The National Institute of Academic Anaesthesia
Comprehensive Review

2008–2011

www.niaa.org.uk

FOREWORD

HRH The Princess Royal
Patron, The Royal College of Anaesthetists

Now in its fourth year, the National Institute of Academic Anaesthesia (NIAA) is the result of a highly successful collaboration between The Royal College of Anaesthetists, The Association of Anaesthetists of Great Britain and Ireland and the journals *British Journal of Anaesthesia* and *Anaesthesia*. This partnership has been strengthened by the involvement of most of the specialist societies in anaesthesia in the UK. I am pleased to see the establishment of such a body dedicated to the advancement of academic anaesthesia and welcome this, the first Comprehensive Review for the NIAA.

Under the strong chairmanships of Professor David Rowbotham and Professor Ravi Mahajan the NIAA has achieved a great deal in its short history, particularly in developing a model process for the distribution of research funding across the profession and establishing the Health Services Research Centre, designed to improve patient outcomes through in-depth and innovative clinical audits.

In this way, the NIAA meets its objectives of improving patient care by facilitating research which will make a genuine difference to clinical practice. Furthermore, the Institute provides support to academic trainees, enabling them to develop their expertise and contribute to high-level academic activity.

The following pages celebrate the significant achievements to date, all made possible through the valuable contributions of the NIAA Board and Research Council, the specialist societies and associations, and individual researchers in the field, and outline the future vision and strategic direction of the Institute.

I hope that reading this Comprehensive Review inspires you to participate in the research which is so vital in improving patient care and distinguishing the profession, and I wish the Institute every success in the coming year.

Contents

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National Institute of Academic Anaesthesia

Prof Ravi Mahajan & Prof David Rowbotham

The National Institute of Academic Anaesthesia (NIAA) was established in 2008 by the four initial partner organisations: Royal College of Anaesthetists (RCoA); Association of Anaesthetists of Great Britain and Ireland (AAGBI); *British Journal of Anaesthesia (BJA)*; and *Anaesthesia*. Its aims are: to develop and maximise the academic profile of anaesthesia within the healthcare profession, NHS, universities and major research bodies; to facilitate high profile, influential research; to support training and continuing professional education in academia; and to improve patient care by promoting the translation of research findings into clinical practice. Four functional entities have been established: the NIAA Research Council; NIAA Health Services Research Centre (HSRC); support for training and CPD in academic anaesthesia; and academic military anaesthesia. The aim of this publication is to describe the NIAA's strategy and share our achievements so far with partners and stakeholders, including patients and the public, researchers, clinicians, funding bodies and potential collaborators.

Membership of the NIAA Research Council includes the founding organisations as well as most of the research active specialist anaesthetic societies in the UK. All work in close partnership is supporting clinical and laboratory research by funding NIAA co-ordinated research grants (approximately £0.5 million per year), Research Fellowships and the British Oxygen Company Professorship. The Research Council has a rigorous and transparent governance structure for assessing grant applications. Most grants are recognised by the National Institute for Health Research (NIHR) for portfolio inclusion and support from the NIHR Comprehensive Local Research Networks. Our research priority setting exercise was the first national project of its kind in Anaesthesia.

The NIAA HSRC is becoming a vibrant and productive organisation (led by its Director, Prof Grocott). It has begun to oversee National Audit Projects and has established a national peri-operative registry by bringing together the Emergency Laparotomy and Hip Fracture Peri-operative Networks. It is also developing HSRC Research Fellowships. The HSRC will be a major resource for research and audit, facilitating national collaborative projects that will lead to improved healthcare delivery, quality and outcomes.

Supporting and encouraging trainee anaesthetists with an academic interest are key strands of our strategy (led by Prof Sneyd). Trainee study days, prizes and meetings are regular events, including a research methodology course organised by the *BJA*.

The NIAA has continued to work closely with academic military anaesthesia led by Prof Mahoney. In addition to many joint presentations last year, the NIAA has facilitated collaborative projects between military and civilian academic anaesthesia.

The NIAA is now in its fourth year and benefits from a robust structure and governance system. It is beginning to develop mechanisms for closer national and international collaborations, align anaesthesia research with the national agenda, increase the extent and quality of academic activities of anaesthesia trainees and support researchers in securing prestigious funding. Its future success depends on active engagement with its partners and the anaesthetic profession; we hope that you will continue to support its aims.

Why Do We Need Research in Anaesthesia?




Dr Iain Wilson, President of the Association of Anaesthetists of Great Britain & Ireland
Dr Steve Yentis, Editor-in-Chief of 'Anaesthesia'
Prof Nigel Webster, Chairman of the British Journal of Anaesthesia Editorial Board
Dr Peter Nightingale, President of the Royal College of Anaesthetists

Each year, 234 million major operations are performed across the world – roughly one operation per 25 people. At least seven million patients suffer complications and there are one million deaths following surgery, half of which are likely to be preventable.

In the UK, more than three million people had an operation under anaesthesia in 2010. Although developments in anaesthesia care led by consultants have made surgical care in the UK amongst the best in the world, we know that considerable improvements can still be made, particularly in the areas of major and emergency surgery and pain management. The elderly are at particular risk.

Because of the complexity of healthcare, it is not always clear how to improve things most effectively. This is why we need more research to find the answers to the problems we face in the operating theatre, intensive care units and labour wards on a day to day basis.

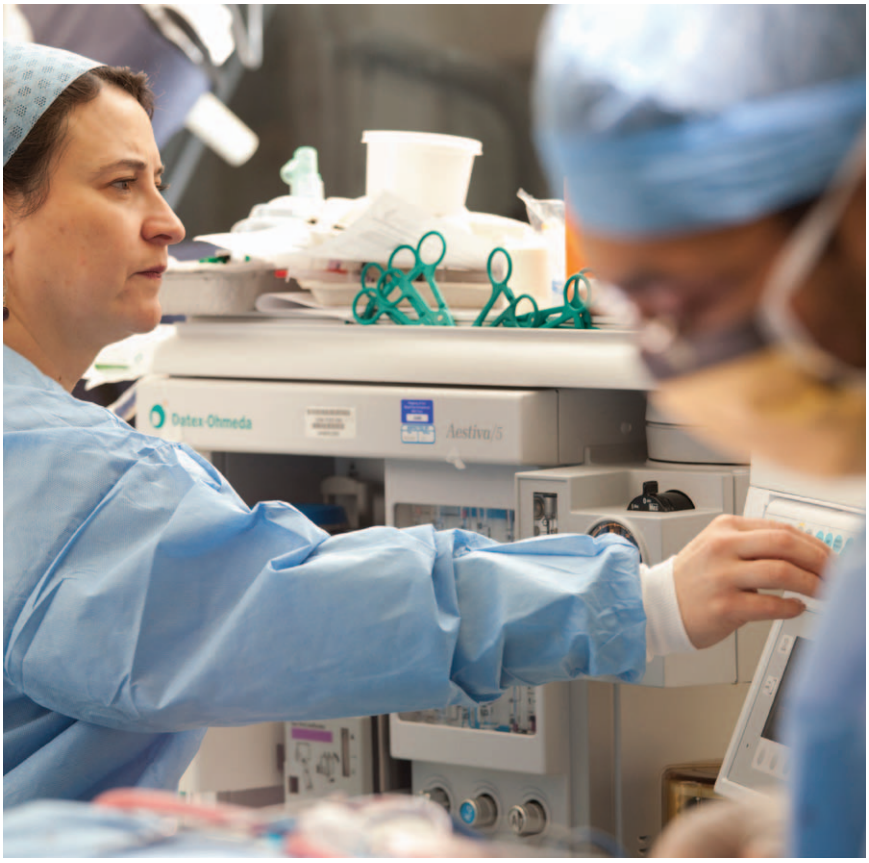
Research into drugs, techniques and safety are all required urgently to demonstrate the most effective ways of making surgical and anaesthetic care safer and less stressful for the patient. However, this takes funding.

