ORIGINAL ARTICLE

The perioperative specialist practitioner: developing and evaluating a new surgical role

R Kneebone, D Nestel, J Chrzanowska, A E Barnet, J Younger, A Burgess, A Darzi

Qual Saf Health Care 2006;15:354–358. doi: 10.1136/qshc.2005.017509

See end of article for authors' affiliations

Correspondence to: R Kneebone, Department of Biosurgery and Surgical Technology, Division of Surgery, Oncology, Reproduction and Anaesthetics, Faculty of Medicine, Imperial College London, Chancellor's Teaching Centre, 2nd Floor QEOM Wing, St Mary's Hospital, Praed Street, London W2 1NY, UK; r.kneebone@imperial.ac.uk

Accepted 4 July 2006

Introduction: This paper describes the design, implementation and evaluation of a new professional role in surgery. The role of the perioperative specialist practitioner (PSP), conceived as a response to the Working Time Directive, provides integrated preoperative and postoperative care to patients undergoing surgery in hospital.

Methods: A 1-year training programme was designed, dealing with a wide range of knowledge, skills and attitudes. Effective communication was a key component. Nine intensive 5-day modules at Imperial College London (London, UK) alternated with supervised experience of the surgical team at each participant's home trust. Detailed evaluation of the role and the training programme was provided by an independent research team, using an interview-based qualitative approach. Observational data were provided by the project team. Data were analysed using standard qualitative methods.

Results: 27 PSPs across 12 National Health Service trusts took part in two PSP training programmes. A total of 124 interviews (94 individual and 30 group) were carried out with PSPs and their colleagues. Overall, the role was seen as successful and positive, with great potential for dealing with reductions in junior medical cover. Each site encountered different opportunities and problems. Lack of mentorship was a key issue, and the role provoked considerable opposition in trusts. The training programme was viewed as highly successful.

Discussion: PSPs can provide high levels of expertise, but within clear limits. Our training programme has been effective and is perceived to be of high quality. However, introducing a new role requires time and sensitivity if opposition is to be minimised.

This paper is a contribution to the debate surrounding new healthcare roles and their effect on health policy in the National Health Service (NHS). We describe the introduction of a new professional role in surgery in the UK—that of the perioperative specialist practitioner (PSP).

The PSP's role was conceived in 2002 as a response to the Working Time Directive (WTD), with its mandatory cap on junior doctors' working hours from August 2004.^{1–5} We present our 3-year experience in designing, piloting and refining the PSP's role, tracking its progress from initial pilot to completion of second-phase implementation and towards a third programme of training. Detailed evaluation by an independent team has been key to this project and forms the basis for our conclusions.

This project was unusual for three reasons. Firstly, it provided an opportunity to design a new role from scratch in anticipation of a major predicted change in workforce provision (the WTD). Secondly, we used detailed qualitative evaluation to track the evolution of this role alongside a purpose-designed training programme. Thirdly, our involvement from initial concept to the third implementation gave us a longer perspective than is commonly the case with pilot projects.

New healthcare roles are controversial, generating lively debate within government health policy and the healthcare professions.² By describing our approach to role design in one domain, we aim to clarify some more general issues and highlight key points which bear on the wider context of health policy development.

BACKGROUND

Surgery, like other specialties, is undergoing profound change. Increasing specialisation, the introduction of new technologies, and economic pressures to increase throughput and reduce waiting times have all contributed to radical

shifts in the landscape of care.⁶ The WTD has triggered a shift in the cultural climate, as established patterns of care are clearly not sustainable under the new regulations. Role redesign is a possible solution.

Of course many existing roles are being altered, often in response to specific needs of individual clinical units. Such diversity at a local level has many benefits, encouraging innovation and creativity. However, there is no standard approach to developing these roles, and no consistent framework for training, implementation or sharing outcomes. Too local a focus may result in valuable experience remaining unknown to others undertaking similar initiatives, and a lack of evaluation may result in changes being introduced without supporting evidence.

The PSP's role is to care for patients undergoing surgery in hospital, focusing on the ward rather than on the operating theatre. PSPs integrate preoperative and postoperative care, accompanying each patient on his or her journey from admission to discharge. Effective coordination of patient care aims to minimise duplication of tasks and reduce unnecessary delays. A PSP is a key member of the surgical team, working closely with the consultant and others, providing continuity as junior medical staff rotate and acting as a focal point for communication within and beyond the surgical unit.

