs shared medical culture, training and worldview compare with doctors and affect their integration into workplaces and systems? Does this make them 'cheap' doctors or generalist supporting medically trained professionals that can improve patients' experiences of the NHS?

The generally favourable findings emerging from this study do not indicate endorsement for the introduction of PAs – they simply reflect overall satisfaction to them as expressed by a range of health-care stakeholders from a diversity of settings. Tooke highlights concerns about the role and place of doctors in the future NHS. Our findings indicate that the introduction of PAs need not undermine the professionalism of doctors. PAs could provide a powerful resource, allowing time for doctor trainer to spend with doctor trainee, a source of knowledge and skills to pass on to trainee doctors moving through departments and provide continuity of presence as a reassurance for patients. The forthcoming 48-hour week is relaxed for NHS doctors, but the presence of PAs could assist in service delivery continuity and improve, not detract, from patient safety.

Competing interest: All authors declare that the answers to the questions on competing interest form are all no and therefore have nothing to declare.

Authors contribution: JF (Guarantor), evaluation project leader, responsible for study design, completed some interviewing, participated in analysis, lead on writing final report; MC, project research fellow (50% for 2 years), conducted largest proportion of interviews, organized work activity data collection, scope of practice forms and supervisor/PA forms, lead on analysis of data and participated in writing final report; JH conducted interviews, conducted analysis, participated in interpretation discussions and edited final report; CW conducted interviews, conducted analysis and participated in interpretation discussions; NA conducted interviews, conducted analysis and participated in interpretation discussions.

Ethical approval: Ethical approval was applied to North of Scotland Ethics Committee, but was not required. Participants gave informed consent before taking part.

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Role of study funder: Interim reports were periodically provided to the funder. The funder had a Steering Group for the project and this group would suggest details or clarification it would like to attain over the next period of study; for example, in the next round of interviewing. Thus, the project research team chose the design, while the funder gave some advice and feedback on specific questions it would like to be asked. At the final report stage, the Steering Group provided commentary and asked for clarification on some points. The funder asked that the findings be submitted for publication, with their approval, but did not suggest journals.

Researcher independence: The researchers are independent from the funders.

Access to data: All authors had access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

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