As a recent example, the WHO Safe Surgery Checklist, now in place in every UK hospital, has been demonstrated to reduce deaths and serious morbidity by 40% through improvements in communication and team working. This remarkable project could not have been achieved without the research involved in its development.

Following a number of trials where patients and doctors worked together as partners, a method of monitoring patients undergoing major cancer surgery using a Doppler ultrasound probe has led to earlier recovery and discharge from hospital.

With a financial recession, funds available for research are shrinking and yet the number of patients is increasing; also, surgical procedures are becoming longer and more complex.

The Royal College of Anaesthetists and the Association of Anaesthetists of Great Britain and Ireland were so concerned about the low level of research activity and funding in the UK that in 2008, together with the journals *British Journal of Anaesthesia* and *Anaesthesia*, we formed the National Institute of Academic Anaesthesia (NIAA). Following our vision, many of the UK's



anaesthesia specialist societies have now joined us to improve research in all aspects of anaesthesia care.

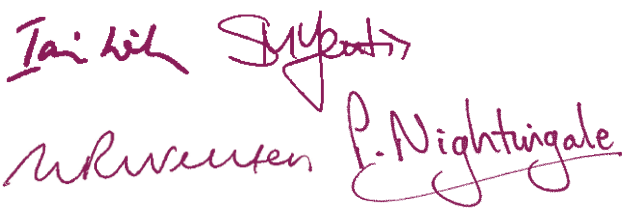
The aim of the NIAA is to enhance research activity in the NHS by raising awareness of the difficulties, to enhance the quality of planned projects and to fund research activity within our resources.

At present we are unique and, to date, have made awards of £2 million by donation from our membership each year. Whenever additional funding is obtained, from the NHS and other donors, we are able to expand our activities leading to practical improvements for the day to day experience of patients.

Every grant application is carefully peer-reviewed using an international panel of reviewers and then competitively assessed against other projects to ensure value for money for our sponsors.

This report of the NIAA's activities will demonstrate the advances and successes we have enjoyed and also the projects that we feel need to be performed as a matter of national urgency.

We hope that you will find this report thought-provoking as well as enjoyable to read. If you are interested in helping the NIAA to improve research into anaesthesia in the UK, please do contact us as we are keen to hear your views and ideas.



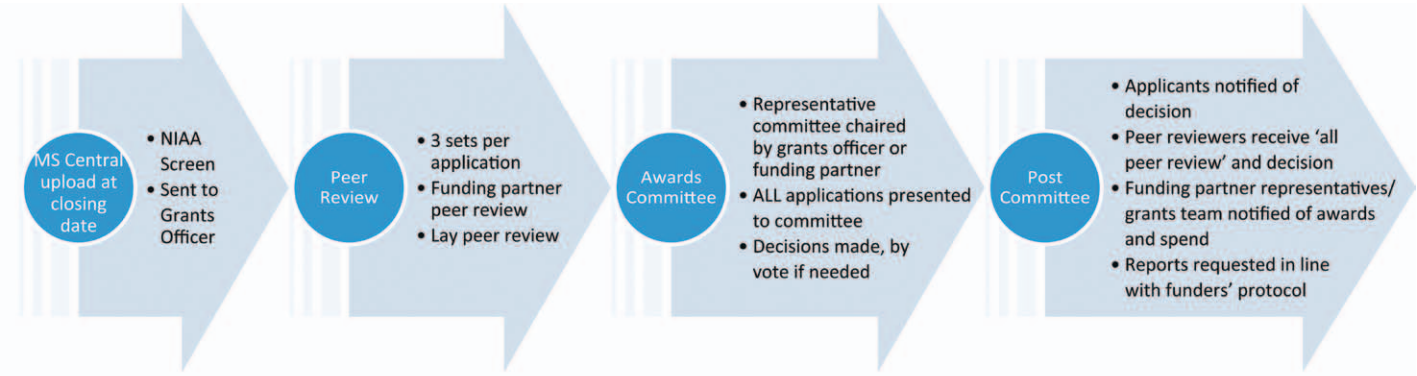
Effective Collaboration

Prof David Lambert

In 2008, when the NIAA was officially formed, one of our priorities was to attempt to co-ordinate anaesthetic specialist society funding streams. Our working model was to set up and maintain a process that will further the vision of the NIAA to '***facilitate high profile, influential research***', that will be viewed by funding partners (specialist societies), other stakeholders and funding agencies as an impartial, transparent, fair and responsive system. When we set this up we did not know if the partners would be able to work effectively as a collective, but have been greatly reassured by the ease with which this has happened and all those round a common table have been extremely accommodating of each other's needs and priorities.

Our first round of grant activity took place in the spring of 2008 and we have completed eight rounds to date. Our funding process has been transformed over this period from email and paper contact to a fully web-based grant tracking system (run by Manuscript Central) that runs twice per year (Round 1 and Round 2) with a first round in the spring and a second in the autumn. Our activity is shown in the chart as having handled 235 grants for £7 million and made 73 awards for £2 million. Our lifetime strike rate is 30% and we aim to get a decision to applicants in 12 weeks. The advantages of our new system is that multiple funding partners are present at the grant committee/award stage and as such movement of funds from one funder to another and co-funding are all now possible. Since the first example of joint working between *BJA*/RCoA and *Anaesthesia*/AAGBI in 2008 for a project grant 'Computational modelling of the cerebrovascular behaviour of patients undergoing carotid endarterectomy (Dr Moppett, Nottingham)', for which individually there was insufficient funding available, there have been many other examples of movement of applications between funders and shared

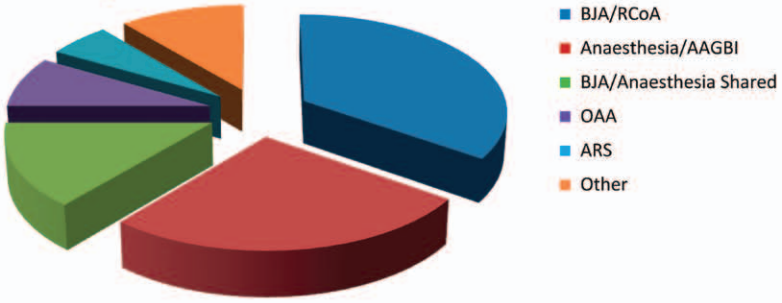
Courtesy of Peninsula College of Medicine & Dentistry



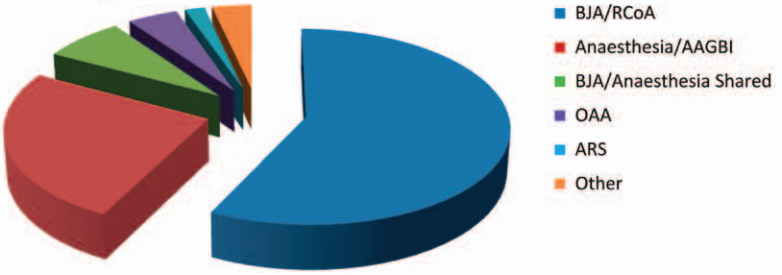
Data from 8 rounds; 2008(R1)–2011(R2)

Funding Partner	# of Awards	Spend
BJA/RCoA	24	1,154,038
Anaesthesia/AAGBI	20	545,217
BJA/Anaesthesia Shared	11	149,388
OAA	6	87,365
ARS	4	35,941
APAGBI	2	26,115
ACTA	2	13,475
SEA UK	2	13,263
DAS	1	10,000
NASGBI	1	9,992
TOTALS	73	2,044,794

Proportional number of awards made



Proportional spend



funding to utilise all available funds at each round. Our research portfolio covers project grants for clinical and non-clinical research, MD fellowships for clinicians and PhD studentships. In addition to these activities, the grants process was used in response mode to award the British Oxygen Company Professorship (awarded to Prof Mike Grocott) for which there were 11 high quality applications adding a further £2.8 million to the applications we have handled. As a result of the open competitive process that we run we have been successful in gaining NIHR portfolio status for the clinical projects from some of our funding partners, so further adding to the value of the award.