The PSP's responsibilities include preoperative assessment, requesting and interpreting clinical tests, discussing the implications of surgery with patients and relatives, providing routine postoperative care and pain control, recognising and managing common postoperative complications, coordinating the discharge process and liaising with community services.

Abbreviations: CPG, core project group; PSP, perioperative specialist practitioner; WTD, Working Time Directive

Box 1 Contents of training programme

- Factual knowledge (eg, anatomy, clinical physiology, preassessment, anaesthesia, surgery, postoperative complications).
- Clinical skills (eg, clinical examination, venepuncture, intravenous infusion, bladder catheterisation, arterial blood gas estimation).
- Communication skills (eg, history taking, consent for operation, breaking bad news, presenting clinical information to colleagues—see below).
- Teamworking skills (eg, awareness of team dynamics, professional interplay, managing hostility).
- Professional issues (eg, record keeping, medicolegal issues, prescribing).
- Personal development (eg, learning portfolios, reflective writing, issues around role evolution).

PSPs are expected to recognise early signs of clinical deterioration and refer appropriately when necessary.

A core project group (CPG) at Imperial College London (London, UK) comprised a clinical educational lead, a project manager and a project administrator. The CPG designed and managed the PSP programme, working closely with clinicians and others involved in surgical care. Participants were funded as supernumeraries, either centrally (during the pilot) or by workforce development corporations and strategic health authorities (during the second programme). This prioritised effective education over the need to meet service imperatives during training.

PSPs were recruited from NHS trusts in England (table 1). All were healthcare professionals with considerable clinical experience in their fields, who had expressed a wish to develop their careers in a patient-centred setting. Many were concerned that the only option currently available for career advancement was in management, with the inevitable distancing from hands-on care which it entails. Most had a nursing background, two were operating department practitioners and one was a physiotherapist. Group 1 was recruited via the Modernisation Agency's New Ways of Working Programme and group 2 was recruited by individual strategic health authorities. All were supported by their trusts.

DESIGNING A TRAINING PROGRAMME

The holistic nature of the PSP role requires high levels of clinical, communication and teamworking skills, as well as extensive factual knowledge (albeit within a specified range of practice) and mature judgement. We started by mapping out the responsibilities of a proposed new role in perioperative care. We developed a 1-year training programme, alternating formal training with workplace experience and using a web-based virtual learning environment (WebCT) to access course material from work or home.

Formal training at Imperial College London

Forty eight days of training (nine intensive 5-day modules at 3–4-week intervals and three additional days) cover factual knowledge, clinical skills, communication skills, teamworking skills, professional issues and personal development (box 1).

The PSP training programme aimed to strike a balance between the above elements in each module. Educational methods included didactic lectures, small and large group discussions, and self-directed learning tasks. In addition, we developed two innovative approaches for this role.⁷

Box 2 Summary of results**The role**

- Local support is essential, requiring both a champion and a clinical mentor.
- The perioperative specialist practitioner role differs according to local circumstances such as size of hospital and working patterns.
- Negative points include lack of support, anxiety and unanswerable questions about the future.
- Change is a potent source of resistance and even hostility, and must be actively managed.
- Any training programme must deal with professional issues and regulations in a rapidly changing healthcare landscape.

The training programme

- Participants found the programme enjoyable and challenging.
- Overall perception of the training was positive, and participants valued being able to negotiate programme content with the design team.

High-fidelity simulated environments allowed aspects of the new role to be explored without jeopardising patients' safety, using simulator-based scenarios for the teaching and assessment of procedural skills.^{8,9} This technique uses inanimate models attached to a simulated patient to allow realistic, yet safe practice of clinical tasks in a patient-focused setting, and expert feedback and video-mediated reviews provide intensive individual tuition.

A communication programme throughout the PSP training covers communication with patients, relatives, surgical and anaesthetic department members, and members of the wider team.¹⁰ Effective provision of patient-centred information about diagnostic and therapeutic procedures is key. Challenges include breaking bad news, communicating with people whose first language is not English and communicating effectively by telephone.

Supervised clinical experience

Between modules, each PSP works in the surgical team at his or her home trust, under the supervision of a consultant clinician who oversees clinical training and assesses the PSP's clinical competence. Clinical activity, including all patient encounters and procedures, is logged contemporaneously using handheld computers and monitored centrally.¹¹ Regular meetings with clinical supervisors are documented in each PSP's portfolio.

