

THE ASSOCIATION OF ANAESTHETISTS
OF GREAT BRITAIN AND IRELAND

**PHYSICIANS'
ASSISTANTS
(ANAESTHESIA)
REVIEW 2011**



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Introduction and background to the review

Physicians' Assistants (Anaesthesia) (PA(A)s) are now part of the clinical team in several departments of anaesthesia in the UK, and in order to understand the development of the role it is important to look back over the last 10 years. Workforce predictions made in the year 2000 suggested that the UK would have too few medical anaesthetists to meet the expansion proposals of the then NHS Plan and the anticipated impacts of the 2004 and 2009 implementation of elements of the European Working Time Directive (EWTD). A joint evaluation was undertaken by the Changing Workforce Programme, the Department of Health (DoH), and the Royal College of Anaesthetists (RCoA), including visits to the USA, Sweden and Holland, which resulted in the report *The Role of Non-medical Staff in the Delivery of Anaesthesia Services* [1].

In summary, the report concluded that:

- The ways in which anaesthetic services in the UK are currently delivered are not sufficient to maintain and increase future surgical throughput;
- In other countries, non-medically qualified staff work well within the anaesthesia team;
- The development of the role of non-medically qualified staff required major input from the RCoA.

The 'New Ways of Working in Anaesthesia Programme' (NWWA) was established in early 2003 to look at the development of a non-medical role within the anaesthesia team. Following the initial scoping, development of the Anaesthesia Practitioner (later becoming PA(A)) role commenced in January 2004. The role was developed to increase the flexibility of medical anaesthetists and build capacity in medically-led anaesthesia teams to meet the needs of patients. The original description of the role was "*A physicians' assistant (anaesthesia) is a member of the anaesthetic team, who is trained in both the underlying scientific and medical knowledge pertinent to anaesthesia, and in the skills of administering anaesthesia. Overarching standards were set such that PA(A)s cannot be on-call or practise independently from an anaesthetist; their supervising anaesthetist must be no more than 2 minutes away and present in the same operating suite*".

In 2003, five trusts started as pilot sites for the programme and, in 2005, an additional 21 trusts joined, with 34 trainees organised into seven clusters. The NHS University (NHSU) commissioned a PA(A) National Curriculum Framework from the University of Birmingham, and arrangements were proposed by which the RCoA would undertake a final assessment of PA(A)s before their registration. The Framework was developed with the RCoA, NHSU and the University of Birmingham together with other major stakeholder groups including nurses, patients and trainee anaesthetists. Originally, three universities delivered the 27-month training programme: Birmingham, Hull and Hertfordshire.

Within Phase 1 of the Programme, five initial development sites were established. Three recruited trainee PA(A)s from nursing and operating department practitioner (ODP) backgrounds to develop the role and learning programme in this country. The remaining two sites recruited nurse anaesthetists from overseas to



the role of PA(A). The purpose of this was to assess the impact that overseas anaesthesia practitioners might have on the development of the anaesthesia team and systems of work in the UK. The first cohort qualified in October 2006. The University of Edinburgh also developed a postgraduate diploma based on the National Curriculum through which people could qualify for PA(A) in Scotland, and 12 students started this course in 2006. Initially, central funding was available, but this finished in England and Wales in 2007 and in Scotland in 2009. Funding for further PA(A) development therefore must come from hospital or health authorities/boards.

The Association of Physicians' Assistants (Anaesthesia) (APA(A)) is the representative body of PA(A)s in the UK. Currently there is no statutory regulatory body for PA(A)s to set professional standards. The APA(A) manages a voluntary register of qualified PA(A)s.

The AAGBI's position on the role of PA(A)s was set out in a joint position statement with the RCoA in 2006. There have been subsequent modifications to the original statement, all of which are available on AAGBI and RCoA websites. The latest update was in May 2011.

In 2008, Skills for Health, in partnership with NHS West Midlands, commissioned the Institute for Employment Studies to undertake a national evaluation of PA(A) roles to assess the impact of PA(A)s [2]. There was a low response rate to this study and it was difficult to obtain much useful information from the report. In March 2007 the DoH produced a toolkit to support the introduction of PA(A)s [3].