What for the Future?

The success of our system is clear and other specialties with similar funding issues to our own can learn from this. However, the summary in this report is just the beginning; we have ambitious plans and there is much still to do. We need to build on the joint working between our funding partners and use this to become more strategic in the way we fund, to try to pool resources to common specialty specific themes and further streamline the process for applicants and funding partners alike. Moreover, we need to be forward looking, responsive and able to meet the needs of our stakeholders. Based on the large number of grants we have handled over the last four years it is clear that there is a wealth of research active clinicians and scientists in our specialty whom we need to be both supporting and using to mentor the applicants of the future. The NIAA Grants Team looks forward to working with you in the future.

Funding Partners

AAGBI

In the past, the Association of Anaesthetists of Great Britain and Ireland administered its own substantial grants and awards, and there was a reciprocal arrangement for the Chair of the Grants Committee and his/her opposite number at the Royal College to sit on each other's committees. This inevitably led to considerable duplication of effort, especially since unsuccessful applicants to one of the bodies would often then apply to the other.

Since the Association and College joined forces, with their respective journals, to form the NIAA, we have all benefited from the more robust assessment process which arises from centralising our resources. The quality of the review process is now second to none, and the close co-operation between the bodies has even enabled us to join forces to fund projects which might otherwise have failed to attract grants; this would have been unthinkable under the old partisan system. The AAGBI has been particularly pleased to involve the specialist societies, developing the vision of an overarching and high-profile funding system for quality research in anaesthesia and related fields.

ACTA

The Association of Cardiothoracic Anaesthetists was one of the first sub-specialist societies to join the NIAA. Involvement with the NIAA has seen our ACTA grant application process formalised centrally. The rigours of external peer review have greatly improved the quality of applications and the process of choosing the award winner. In the future we may see joint project grants across different societies benefiting a wider range of patients. Awareness within our society of the aims of the NIAA has led to increased interest in the area of research, the benefits of networks and an increase in applications for other multicentre grants.

APAGBI

The Association of Paediatric Anaesthetists of Great Britain and Ireland became a funding partner within the NIAA in 2011 and participated in Round One. As part of the NIAA funding round, the APAGBI was able to benefit from the centralised mechanisms for grant submission, allocation of peer-reviewers and the compilation of reviewer comments. In addition, a member of the APAGBI Scientific Committee joined members of other funding bodies in the final review and allocation of funding at the NIAA Grants Committee meeting. The centralised and standardised submission also made the application process easy and accessible for applicants. In addition, the ability for eligible grants to gain assistance from the NIAA in applying for NIHR adoption will be of particular advantage to successful grant awardees. The APAGBI hopes to continue this association with the NIAA, and participate in grant rounds as often as possible, based on the availability of APAGBI research funds.

ARS

Joining the NIAA has been very helpful for the Anaesthetic Research Society. Firstly, it has facilitated and expedited more robust review procedures for submitted grants. Secondly, the sharing of views between other NIAA members has improved standards across funded anaesthesia research generally. Finally, it has also enabled us to fund projects initially submitted to other societies and enabled other societies to fund good projects which the ARS was not able to fund.

BJA

The Board of the *British Journal of Anaesthesia* has always fully supported the concept of the NIAA. The Board's Grants Officer is an integral part of co-ordinating the peer review of all grants within the NIAA. By demonstrating the robust review of the grant applications and selection of those awarded, the NIAA has successfully secured network status for its partners from the National Institute for Health Research (NIHR). This means that considerable added value is attached to the grants. The BJA/RCoA grants are currently to a level of around £500,000 each year and we aim to continue this commitment to academic anaesthesia for future years. Coming under one umbrella organisation also brings considerable advantages arising as a result of scale.

DAS

The Difficult Airway Society is most likely the largest single specialist society in anaesthesia, with around 3,000 members. Through its main committee and annual general meetings, DAS supports research and audit, formulates clinical guidelines and provides advice to the profession as a whole on a range of matters relating to airway management. DAS joining the NIAA has been mutually beneficial to both organisations. Specifically, grants offered by DAS can now be managed in a more transparent and efficient manner via the NIAA grants system and, for clinical projects, can potentially be enhanced by the NIAA's partner status with the NIHR. The partnership with the NIAA also facilitates closer contact with other specialist societies.

NASGBI

The objectives of the Neuroanaesthesia Society of Great Britain and Ireland, as stated in its constitution, are to promote and advance education in, and the study of, the art and science of neuroanaesthesia and neurointensive care. The presentation of research has always been an important part of our annual scientific meetings with a session dedicated to research culminating in a named prize for the best paper. Joining the NIAA has enabled the society to provide funding for more complex research within the framework of an independent academic body. The major benefit for the future comes from the awarding of NIHR non-commercial partner status through our link with the NIAA. Clinical neuroscience research is often plagued by small studies providing inconclusive answers. Through the NIAA, we have for the first time a well-defined route by which meaningful NHS-wide research is feasible.

OAA

The grant awarding process is entirely transparent, ensuring that awards are made only after rigorous peer review, not only by representatives from the Obstetric Anaesthetists' Association, but also from non-obstetric anaesthetists. This results in an unbiased view regarding the quality and value for money of any application. In addition, all applicants receive constructive feedback after an open discussion between members of the awarding committee. Even though the OAA offers quite a generous grant for a sub-specialty society, there is the opportunity via the NIAA for further funding of projects through collaboration with other grant awarding bodies, and the OAA applications may benefit from this in the future. The NIAA has also been awarded partnership status by the

National Institute for Health Research (NIHR) and any OAA grant approved via the NIAA is eligible to apply for further support from the NIHR clinical research network. Finally, the majority of grant awarding anaesthetic bodies are now under the umbrella of the NIAA. By being part of this organisation the OAA believes that its own reputation as a credible organisation committed to supporting research in obstetric anaesthesia can only be enhanced.

SEA UK

The Society for Education in Anaesthesia (UK) was founded in 1999 to cater for the interests of anaesthetists who work in the field of medical education. It is a non-profit educational organisation with charitable status. Its aims include: improving skills in anaesthesia education, promoting educational research and updating the anaesthesia educator in new modalities of education.

Joining the NIAA has promoted educational research to a wider audience and provided SEA UK with a national platform for advertising our educational research funds. In addition, SEA UK has supported the process of other NIAA members with their awards and grants, as the proposals all have a generic component and many have an educational aspect.

Being part of the NIAA process means that there is a better overview of what anaesthesia education research is being planned and performed. In the future, with many societies being represented on the NIAA, there is the exciting possibility of combining grants in support of large scale commissioned research involving education and training of anaesthetists.

VASGBI

The Vascular Anaesthesia Society of Great Britain and Ireland regards anaesthetic involvement in collaborative clinical and basic science research as key to enhancing the care of vascular patients.

The management of vascular surgery patients is under scrutiny as never before. Quality Improvement Frameworks have recently been put in place for patients undergoing abdominal aortic aneurysm repair and amputation and in many regions there are proposals to centralise the provision of vascular services to a limited number of hospitals. Recent research indicates that anaesthetic care has an impact on long-term outcome in vascular surgery patients. Against this background having robust evidence to inform the care of vascular surgery patients is more important than ever.

The VASGBI has limited resources to support research and membership of the NIAA Research Council has brought benefits, including access to an externally managed peer-review process and representation on the NIAA grant awards panels whose diverse membership and skills provide an opportunity to develop collaborative links with other societies.

Research Priority Setting Exercise

Dr Simon Howell & Prof Jaideep Pandit

The National Institute of Academic Anaesthesia works to attract major research funding to support anaesthesia and related specialties. Between 2008–2009 the NIAA conducted a Research Priority Setting Exercise to identify research topics which would be of benefit to patients and inform clinical practice.

The two-stage exercise was supported by the RCoA, the AAGBI, the *BJA* and the Leeds Teaching Hospitals Trust. It was led by Dr Simon Howell and Prof Jaideep Pandit and modelled on the priority setting exercises undertaken by the Intensive Care Society. Dr Duncan Young, who led the first ICS exercise, also gave generously of his time and advice.