Table 1 Participants recruited from National Health Service trusts

	PSP 1	PSP 2
Duration	May 2003–April 2004	October 2004–June 2005
Participants	12 (9 nurses, 2 ODPs, 1 physiotherapist)	15 (all nurses)
No of trusts	5	7
Surgical specialities	General surgery, orthopaedics, A&E, breast surgery, treatment centre	Ophthalmology, plastics, orthopaedics, colorectal, general surgery, urology
Outcome	12 completed the course	14 completed the course (one left for reasons unrelated to the course)

A&E, accident and emergency; ODP, operating department practitioners; PSP, perioperative specialist practitioner.

Box 3 Creating a training template

- The ground should be prepared carefully before any new role is introduced, ensuring that existing staff are fully involved in the process.
- Mentorship arrangements must be clearly defined and agreed. Mentors must offer a high level of commitment, and the training programme must ensure that participants are informed and supported.
- The project team should recognise that role-related crises among participants are likely, and plan accordingly.
- Explicit monitoring of participants' evolving competencies should lead to effective consolidation of clinical practice and formal accreditation of the role.

Evaluating the role and the training

Two bodies of evidence underpin this paper. These were gathered throughout programmes 1 and 2 (P1 and P2). Each bears both on the PSP's role and on the training programme.

The evidence is predominantly qualitative, as we believed that this approach would provide richness and detail of data while remaining open to unexpected viewpoints from participants and their colleagues. Face-to-face interviews form the bulk of our data, which are drawn from an extended programme of ongoing work.

The results that we present are grounded in our data, although expressed in a concise and necessarily reduced form.

OBSERVATION BY CPG DURING TRAINING MODULES

Detailed information was gathered by the CPG throughout both programmes. All teaching sessions at Imperial (London, UK) were rated by each participant. This information was fed back to the session teacher immediately after the module.

During a moderated group discussion at the start of each module, PSPs fed back their experiences in their trusts, highlighting positive and negative developments. This allowed PSPs to compare perspectives, share experiences with the project team and highlight problem areas which required action. The project team built up a picture of the evolving role in a range of settings.

INDEPENDENT EVALUATION

To minimise bias and maximise efficiency, we engaged a team of independent researchers, led by a psychologist (JC). The team carried out individual and group interviews, working according to detailed briefs from the CPG but maintaining an open-ended approach to capture unexpected insights.

A consistent qualitative approach was used, exploring a wide range of topics. Detailed reports at each phase were fed back into the programme design. A 1-day final evaluation workshop allowed participants to review the programme critically and suggest future developments, and provided closure for the group.

METHODS

Interview sampling was purposive. The sampling frame reflected our aim of investigating the context of the PSP role and discovering how differences in local circumstances affected development. Wherever possible, interviewees at each trust included key players in developing and implementing the role locally, as well as PSPs' coworkers.

Data collection used written topic guides and all interviews were audiotaped. Positive and negative responses were sought and flexibility to explore unexpected issues was provided. No CPG members participated in the collection or analysis of interview data.

Data analysis used standard qualitative techniques of categorising, comparing, developing concepts, assessing respondents' purposes and intentions, and looking for patterns across the dataset. Analysis of each module review underpinned the CPG's understanding of how the group experienced the programme, and provided evidence for ongoing development. Home trust interviews produced a series of different perspectives on the programme once it was finished, and on the role as it developed.

RESULTS

A total of 124 interviews (94 individual in-depth interviews and 30 group interviews) were carried out. Sampling was as extensive as possible within the constraints of the project. Interviewees included PSPs and professional colleagues across a range of sites (table 1). All our findings are supported by verbatim quotations, although space precludes detailed presentation. Box 2 summarises the key findings.

The role

As a group, the PSPs relished the challenge of taking on and growing into a new role, but encountered considerable challenges. Territorial and communication issues were a major problem. Support from local stakeholders was essential. A "champion" (usually a senior, respected and powerful clinician) must provide active support throughout the project, and not just at its inception. A "clinical mentor" (who may or may not be the champion) must provide a high level of personal supervision throughout.

In district general hospitals and treatment centres, the PSP's role is perceived as providing a key role in the surgical team and relieving shortages precipitated by the WTD. In a tertiary referral centre, however, competition with junior medical staff became a real issue and led to initial hostility and mistrust, requiring a radical redesign of junior doctors' rotas to include PSPs.

All PSPs described considerable changes to working patterns in their trusts. Anecdotal reports of improvement included reductions in preassessment time, the provision of ward cover while doctors were on leave and freeing junior doctors to attend teaching sessions (see Discussion).