Since this report, departments of anaesthesia, workforce dynamics, and indeed the wider NHS have changed considerably. Concerns continue to be expressed by some anaesthetists about the future role of PA(A)s. Indeed, the AAGBI is well aware of the wide spectrum of opinion amongst its members. There are those who are opposed to the grade, fearing loss of job opportunities for anaesthetists and an impact on anaesthetic training. At the other end of the spectrum there are those who feel that anaesthetic services should be run as a team, with PA(A)s playing an active supporting role as part of that team. The AAGBI felt that more knowledge was needed of the current situation and that is the reason for this review. The review concentrated on all roles of PA(A)s outside the intensive care unit (ICU), where the Critical Care Practitioner role is somewhat different.



Methodology

The PA(A) Review Group was established by the AAGBI. It comprised five members of the AAGBI Council, including trainee representation, a representative of the RCoA and a representative of the APA(A).

We believe that at the time of the review, 100 PA(A)s were practising in the UK. Information was gathered in two ways. Firstly, a survey was sent out to as many PA(A)s as possible. It was sent to them via the APA(A) website, was placed on two fora commonly used by PA(A)s, and also posted on Facebook. Around 60% of all PA(A)s responded. Further information was gathered via email and telephone interview.

Secondly, a series of visits by members of the Review Group were conducted. These were to hospitals with established PA(A)s working within the anaesthetic team and to other hospitals embarking on incorporating the grade into their organisation. Visits were made to University College Hospital London, Exeter, Queen Elizabeth Hospital, Birmingham, the Forth Valley Royal Hospital, Sheffield and Gateshead. A telephone interview was conducted with a consultant anaesthetist and a PA(A) at Glangwili Hospital, Wales. We asked all Clinical Directors if we could interview both working and trainee PA(A)s, consultants, trainees and some ODPs. We also asked specifically to talk to consultants within the department who were opposed to the establishment of the grade.

Information from the survey was collected and reports from the various units gathered together. We felt it important that the review should not concentrate on individual units; rather, it should focus on the overall experience of the implementation of PA(A)s.



Survey results

The survey produced a 60% response rate; the results are presented in Appendix 1. By far the majority of PA(A)s had previous NHS experience. The original view was that PA(A)s would be drawn from the pool of science graduates but this has not been as extensive a recruitment area as anticipated. Almost all PA(A)s were involved, as expected, in patient assessment, venous cannulation and induction of and emergence from anaesthesia. Many were involved in teaching other trainee PA(A)s and trainees in other disciplines, including anaesthesia. The majority had experience of 2:1 working, some with a consultant on their own, and others with an anaesthetic trainee attached to the consultant overseeing two PA(A)s. The majority were involved in high turnover lists rather than single long cases. Sixty-four percent had an enhanced role, e.g. regional anaesthesia or sedation, and 9% had on-call duties.



PA(A) activities

In the departments of anaesthesia visited there was a minimum of one and a maximum of six PA(A)s, both qualified and in training. The majority of departments had four or five qualified personnel. The AAGBI and RCoA published a *Supervision and Scope of Practice* statement in 2008 [4]. Subsequently, the RCoA has attempted to clarify issues surrounding regional anaesthesia and sedation techniques performed by PA(A)s. The latest modification in May 2011 was published on the RCoA website [4]. This latest series of recommendations under *Supervision and Scope of Practice* attempts to give guidance on the standard of practice of PA(A)s throughout the UK. However, PA(A)s do not have a regulatory body and are therefore without national, statutory and thus compulsory standards of practice. It is in the context of the above recommendations that we reviewed PA(A) activities. Variance from the recommendations was identified and is noted in this report.

The recommendations state that when working in the operating theatre, a consultant supervising a PA(A) must be no more than 2 min away from the PA(A) and must be able to attend immediately, and therefore must not undertake a solo clinical activity that cannot be left. In addition, the supervising consultant must be in the anaesthetic room or operating theatre during induction of anaesthesia and be present during emergence from anaesthesia until the patient has been safely handed over to the post-anaesthesia care unit (PACU) staff. This means that at induction and emergence, a consultant should directly supervise a PA(A). The APA(A) website, at the time of the survey, simply states that there should be a consultant present in the operating theatre and this may have led to some of the discrepancies noted below in direct and local supervision.