- **Stage One:** Letters were sent to all Fellows of the RCoA and members of the AAGBI, inviting them to identify important research questions in anaesthesia and peri-operative medicine that would benefit from being addressed by clinical research studies.

- **Stage Two:** The suggestions were sorted into broad research themes and a second questionnaire was sent inviting anaesthetists to rank them in order of importance.

A short-list of the questions submitted for the exercise can be found on the NIAA website at: ***www.niaa.org.uk/article.php?newsid=408***.

- **Results:** An expert panel made up of research active anaesthetists and representatives from the RCoA's Patient Liaison Group considered almost 2,000 responses.
  Five priority questions were selected and converted into EPICOT statements (Evidence, Population, Intervention, Comparison, Outcome, Time Stamp).
  Of these five statements, two were selected and submitted to the NIHR Health Technology Assessment Programme for consideration as commissioned research.

Statement 1: Exercise intervention in patients with abdominal aortic aneurysm disease.

Statement 2: 96-hour recovery programme in patients undergoing surgery for fractured neck of femur.

Courtesy of Peninsula College of Medicine & Dentistry

NIAA Health Services Research Centre

Prof Mike Grocott

The NIAA Health Services Research Centre (HSRC), located at the Royal College of Anaesthetists, was launched on 16th March 2011. The aim of the HSRC is to conduct high quality health services research in anaesthesia and related specialties and thereby improve patient care. Prof Mike Grocott has been appointed as the first Director and leads a board of experienced clinical researchers and administrators. New appointments include a post-doctoral health services researcher and two clinical fellows, with plans to appoint a statistician and IT specialist in the near future.

The definition of Health Services Research (HSR) is most easily stated as research directly involving patients or groups of patients but excluding early phase 'proof of principle' clinical studies. HSR is more formally defined as research with the aim of improving patient outcomes (safety, effectiveness and experience), and evaluating the organisation, management, finances, and delivery of healthcare. It encompasses clinical epidemiology and clinical trials to demonstrate the effectiveness of interventions (phase III, health technology assessment). Basic science (animal and 'bench-top') studies and early-stage safety and efficacy clinical trials (phases I & II) are not included.

Early strategic goals for the HSRC include initiating and co-ordinating large-scale clinical audits, methodological innovation in clinical measurement, and conducting and facilitating research to improve patient outcomes.

Clinical Audits

The development of high quality clinical registries of peri-operative risk and outcome is a defining project of the HSRC. We have partnered with two established peri-operative databases: the Emergency Laparotomy Network (ELN) and the Hip Fracture Peri-operative Network (HipFPN). In the short term, our shared aim is to integrate the registry elements of these databases through shared software, data definitions and analysis functions. Central to this will be the development of the Integrated Peri-operative Network (iPON) software.

In October 2011, the Healthcare Quality Improvement Partnership (HQIP) announced that Emergency Laparotomy was one of 11 new national audits to be commissioned. This will be the first funded national audit focusing primarily on peri-operative care (as opposed to surgical factors or critical care). It is a great success for the ELN team, led by Dr Dave Murray, and a rewarding product of the close collaboration on this proposal between the ELN and the HSRC.

The HSRC has also taken over responsibility for the highly successful RCoA National Audit Projects (NAPs) and Dr Tim Cook has joined the HSRC Executive Board to oversee this activity. Prof Jaideep Pandit has been appointed to lead NAP5: 'Accidental Awareness during General Anaesthesia'. A rolling programme of NAPs is planned, guided by an external review of the programme to date.

Clinical Measurement

Description of quality in anaesthesia is currently limited by a lack of valid specific measures. In order to address this the HSRC has initiated a programme of work to define current use of measures, identify areas of need and then develop new measures as required. This will address measures of safety, effectiveness (patient and clinician reported), patient experience/satisfaction, peer and patient feedback as well as risk adjustment prior to surgery. To this end a working group on quality measures has been convened. In parallel a national survey of the use of quality measures is being conducted and a suite of systematic reviews in this area is nearing completion.

Research to Improve Patient Outcomes

An early success of the HSRC has been the establishment of the UK National Peri-operative Clinical Research Forum. The forum brings together active researchers to collaborate on the development and delivery of peri-operative research. The forum is modelled on the successful critical care research forum and early priorities include expanding the portfolio of studies in peri-operative medicine, working together on major grant applications and supporting the development of research infrastructure.

For more information, please go to: ***www.niaa-hsrc.org.uk/***.

Systematic reviews

Dr Ramani Moonesinghe

Funded in part by a grant from the Frances and Augustus Newman Foundation, the HSRC has undertaken a series of systematic reviews relating to risk prediction and outcome measurement for major surgery.

Two systematic reviews of risk prediction scoring systems have been undertaken and are being submitted for publication at present: one examines risk scores which predict adverse postoperative outcomes in mixed cohorts of non-cardiac surgical patients, and the other looks specifically at cardiac risk scoring systems. A number of reviews examining the predictive precision of scoring systems in sub-groups of surgical patients (e.g. colorectal surgery, vascular surgery) will follow these in due course. A separate systematic review of outcome measures has focused on patient satisfaction scores in patients undergoing any type of anaesthesia or anaesthesia-related intervention. We hope that this will be published in early 2012.

The Hip Fracture Peri-operative Network and the HSRC

Dr Richard Griffiths

The hip fracture anaesthesia network was launched in 2007, on the NHS networks platform. The specific aims were to get anaesthetists, interested in hip fracture, to collaborate and share their experience and to encourage close co-operation with other medical specialties.

In 2011 the network underwent a name change, to Hip Fracture Peri-operative Network, to reflect the growing number of orthogeriatricians who have joined the network.

The HSRC offers the network the opportunity to engage in national research and audit. The National Hip Fracture Database (NHFD) has signalled that some anaesthesia projects are likely to be on the agenda for 2012–2013. This is a big opportunity for HSRC to tap into approximately 7,000 patients per month. The project will be led by Dr Stuart White from Brighton, the network research and audit lead, working closely with NHFD and HSRC.

The network now has over 200 members and can be reached via NHS networks: ***www.networks.nhs.uk/nhs-networks/hip-fracture-anaesthesia***.

Emergency Laparotomy Network

Dr Dave Murray

The Emergency Laparotomy Network was launched in January 2010. It is run by a steering group consisting of Dave Murray (Chair, Middlesbrough), Carol Peden (Bath), Adam Pichel and Simon Varley (Manchester), Dave Saunders (Newcastle) and Iain Anderson (Salford). Membership is open to anybody involved in the care of emergency laparotomy patients. We currently have over 160 members from over 100 acute NHS Trusts in the UK.

The Network's broad aims are to bring together clinicians from relevant specialties in order to improve outcome in this group of patients. The first steps have been to carry out a prospective multicentre audit. This finished in early 2011, and recruited over 2,000 patients from 37 Trusts in the UK. At present, we are currently analysing the results, but preliminary analysis suggests a 17% 30-day mortality, with wide variation between Trusts. Admission to critical care is also very variable ranging between 25% and 95%. Further analysis will provide additional information such as seniority of clinical staff and other process measures.

The results of this audit will act as a baseline for subsequent quality improvement. In addition, we are exploring the development of a continuous prospective registry that aims to capture all patients undergoing emergency laparotomy.

National Audit Projects

Dr Tim Cook
College Advisor for National Audit Projects

The HSRC and NAPs

National Audit Projects (colloquially known as NAPs) 1–4 were supported and managed by the Professional Standards Department of the Royal College of Anaesthetists (RCoA). The level of administrative and logistical support provided by Professional Standards was considerable with Mr Charlie McLaughlan providing College advice and Ms Shirani Nadarajah devoting a significant proportion of her professional time to the project.

In 2011 the Health Services Research Centre of the NIAA (HSRC) was launched with the aim of being a hub for world-class anaesthesia research. The responsibility for management of the NAPs has been transferred to the HSRC with oversight by the NIAA Board. The author (who was College project lead for NAP3 and NAP4) is now the co-ordinating lead for the NAP program: future NAPs will require project leads, separate to this role.