Negative points include a lack of commitment and personal support from some mentors, anxiety and insecurity about security of employment and the future of the PSP role, and specific unanswerable questions relating to accreditation of the new role and to prescribing by non-medical practitioners.

Change is a potent source of resistance and even hostility. All PSPs encountered powerful negative responses from some colleagues. Recognising problems and dealing with them promptly is essential if such issues are not to derail an entire programme.

Any training programme must remain abreast of professional issues such as regulations governing prescribing by non-medically qualified staff, and move towards their relaxation. Such constraints can impose a powerful brake on new role development.

The training programme

All except one of the participants (who left P2 for personal reasons) completed the programme and found it an enjoyable and challenging experience, which supported their professional and personal development. All showed a strong sense of commitment to the role and the training.

The overall perception of the training was very positive. Participants felt able to negotiate their learning needs with the CPG, resulting in marked modifications to both the level and the content of training.¹²

DISCUSSION

Limitations

As this is a new role, the number of PSPs is necessarily small. Despite this, our evaluation has captured a much higher level of detail than is commonly the case with pilots. However, the size and richness of our dataset poses problems in presenting our findings concisely. Although our initial intention was to gather detailed data about effects on working patterns of medical staff, clinical throughput and other measures, practical difficulties around conducting a study across numerous complex environments made this impossible.

Caution is needed when attempting to generalise from our experience. Our pilot project was high profile, centrally funded and designed to explore a range of innovative approaches to learning and teaching for a new role. It took place against an increasing awareness of the WTD's imperatives, generating a conducive atmosphere for change. Ready access to excellent teachers, sophisticated technology and educational facilities assisted the process enormously. Moreover, participating PSPs were highly experienced professionals with strong personal motivation to pioneer a new role.

Although we have shown that it is possible to design and implement an effective training programme based on the needs of a specific role, the natural history of role evolution takes place on a longer time scale than the 3 years that have elapsed since this programme started. It is therefore too early to be certain about the true efficacy of the role, although our overall impression is positive.

The wider issues

The NHS presents a kaleidoscope of rapidly changing workforce patterns. There is often a gap between political imperatives to meet external pressures and a more measured response to strategic change. Many innovations lead to premature decisions based on inadequate evidence.

The effect of innovation in an existing structure is a crucial issue. The PSP's role is new in the sense that it has been designed to meet a specific service need in response to external change. Yet, all components of the role already existed; hence, in another sense the innovation lies in defining the role and designing a training programme to support it. Training and onsite development are inextricably linked. Training in itself, however innovative and carefully designed, cannot be considered without its context and the disruptive effects it may have on established healthcare patterns. In our view, role redesign can be seen as provoking change in a complex adaptive system where outcomes are multifaceted and unpredictable.¹³⁻¹⁵

Our study raises issues about the ways in which practitioners undertaking a new role construct their professional identity, and how such an identity is perceived by others in the NHS. We observed a powerful sense of cohesion in both groups, with participants describing themselves to outsiders as PSPs (as opposed to nurses, operating department practitioners or physiotherapists). It remains to be seen how such new identities will be negotiated with more established roles in the NHS.

Practitioners from different backgrounds have different approaches to clinical judgement, reasoning and decision making. Exploring these differences could shed light on current clinical practice and contribute to our understanding of the complex professional relationships underpinning care.

Such issues offer great potential for aligning theory with clinical practice, but lie beyond the scope of this paper.

We believe that PSPs can provide a high level of expertise, but within clearly defined limits. They have already become valuable members of their surgical teams and are taking on many tasks currently carried out by junior doctors. Yet, this process can generate resistance and so it is important for participating trusts to recognise this and deal with it as part of their commitment to support such roles. In our experience, continuing peer support (both personal and via email) in the PSP training groups was crucial to success.

However, the creation of new roles in the NHS raises philosophical issues relating to professional boundaries (eg, what it means to be a doctor or a nurse) and the extent to which these boundaries can or should be redefined. One criticism of the project was that it was "trying to train doctors in 1 year". Although we disagree with such perceptions, it is important to recognise their currency.¹⁶

Our model of focused, outcome-directed training has enabled this group of experienced healthcare professionals to take on a high degree of additional responsibility in a relatively short time. However, any programme of this kind must necessarily be narrow, in the sense that it is designed for a specific role. There is a danger that because PSPs "don't know what it is they don't know", they may overstep the boundaries of safe practice. For this reason, it is vital that their role continues to evolve within the clinical team and not outside it.