The AAGBI and RCoA recommendations go on to state that the supervising consultant should be responsible for no more than two patients at any one time and that these patients should be in adjacent theatres within the theatre suite. PA(A)s cannot prescribe drugs and must always work with a suitably qualified anaesthetic assistant.

PA(A)s must not anaesthetise paediatric or obstetric cases or be responsible for initial airway assessment, unless part of a recognised multidisciplinary team within the hospital. When PA(A)s provide sedation for procedures outside the theatre complex, the level of supervision must be the same as in theatre. The original recommendations indicated that the PA(A)s should not undertake regional anaesthesia or regional blocks. In some units, enhanced roles have been developed through local training and assessment of competencies, with particular regard to the primary importance of patient safety.

As will be seen from the list of activities below, PA(A) activity is much more varied than the original 2:1 model envisaged, both in the tasks undertaken and the locations. Even though some variance can be explained through different interpretation, the Review Group did note some deviation from the 2011 RCoA and AAGBI guidelines.



1:1 working with consultants

PA(A)s worked in a variety of areas. Activities included pre-operative assessment, induction, tracheal intubation, maintenance and tracheal extubation. The review revealed that only rarely were PA(A)s supervised by senior anaesthetic trainees. A consultant would often have a trainee anaesthetist as well as a PA(A) working with them. This was found to be particularly helpful for the trainee anaesthetist as it allowed the consultant more time for teaching in the knowledge that the patient was being monitored properly. The benefits of 1:1 working (audited in some units) included faster turnover of patients, allowing staggered list admission and a reduction in downtime between cases. The results of some of these benefits are detailed in the Department of Health toolkit [3]. As well as enhancing teaching, the PA(A) could also release the consultant for nearby meetings or breaks. Skilled dedicated assistants were always available to PA(A)s in the operating theatre. However, it was reported in some units that dedicated skilled assistants were not available for sedation, a practice at variance from the latest RCoA guidance [4].

2:1 working with consultants

This is the model of work originally described. Of the seven units visited, three were currently using this arrangement and two were about to start. Those anaesthetised by PA(A)s tended to be ASA Physical Status 1 or 2 patients on day surgery lists. The guideline that supervising consultants should be present at both induction and emergence had been interpreted slightly differently as alluded to above. The survey showed that in 72% of inductions of anaesthesia, direct supervision had occurred, but in 28% the consultant was in the theatre suite but not necessarily directly supervising. At emergence, about half of the PA(A)s who responded reported that the consultant was immediately available in the operating suite but not directly supervising. However, there were no major complications reported to the Review Group in either of these groups.

Regional anaesthesia

The guidance statement for regional anaesthesia has recently been changed. Most units visited had PA(A)s performing some form of regional technique. Upper limb blocks were performed by PA(A)s under ultrasound guidance in some centres. In one, the PA(A) would perform the block under ultrasound guidance, take the patient into theatre and leave them with an ODP, unless the patient was sedated (by the PA(A)). On a urology list with a consultant anaesthetist, one PA(A) performed spinal anaesthesia. PA(A)s were also performing sub-Tenon's, Bier's and fascia iliaca blocks, and in one unit PA(A)s were about to start an on-call regional anaesthesia service.

Audits in several of the units visited revealed that blocks performed by PA(A)s were generally successful and had low failure rates compared with those done by trainees (Appendix 2). Some complications had occurred, such as block failure and possible intravenous administration of local anaesthetic, but all had been successfully managed by the supervising consultant. Protocols vary between units and the distinction between consultant and PA(A) responsibilities also varied.



Central and arterial line insertion

PA(A)s perform these tasks in several units. In one, there was a specific service for central line insertion established in 2009. Audit of the first 200 lines inserted revealed a reduction in infection rate from 25% before the service was established to 0% afterwards. All patients gave consent to the PA(A) performing the procedure, and 65% of the lines were placed between 07.30 h and 17.00 h (previously this proportion had been 38%). There were no major complications in this series of line insertions, and the PA(A)s were teaching anaesthetic trainees central and peripheral insertion techniques.