NAP4: Major Complications of Airway Management in the UK

NAP3 and NAP4 examined infrequent events (NAP3 – permanent harm caused by neuraxial anaesthesia, NAP4 – major complications of airway management in anaesthesia, emergency departments and intensive care) and attempted to determine an incidence of such events. Both projects have led to changes in practice and likely contributed to improved care in the areas studied.

NAP4 was conducted by the RCoA in partnership with the Difficult Airway Society (DAS). The project ran from planning in 2007 and data collection in 2008–9 to publication in March 2011.

NAP4 was launched on March 30th with both a full College Launch day and the publication of two papers in the *British Journal of Anaesthesia*. These two papers were accompanied by editorials in the *BJA* and soon after in *Anaesthesia*. The full NAP4 Report (24 chapters and over 200 pages) is the largest NAP to date. The launch day was oversubscribed requiring a second 'launch' to be run in July (in turn also over-subscribed). Media interest in

the project included coverage on the BBC health website, the *British Medical Journal* news section and numerous international health-news websites.

Professional interest in the project was such that the full report was downloaded more than 25,000 times in the four months after publication and a total of 9 e-letters were submitted to the *BJA*. The review panel members have presented the results of the report to more than 30 meetings since publication.

This article is not the place to describe the findings in any length as these are available in full on the RCoA and *BJA* websites. Further links: **Census** ***bja.oxfordjournals.org/content/106/2/266.full.pdf+html***; original paper re **Anaesthesia** ***bja.oxfordjournals.org/content/106/5/617.full.pdf+html***; original paper re **Intensive Care and Emergency Departments** ***bja.oxfordjournals.org/content/106/5/632.full.pdf+html***.

The findings and recommendations touch on almost all aspects of airway management in anaesthesia, intensive care and the emergency departments. Perhaps most notable amongst the findings was the markedly higher frequency of airway events occurring in intensive care compared to anaesthesia settings and their poor outcome. The strongest recommendation was that capnography be universally used for all patients dependent on mechanical lung ventilation. This recommendation was reinforced in a letter sent by the College President to all NHS Trust Chief Executives and has subsequently been adopted by several relevant national or European bodies.

The Future of NAPs

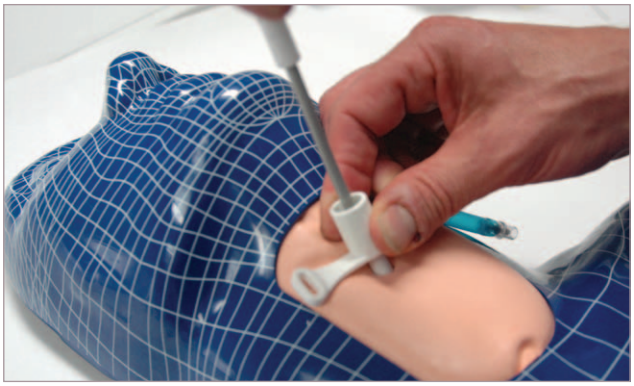
A model similar to those used for NAP3 and NAP4 focusing on a rare complication of anaesthesia appears suitable for subsequent NAPs . Events that occur either too rarely or too frequently may be difficult to study and this is important in selecting topics. The intention is to continue the NAP program with a new NAP every 18 months to two years.

The last two NAPs have benefited from bi-partite partnerships with other organisations (NAP3: National Confidential Acute Pain Critical Incident Audit of the British Pain Society and NAP4: Difficult Airway Society). While many other partner organisations contributed significantly to both projects another primary partner is likely to be sought for future NAPs.

NAP5

In late 2010 a call was put out for proposals for NAP5, via advertisements in anaesthetic journals and on the College website.

There were a total of 43 proposals covering 35 separate topics (see HSRC website for full details). Several were suggested on multiple occasions including awareness, sedation, peripheral nerve blockade, anaphylaxis and central venous cannulation. After full and detailed consideration of these proposals it was agreed with College Council that NAP5 would be on the topic of Accidental Awareness during General Anaesthesia. The project has been strengthened by joint and equal partnership for this NAP between the RCoA and the Association of Anaesthetists of Great Britain and Ireland (AAGBI), meaning that both of the largest groups in UK anaesthesia are fully behind this project. In September the post of NAP5 lead was appointed by competitive interview with Prof Jaideep Pandit being successful amongst a very strong field of applicants. The statutory permissions to perform the project have been secured, and the development of necessary data collection processes and recruiting the network of NAP5 local co-ordinators is well under way. The NAP5 local co-ordinators will form the bedrock of a system to identify such cases and lodge anonymised case reports with the project team. The topic of 'awareness' is obviously of great importance to patients and anaesthetists alike and we hope the enthusiasm seen when recruiting for local reporters for NAP3 and NAP4 will once again ensure that all hospitals in the UK agree to participate in NAP5. Both the AAGBI and RCoA fully support the importance of the role of NAP5 local co-ordinator and that it is appropriate to allocate SPA activity to this role. NAP5 will start in Summer 2012.



NAP6 and Onwards

The future of NAPs is dependent on the success of NAP5 and subsequent projects. These in turn depend on the enthusiasm and active involvement of the anaesthetic community. The process of tendering for NAP5 produced a number of high quality proposals which might be suitable for NAP6 and beyond. Formal requests for re-submissions are likely in the next 12–18 months to enable adequate forward planning.

Potential Changes to NAPs

Compared to equivalent research projects recent NAPs were delivered on very modest budgets and can be considered to have been excellent value for money. While most costs were met by the College, significant contributions were made by the main partner organisations and also by supporting organisations. The College and HSRC are currently examining how the quality of future projects can be maintained and whether any processes including those of engagement and dissemination can be improved. A formal review of the NAP project is currently underway.

Supporting Training and CPD in Academic Anaesthesia

Prof Robert Sneyd & Dr Robert Sanders

The NIAA and its partner organisations recognise that academic trainees represent the future of our research and education mission.

We take a broad view and engage with trainees interested in research, those doing research whilst in a clinical role and those engaged in full-time research.

An individual may be:

- 'Research-interested' in an NHS post
- Developing or engaged in a research project whilst in an NHS post
- Working with partial time allocation on a research project whilst in an NHS post
- Employed on 'soft money' or through a private provider (i.e. private hospital) whilst working on a research project
- Full-time or part-time registered for a higher degree
- Working as an Academic Clinical Fellow, ACF
- Working as a Clinical Lecturer.

Events

The NIAA has run three, one-day academic trainee events which combined networking, poster displays, and the opportunity to meet with senior academics and younger 'role models'. These have been successful and are worth continuing on an annual basis.

In addition to the NIAA academic trainee days, several NIAA partners offer poster competitions embedded within their education programmes. These include the Association of Anaesthetists of Great Britain and Ireland (AAGBI) at the annual congress in September, the AAGBI at the GAT Annual Scientific meeting, the Royal College of Anaesthetists at the summer congress and the OAA and the APAGBI at their major meetings. This could be developed through discussions with those organisations and suggesting dual badging of the poster sessions (following the model of the *BJA*/NIAA Research Methodology Days). Importantly, the organisation and responsibility for these will remain squarely within the partner organisations.

For the 'research-interested' anaesthesia trainee, Research Methodology Days are delivered by the *British Journal of Anaesthesia (BJA)*. These one-day courses comprise an introduction to research methodology, critical reading, study design and analysis, and this is supported by hints on scientific writing and presentation at meetings.

The quality of research presented at the academic trainee days has been high and we anticipate that this will go from strength to strength. Anaesthetic trainees are attracting funding from the major funding organisations such as the Medical Research Council and the Wellcome Trust as well as from anaesthetic sources. Not only does this indicate the quality of the personnel and ideas that are being developed but this also shows that academic anaesthesia is flourishing. Our mission is to continue this growth and spread the word to encourage research-interested trainees to come forward. To this end the NIAA has established a contact list to allow dissemination of news about events, funding opportunities and research jobs to interested parties. Please visit the NIAA website ***www.niaa.org.uk/*** and join the mailing list by clicking 'Register with us' on the Homepage.