All of the PSPs in this study were experienced healthcare practitioners. If new roles simply move qualified and experienced clinical professionals from one part of the NHS to another, there will be no net workforce gain. A logical extension of the new roles concept is to recruit people without a healthcare background and train them to undertake specific clinical roles. This raises contentious issues.

CONCLUSION

We have shown that a coherent training programme can be designed around a new professional role and that this is perceived as effective by those taking part. Detailed evaluation from several perspectives has allowed us to build up a large evidence base. However, the potential benefits of the PSP's role extend far beyond the initial goal of ensuring compliance with the WTD. Such roles could lead to major changes in the delivery of surgical care across the NHS.

The introduction of any major change, however, requires sensitivity, respect and time for teams to come to terms with new patterns of working (box 3). We hope that the lessons we have learnt from this pilot will contribute to the debate.

ACKNOWLEDGEMENTS

We thank all the tutors, clinical mentors and project team members, and of course the 27 PSPs themselves for their invaluable support.

Authors' affiliations

R Kneebone, D Nestel, J Chrzanowska, A Barnett, J Younger, A Burgess, A Darzi, Department of Biosurgery and Surgical Technology, Imperial College London, London, UK

Funding: The pilot was funded by the Working Time Directive of the New Ways of Working Directorate of the Modernisation Agency.

Competing interests: None declared.

Ethical approval: Not required.

Contributors: AD and RK initiated the project. RK, DN and JY designed the training programme. RK, JY, AB and AEB implemented the project. JC conducted the evaluation interviews and analysed the data. RK wrote the paper and all authors helped to revise it. AD is guarantor.

REFERENCES

- 1 **NHS Modernisation Agency**. Working Time Directive Pilots Programme. Report. London: NHS Modernisation Agency, 2004; <http://www.wise.nhs.uk/sites/workforce/usingstaffskillseffectively/Document%20Library/1/WTD%20Pilot%20Reports/Imperial%20College%20London%20-%20Perioperative%20Specialist%20Practitioner.pdf> (accessed 27 Sep 2006).
- 2 **Phillips H**, Cripps J. EWTD developments. *Bull R Coll Surg Engl* 2004;**6**:190–2.
- 3 **Buchan J**, Calman L. Skill mix and policy change in the health workforce: nurses in advanced roles. OECD Health Working Papers No 17, 19 Oct, 2004.
- 4 **Mahon A**, Harris C, Walshe K, *et al*. The European Working Time Directive and doctors in training: an early evaluation of 19 NHS pilot projects. Report, 2003.
- 5 **Fenn W**. American idea of physician assistants can be anglicised. *BMJ* 2002;**324**:735.
- 6 **Kneebone R**, Darzi A. New professional roles within surgery. *BMJ* 2005;**330**:803–4.
- 7 **Kneebone RL**. Clinical simulation for learning procedural skills: a theory-based approach. *Acad Med* 2005;**80**:549–53.
- 8 **Kneebone R**, Kidd J, Nestel D, *et al*. Blurring the boundaries: scenario-based simulation in a clinical setting. *Med Educ* 2005;**39**:580–7.
- 9 **Kneebone R**, Kidd J, Nestel D, *et al*. An innovative model for teaching and learning clinical procedures. *Med Educ* 2002;**36**:628–34.
- 10 **Nestel D**, Kneebone R, Barnet A. Teaching communication skills for handover: perioperative specialist practitioners. *Med Educ* 2005;**39**:1143.
- 11 **Kneebone R**, Brenton H. Training perioperative specialist practitioners. In: Kukulska-Hulme A, Traxler J, eds. *Mobile learning: a handbook for educators and trainers*. London: Routledge Falmer, 2005.
- 12 **Kneebone R**, Nestel D, Chrzanowska J, *et al*. Innovative training for new surgical roles – the place of evaluation. *Med Edu* (in press).
- 13 **Fraser SW**, Greenhalgh T. Complexity science: coping with complexity: educating for capability. *BMJ* 2001;**323**:799–803.
- 14 **Wilson T**, Holt T, Greenhalgh T. Complexity science: complexity and clinical care. *BMJ* 2001;**323**:685–8.
- 15 **Plsek PE**, Greenhalgh T. Complexity science: the challenge of complexity in health care. *BMJ* 2001;**323**:625–8.
- 16 **Talbot M**. Good wine may need to mature: a critique of accelerated higher specialist training. Evidence from cognitive neuroscience. *Med Educ* 2004;**38**:399–408.