On-call

In one unit a PA(A) was first on-call with a supervising consultant onsite during daytime sessions. This was a local initiative.

Out of theatre activities

1. In two units visited, PA(A)s provided sedation. In one, this was in a location distant from theatre without a dedicated skilled assistant. The supervising consultant had no other fixed session, and this was again a local Trust initiative. Some consultants at this Trust were concerned about safety but untoward incidents were few and had been dealt with successfully. This is at variance with the 2011 RCoA statement that recommends that there should be the same levels of supervision and monitoring for PA(A)s providing sedation as for general anaesthesia [4]. The RCoA is currently developing guidelines for sedation in a variety of situations.
2. In several units, the PA(A) contributed towards teaching ODPs, emergency staff and, in some cases, trainee anaesthetists.
3. PA(A)s were involved in audit in several departments. In one, they were responsible for producing the rota for the whole, very large, anaesthetic department (Appendix 2).
4. PA(A)s acted as a liaison in some units between the anaesthetic and other departments, e.g. Emergency and Radiology.



Comments

The purpose of this exercise was to review current UK PA(A) practice nearly a decade after the start of the initiative.

The original statements made by the AAGBI and the RCoA were weighted on the side of caution [4]. These statements have been modified as PA(A)s have demonstrated, through local training and assessment, an ability to perform tasks such as regional techniques and sedation. Many of these local developments have been audited (Appendix 2), and there is currently little or no evidence of significant adverse patient outcomes. Such developments have significant impact on the departments in which they have been instituted. PA(A)s have facilitated pre-operative assessment, enabling staggered admission of patients, and their presence has reduced turnaround times.

There are about 100 PA(A)s practising in the UK, and the only national scheme available for training is at the University of Birmingham. Only a handful of trainees are on the current year's programme. The original financial pump priming for training has now been replaced by financial initiatives at trust/hospital level. The expected shortage of trained medical anaesthetists did not materialise. However, that is not to say shortages will not occur in the future. The original concept of recruiting science graduates has also not occurred at the originally expected level. The future career structure for PA(A)s is uncertain.

The AAGBI is aware that some of its members remain opposed to PA(A)s for a number of reasons. Some see PA(A)s as a threat to development of anaesthetic posts, though it is difficult to draw any conclusions when so few PA(A)s exist.

Some AAGBI members support the PA(A) concept. They like the idea of a team approach with consultants overseeing a service, part of which is provided by PA(A)s. We observed and have described many examples of the ways that PA(A)s are supporting the units in which they work, not simply by anaesthetising patients but also by improving flexibility and continuity within departments.

The views of consultants in the units visited varied. There were those who remain opposed, but they were in the minority. Many of those who were originally sceptical had changed their minds. We found no evidence of enthusiasts becoming opposed to PA(A)s after their introduction .

Anaesthetic trainees varied in their views on whether PA(A)s impacted negatively on their training. The majority felt that they impacted positively, allowing their trainers more freedom to train.

The situation at the moment is that PA(A)s are still being trained, albeit in small numbers. The majority of consultants interviewed during the visits were supportive of the PA(A) initiative.



The Working Party believes, in the interests of patient safety, that if the PA(A) initiative is to continue then PA(A)s must be regulated by a national body to ensure adherence to national standards. These standards should be produced in close consultation with anaesthesia's professional bodies such as the AAGBI and the RCoA. The variation in levels of PA(A) supervision was a notable feature of the review. In the absence of a national regulatory body for PA(A)s, strong local consultant leadership is essential in upholding published guidelines.



References

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[://www.rcoa.ac.uk/docs/RCoA_PAA%20supervision_May%202011.pdf](http://www.rcoa.ac.uk/docs/RCoA_PAA%20supervision_May%202011.pdf) (accessed 2/3/12)
[://www.aagbi.org/sites/default/files/pa%28a%29_statement_13_08_10.pdf](http://www.aagbi.org/sites/default/files/pa%28a%29_statement_13_08_10.pdf) (accessed 2/3/12)



Appendix 1: Survey Results

Summary data

- There were 60 responses (approximately 60% of practising PA(A)s).
- 58 were employed as PA(A)s; two were not employed due to non-availability of posts: one had returned to their old post (at the same pay) and the other had gone into education (at higher pay).
- The average number of consultants involved in training a PA(A) was 20.
- PA(A) pay: Band 7 = 25, Band 8 = 26 (approximately a 50:50 split of those who responded to this question).
- For 39 respondents, the employing hospital had been involved in their training; in the remaining 19, it had not.
- 95% of respondents felt that they could contribute further towards a better quality, more efficient and more productive anaesthetic service.