Future Activities

There is clearly scope for additional trainee related activities to be developed by the NIAA. They should be seen as a 'work in progress'. We are approaching writers of successful grant applications seeking permission to post some good examples on the web for others to study and hopefully emulate. We are also exploring the possibility of running grant writing workshops.

Trainee Profiles

Dr Brijesh Patel & Dr Robert Sanders

Dr Brijesh Patel MRCP FRCA – Wellcome Trust Clinical Research Fellow

I initially trained in general medicine at the Royal Postgraduate Medical School where I was first exposed to the concept of a clinician scientist. I subsequently completed an anaesthetic SHO rotation at Guy's and St Thomas' Hospital but got embroiled in the first Medical Training Application Service (MTAS) round. However, I realised an amazing opportunity – the NIHR combined clinical academic training programme.

Through the NIHR academic clinical fellowship, I developed a London research forum, attained an NIAA grant and most recently a place on the Imperial College Wellcome Trust Clinical PhD programme. My PhD investigates the cellular and molecular mechanisms governing the inflammation and resolution of lung injury.

In short, attaining an academic NTN has allowed me to work with some amazing and inspiring people and, most importantly, aspire to something special.

Dr Robert Sanders FRCA

I am an Academic Clinical Fellow (Specialist Registrar) and Medical Research Council Clinical Training Fellow based at the Imperial School of Anaesthesia/Imperial College London. Currently, I am undertaking a PhD, studying the immunological effects of benzodiazepines. Preliminary data indicate that benzodiazepines impair innate immunity increasing the risk of death from infection. I also have a profound interest in peri-operative care. Following grant funding from an AAGBI/Anaesthesia Departmental Project Grant, I have instigated an epidemiological study of independent preoperative predictors of outcomes in orthopaedic and vascular surgery. The data so far emphasise that different pre-operative patient factors exert influence for differing procedures. Importantly, new data regarding the influence of the timing of surgery following an acute coronary syndrome have emerged.

NIAA Study Day for Academic Trainees 2011

Programme Highlights

- Workshop sessions on designing a research project and a series of lectures covering topics from 'Health Services Research' to 'Getting research done in a full-time NHS consultant post'
- Poster displays and the award of the President's Award for Outstanding Achievement
- Open forum: an opportunity for speakers to engage with the NIAA and speakers.

Military Anaesthesia

Colonel Peter Mahoney OBE

The Department of Military Anaesthesia and Critical Care was established in 2008 with the appointment of the first UK Defence Professor of Anaesthesia, Col Peter Mahoney. The focus of the department is on conflict-related research and clinical delivery, aimed at enhancing the care of injured UK military personnel, but also on sharing this knowledge with the wider NHS community. In collaboration with the NIAA a number of honorary academic positions have been established.

Aims

- Establish working relationships with the RCoA, AAGBI and NIAA.
- Establish Defence Anaesthesia as one of the key military specialties liaising with the Combat Casualty Care Programme at the Defence Science and Technology Laboratory (DSTL) Porton Down.
- The joint honorary appointments between the RCoA and Ministry of Defence of Lecturers and Senior Lecturers in Military Anaesthesia and the support of the NIAA in this are gratefully acknowledged. These have allowed the development of a virtual department with the academic appointees working at their host NHS Trusts but pursuing departmental goals.

Academic Appointments

The honorary appointments have facilitated negotiations with the military and the NHS to develop job plans with an academic component, in turn giving people space to develop specialist interests, plan and deliver research and enter higher degree programmes. The end state should be that the candidates for the post in 2014 will compete with strong CVs including either an MD or PhD. Current MD topics include early versus late use of blood products in a model of blast and ballistic trauma, and investigations into the nature of blast brain injury. Proposed topics include different aspects of acute lung injury (toxic and blast) and human factors in high stress environments.

Publications

The lecturers and senior lecturers have been encouraged to help others develop their writing skills. This has been demonstrated by collections of articles within the *Journal of the Royal Army Medical Corps*.

These include:

- *Focus on Nutrition* **Volume 154; No 4; Dec 08**
- *Focus on Pain* **Volume 155; No 1; Mar 09**
- *Focus on Intensive Care* **Volume 155; No 2; Jun 09**
- *Defence Anaesthesia: Conflict Research and Clinical Delivery* **Volume 156; No 4; Dec 10. Suppl. 1.**

The above can all be accessed online at ***www.ramcjournal.com***.

Many of the authors from the above publications are part of the group working with the US Military and the **Borden Institute** on a joint US-UK *Handbook of Combat Anaesthesia* (***www.bordeninstitute.army.mil/index.html***).

Others contributed to a special military edition of *Phil Trans B of the Royal Society*. ***rstb.royalsocietypublishing.org/site/2011/military_medicine.xhtml***

Operational Deployments

The department has (and must maintain) a clear military focus. This requires personnel to be actively looking after military patients either on deployed operations, in the Royal Centre for Defence Medicine (RCDM) Birmingham or within the Rehabilitation Service at Headley Court. Recent deployments by department members have included the Medical Emergency Response Team (MERT) in Afghanistan, Critical Care Support Team moves from Afghanistan, operations in and around Libya and medical support to Counter Piracy operations. This does mean that the CVs and background of the military team will differ from those of conventional civilian academic contemporaries.

Honorary Lecturer Profiles

Lt Col Dominic Aldington

Although originally a consultant anaesthetist I now spend all of my clinical time 'in pain'. I work in the NHS clinic in Oxford where for two and a half years I was the clinical lead. I also work at the Defence Medical Rehabilitation Centre, Headley Court, the Royal Centre for Defence Medicine in Birmingham, and I have started clinics in the garrisons of Catterick, Tidworth and Edinburgh.

I am interested in all aspects of pain, but particularly the management and prevention of chronicity. I have the current role of overseeing the pain management processes of the Defence Medical Services, from point of wounding to the point of leaving the services. Although I tend to publish in the *J Royal Army Med Corps* as that is where my target population are, I have also been published in *New Eng J Med*, *Arch Internal Med*, and *Pain*. I have been a reviewer for these journals as well as for *The Lancet*.

Lt Col Tom Woolley

I am a consultant anaesthetist with a special interest in trauma and hepatobiliary anaesthesia with a research interest in trauma resuscitation and trauma induced coagulopathy. My clinical work is at Derriford Hospital, Plymouth. I am currently reading for an MD at the Defence Science and Technology Department, Porton Down, am registered at Newcastle University and am an Honorary Foundation Senior Lecturer appointed through the Royal College of Anaesthetists.

Wg Cdr Simon Turner

I am a consultant in anaesthesia and intensive care medicine working at the General Infirmary at Leeds. As a trainee I was a clinical lecturer and undertook an MD investigating the effects of ischaemia reperfusion injury on distant organ dysfunction. Upon completion of my anaesthetic training I joined the Royal Air Force.

My current research interests include enteral nutrition and renal dysfunction in victims of ballistic trauma. I organised the 'Academia and Armed Conflict' conference held at the Royal College and am on the editorial board of the *Journal of the Royal Army Medical Corps*.

Surg Cdr Jane Risdall

I am a consultant in anaesthetics and critical care in the Royal Navy. My sub-specialist interests are in neuroanaesthesia and intensive care and I hold an Honorary Consultant Appointment at Addenbrooke's Hospital, Cambridge. I have also been appointed as an Honorary Research Fellow in the University Department in Cambridge and am conducting research into blast brain injury, jointly with DSTL. My other areas of interest include diving and hyperbaric medicine and Critical Care Air Support Team transfers (both strategic and maritime).

Department of Health Enhanced Recovery Partnership Programme

Prof Monty Mythen, National Clinical Lead

Enhanced Recovery after Surgery (or Fast Track) is a bundle of care intended to allow patients to recover more quickly from major surgery and thus leave hospital earlier. It is multi-professional and multi-modal applying best evidence-based practices such as avoidance of bowel prep and NG tubes, goal directed fluid therapy, early mobilisation and feeding facilitated by short acting anaesthetic agents and regional analgesia. It is continuously evolving and will continue to do so as novel techniques and therapies emerge. The DoH Enhanced Recovery Partnership Programme ran for two years and employed a change management strategy that relied on sharing best practice, consensus, spread and adoption with feedback of outcomes and bench marking. Each participating NHS Trust identified local champions (including doctors, AHPs and managers) who drove the process. The care elements of our National Programme were agreed in a series of consensus meetings and were based on current practice in some hospitals. The conclusions and guidance on effecting change were published in an Implementation Guide along with a summary of published evidence that can be found at ***www.improvement.nhs.uk/enhancedrecovery***.

Fellows and members of the Royal College of Anaesthetists and the Association of Anaesthetists of Great Britain and Ireland were notable leaders in all local and regional programmes and the National Leadership team included myself, Kerri Jones, Martin Kuper and Mike Swart. As of February 2011, >85% of NHS Trusts were reported to have an Enhanced Recovery Programme at some stage in development. Nationally, length of stay had fallen, producing financial savings to the NHS. The NIAA played a key role in the development of the web-based data collection system used to track implementation in a selected number of trail-blazing Trusts (at least one per SHA). The NIAA Health Services Research Centre (HSRC) was asked to advise on data capture and in particular the Post Operative Morbidity Survey (POMS), developed and validated by the Director of the HSRC, Prof Mike Grocott, was used to record outcomes. The Enhanced Recovery Partnership will continue to support the spread and adoption of the programme in the UK and it is hoped that the NIAA will continue to support on-going and planned research into what is probably the biggest change in peri-operative care in the lifetime of our College.

Anaesthesia, Peri-operative Medicine and Pain Management

Prof Martin Leuwer

The National Institute for Health Research (NIHR) promotes excellence in research and the NIAA was awarded NIHR non-commercial partner status in 2009. Many studies funded by the NIAA Research Council are adopted on to the NIHR portfolio and are eligible for support from the NIHR Comprehensive Local Research Networks (CLRNs). The work of the CLRNs is supported by National Specialty Groups and the 'Anaesthesia, Peri-operative Medicine and Pain Management' Specialty Group's progress report for 2010 follows below.

Achievements

1) Increasing numbers. Considerable progress has been made in terms of increasing the number of studies on the Specialty Group's portfolio, with a particular focus on organising a UK contribution to large, clinically relevant international multi-centre trials addressing 'Peri-operative Medicine', e.g. 'Vision' and 'EuSOS'. This success reflects our strategic aim of activating and utilising the immense potential of the community of anaesthetists (about 10,000 specialists in the UK), whereas in the past the majority of studies have been single-centre projects.

2) Industry studies. Industry requests for study adoption have successfully been encouraged and an effective way of processing them has been organised.

3) Geographical coverage has been improved (Wales, Sussex and Surrey).

4) Excellent completeness of reporting has been achieved (1st rank).

This report was considered by a Review Panel, chaired by Prof Steve Smye (Director, Comprehensive Clinical Research Network). The Panel gave the Anaesthesia, Peri-operative Medicine and Pain Management Specialty Group an 'Amber' rating.

A number of areas of impact which the Specialty Group has made and examples of good practice were highlighted:

- A growth in membership and good engagement of most members;
- An expansion of the remit of the Group to include pain management and a subsequent increase in the number of studies on the Group's portfolio, creating more critical mass;
- Efforts made to raise the profile of the Group through publications, presentations and the printing and distribution of a flyer;
- Evidence of the Group making an impact on specific ongoing studies (e.g. BALTI2) as well as the set up of new studies (e.g. EuSOS);
- Excellent and productive relationships with the specialty through the NIAA which is promoting the interface between study development and delivery.

It was recommended that the Specialty Group needs to address the following areas over the next year:

- Further improve engagement of members ensuring that all members attend national meetings and undertake their local roles effectively;
- Continue to focus on delivering individual studies to time and target through effective working arrangements between national meetings;
- Continue to improve the quality of the data on the portfolio database through targeted efforts by the Chair's local support (see below);
- To build on the relationship with key stakeholders to promote research activity in the specialty and increase the number of studies on the Group's portfolio which can be successfully delivered in the NHS;
- To proactively engage industry to increase the number of commercial studies on the portfolio;
- To continue efforts to raise the profile of the Group through publications and other forms of regular communication with key stakeholders.

BOC Professorship of the Royal College of Anaesthetists (2006–2011)

Prof David K Menon

The aim of the award was to support academic activity and nurture a senior clinical academic in the specialty. I am delighted to say that we have been successful in both aims.

The research has informed our understanding of how anaesthesia modulates cognitive processing and neural system interactions, and provided clinically relevant data on the use of infusion devices in MR environments. Our results have also had implications for research in the vegetative state and resulted in a re-examination of concepts in basic linguistic neuroscience.

Dr Anthony Absalom, who was employed by the grant, made substantial academic progress over its course, and was appointed to a Professorship of Anaesthesia at the University of Groningen, Holland, in 2010. In addition, the work funded by the grant supported a Wellcome Trust Clinical Research Fellowship (Dr Ram Adapa). Dr Adapa has now completed his PhD and was recently appointed to an NIHR Academic Clinical Lecturership in our Department.

These functional imaging studies of consciousness and anaesthetic action are closely woven into our overall fabric of research. Grants from the Medical Research Council, Wellcome Trust, EU Framework 7 Program and NIHR support research in traumatic brain injury (TBI). The focus of these studies has been to relate acute pathophysiology in the injured brain to tissue fate and clinical outcome. These studies of clinical pathophysiology in TBI are closely allied to an emerging collaboration based at the Defence Science and Technology Laboratory, which involves the Foundation

Senior Lecturer in Military Anaesthesia & Critical Care, a post occupied by Surgeon Commander Jane Risdall. Dr Risdall's work focuses on the role of the HIF system in blast TBI, following on from earlier work undertaken in our group on a contusion model of TBI. It is hoped that the results of these studies may have clinical outputs that can be rapidly translated to the care of servicemen.

A second major theme of research uses functional imaging to define the neuroanatomical basis of late cognitive deficits. Perhaps the strand of TBI research that relates most closely to the BOC Professorship involves our studies of residual cognitive function in the vegetative and minimally conscious states. An early key publication (Menon et al. *The Lancet* 1998; 352:200 [PMID: 9683212]) showed that patients in a vegetative state can retain complex cognitive processing. Subsequent papers from our Impaired Consciousness Research Group at Cambridge have developed this theme, and conclusively shown that volitional control of cognition may be preserved in patients who are clinically vegetative.

Our broader expertise in cerebrovascular physiology and cognitive neuroscience supported a collaboration with the Royal Air Force Centre for Aviation Medicine, focusing on the impact of high altitude helicopter flight on cerebrovascular physiology and cognition, and forming the basis for a PhD programme for an RAF aviation medicine trainee.

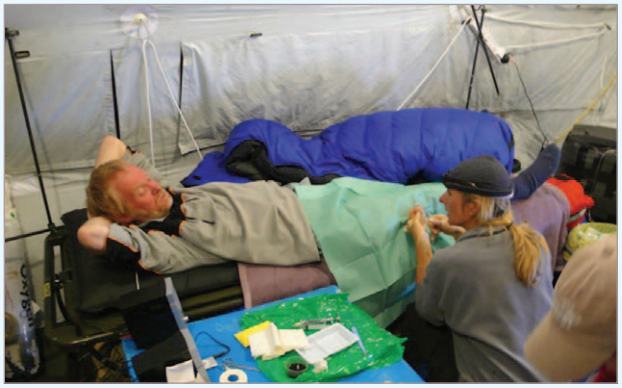
Over the last decade the Division has produced 10 PhD and MD degrees, hosted 16 Academic Foundation Year rotations in peri-operative care, and created an annual appointment to two new NIHR Academic Clinical Fellowships (ACFs) and two new NIHR Academic Clinical Lecturerships.