Previous experience (n=60)

ODP	20 (33%)
Nurse	20 (33%)
Student/science graduate	15 (25%)
Other healthcare profession	4 (7%)
Non-healthcare background	1 (2%)

Duties carried out and supervision of those duties (n=58)

	Number (%)	Supervision		
		Direct	Local	Distant
Venous cannulation	56 (97%)	1	27	26
Patient assessment	54 (93%)	0	15	39
Induction of anaesthesia	54 (93%)	39	15	0
Emergence from anaesthesia	53 (91%)	26	27	0
High turnover list	50 (86%)	26	24	0
2:1 working with consultant	42 (72%)	10	32	0
Arterial cannulation	40 (69%)	19	14	7
Enhanced role, e.g. regional anaesthesia, sedation	37 (64%)	11	18	8
Teaching	32 (55%)	1	9	22
2:1 working with consultant and trainee	30 (52%)	7	23	0
Central venous cannulation	23 (40%)	10	11	2
On call duties	5 (9%)	1	1	3



Appendix 2: Audit Examples

Sub-Tenon's block service

PA(A)s began delivering sub-Tenon's blocks under proximal supervision in 2005. Up to May 2011, 2,400 blocks have been performed with no reported complications. The Trust has produced guidelines for sub-Tenon's block by non-physicians.

Fascia iliaca block for hip fracture patients

Fascia Iliaca block insertion for hip fracture patients by PA(A)s was established after a training and competency program approved by the Trust's governance committee. Seventy-one patients had had blocks performed with no complication and a reduction of pain scores post-block. It is hoped to incorporate this service into the hip fracture patients' pathway.

Sedation in radiology service

About 425 cases for interventional radiology had been sedated by PA(A)s; there were two conversions to general anaesthesia with the supervising consultant present at both inductions. The on-call consultant became the supervising consultant for this service and provided distant supervision in the majority of cases. The cases included radiofrequency ablations (66 - reduced general anaesthesia waiting list from three months to three weeks), nephrostomy, ureteric stents, vascular angioplasty and chronic pain techniques under CT guidance.

Survey of patients undertaken: all happy with sedation and analgesia. Survey of radiologists undertaken: all happy or very happy with the service.

All nurses in the radiology department retrained to meet sedation training and immediate life support standards. The PA(A)s are currently trialing remifentanyl PCA in the radiology unit. A poster presentation of service accepted for the 2011 World SIVA Conference in Singapore.

Upper limb block service

Blocks audited 1764

	PA(A)	1006
	Consultant	569
	Associate specialist	35
	Senior anaesthetic trainee	63
	Junior anaesthetic trainee	91
Complications (Consultant)	Conversion to GA (failed block/anxiety)	1.7%
	Conversion to GA (length of procedure)	0.2%
	Local Infiltration (by surgeon)	2.2%
	Sedation (anxiety)	8.9%
	Sedation (tourniquet pain)	1.9%
Complications (PA(A))	Conversion to GA (failed block/anxiety)	0.7%
	Conversion to GA (length of procedure)	0.1%
	Local Infiltration (by surgeon)	1.0%
	Sedation (anxiety)	2.7%
	Sedation (tourniquet pain)	0.9%
Complications (Senior Trainee)	Asleep block	2.1%
	Conversion to GA (failed block/anxiety)	4.3%
	Local Infiltration (surgeon)	6.7%
	Sedation (anxiety)	2.4%
Complications (Junior Trainee)	Asleep block	3.5%
	Conversion to GA (failed block/anxiety)	1.8%
	Local infiltration (by surgeon)	3.7%
	Sedation (anxiety)	5.8%
	Sedation (tourniquet pain)	2%