Caudwell Xtreme Everest: A field of human adaptation to hypoxia

Dr Denny ZH Levett, for the Caudwell Xtreme Everest Research Group

The Caudwell Xtreme Everest (CXE) Medical Research Expedition took place during the spring and early summer of 2007. An AAGBI Research Fellowship provided valuable core funding to support Dr Denny Levett, one of the two deputy research leaders. This allowed the team to seek additional grants and sponsorship for other research costs. The aim of CXE was to understand inter-individual differences in adaptation to progressive sustained environmental hypoxia (low oxygen levels) in order to understand more about variation in patient responses to hypoxia.

CXE is the largest prospective altitude study of healthy volunteers ever conducted and involved 222 subjects being investigated by more than 60 field investigators over three months. Subjects were studied before and during ascent to Everest Base Camp (5300m) and subgroups were studied at altitudes up to 8400m. The translational research goals of CXE are focused on the development of novel diagnostic and therapeutic interventions for patients in whom hypoxia is a feature of their illness, in particular critically ill patients on the intensive care unit.



Courtesy of Caudwell Xtreme Everest

Courtesy of Caudwell Xtreme Everest

CXE was conducted safely and effectively with more than 90% of planned testing completed. The results have been published in high profile journals including the *New England Journal of Medicine*, *FASEB Journal*, *Journal of Cerebral Blood Flow and Metabolism*, *Experimental Physiology*, *PlosOne*, *Critical Care*, and *Anaesthesia*. Novel findings arising from CXE include the importance of the microcirculatory function and the role of nitric oxide metabolism in adaptation to hypoxia and the development of novel biomarker panels. Studies to translate these findings into patient benefit have already commenced and have been funded by the UK National Institute for Health Research.

Photo by Pavel Novak

Success Stories

Courtesy of Plymouth Hospitals NHS Trust

2008 Round 1 – AAGBI Departmental Project Grant

Randomised controlled trial of intra-operative goal directed fluid therapy in aerobically fit and unfit patients having major colorectal surgery

Principal Investigator: Dr Gary Minto,
Plymouth Hospitals NHS Trust

179 patients scheduled for surgery were characterised as aerobically 'Fit' (n=123) or 'Unfit' (n=56) on the basis of their performance during a Cardiopulmonary Exercise Test (CPET). Within these aerobic fitness strata, patients were randomised to oesophagael doppler monitor (ODM) guided intra-operative Goal-directed Fluid Therapy (GDT) or a standard fluid regimen. Times to discharge readiness were a median of 2 days longer in GDT than Control patients but did not reach statistical significance. Fit GDT patients had a significantly increased time to Readiness for Discharge (RfD). This finding is important since it provides an alternative view of intra-operative goal directed therapy.

Success Stories

2008 Round 1 – BJA/RCoA Project Grant

Modelling complex behavioural co-morbidities in neuropathic pain

Principal Investigator: Prof Andrew Rice, Imperial College London

Pain is a complex experience involving both sensory and emotional aspects. Neuropathic pain is a prevalent form of chronic pain associated with nerve damage. Co-morbidities such as anxiety and depression are frequently observed in neuropathic pain patients. We have demonstrated neuropathy related dysfunction in neuropathic pain. Further, we have demonstrated that behavioural dysfunction can be reversed by analgesic drugs. This offers a novel route for the assessment of analgesic drugs and for the elucidation of the mechanisms driving neuropathic pain.

2008 Round 1 – BJA/RCoA Project Grant

Polymorphisms of SP-A and SP-D in patients with ventilator associated pneumonia

Principal Investigator: Prof Nigel Webster, University of Aberdeen

Surfactant protein (SP) -A and SP-D may have a role in the development and outcome from ventilator associated pneumonia (VAP) because of the effects of these proteins on the immune system and clearance of bacteria from the lung. Polymorphisms in the SP-A and SP-D genes may influence expression and/or function of SP-A/SP-D and hence development, disease progression and/or outcome from VAP. We have now collected the samples for this study and are currently analysing them. We hypothesise that a specific genotype or haplotype will be associated with development, progression or outcome of VAP and knowledge of this may help with prevention or treatment of this important condition.

Success Stories

2009 Round 1 – The OAA Project Grant

United Kingdom Obstetric Surveillance System (UKOSS) study of the incidence of obstetric epidural haematoma and abscess

Principal Investigator: Dr Felicity Plaat, Queen Charlotte's and Chelsea Hospital, London

Neuraxial techniques are the most common anaesthetic procedure performed on pregnant women and are generally very safe. However, vertebral canal abscess and haematoma are feared consequences and consent is routinely taken. The true incidence of these complications in modern practice is unknown, particularly with the potential effect of the increased use of thromboprophylaxis. The bulk of available evidence is not contemporary.

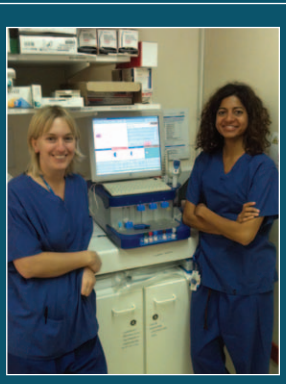
This study will look at the incidence of these specific complications and associated factors over a four-year period. This will build on the NAP3 audit with a longer time frame and more clinical detail. Currently submitting for ethical approval.

2009 Round 2 – AAGBI/Anaesthesia Small Research Grant

Coagulation changes following hepatic resection

Principal Investigator: Dr Susan Mallett, Royal Free Hospital, London

Prothrombin time (PT) and international normalised ratio (INR) typically become elevated following major hepatic resection. We postulated that this increased PT-INR may not truly reflect a bleeding diathesis following hepatic resection. In this prospective observational study of 50 patients undergoing major hepatic resection we found



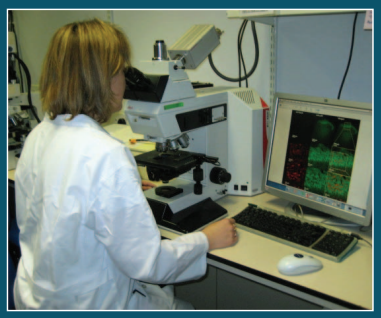
that despite significant abnormalities in PT-INR postoperatively, viscoelastic tests and thrombin generation remained within normal limits suggesting intact coagulation. Reduction in procoagulant factor levels was balanced by a similar fall in anticoagulant levels and supports the theory that haemostasis remains intact in these patients despite a raised INR.

2009 Round 2 – BJA/RCoA Project Grant

Opioid analgesia for neonatal surgery: long term impact on responses to future injury and analgesic efficacy

Principal Investigator: Dr Suellen Walker, Great Ormond St Hospital for Children, London

Opioids are the mainstay of peri-operative analgesia, but there are significant age-related changes in opioid pharmacodynamics that influence efficacy and side-effects. We have shown that neonatal exposure to morphine does not increase neuronal apoptosis or alter sensory function, and are now assessing if early exposure alters receptor distribution and functional sensitivity to opioids in later life. In addition, the ability of opioids to modulate acute and persistent effects of neonatal surgical injury is being evaluated. These preclinical data will further inform the choice of analgesic regimens for peri-operative analgesia in neonates and infants.



Success Stories

2010 Round 1 – BJA/RCoA Project Grant

Effect of adrenergic drugs on microvascular function in a laparotomy model

Principal Investigator:

Dr Rupert Pearse, Barts & The London School of Medicine & Dentistry

There is a growing body of evidence that microvascular dysfunction may play an important role in the evolution of postoperative complications. Both acute and chronic disease may impair the function of microvessels which play a key role in gas exchange, nutrient transfer and inflammation.

For many years, doctors have administered adrenergic drugs to surgical patients to maintain haemodynamic stability. Recent evidence suggests these agents may have specific actions on the microcirculation, leading to changes in tissue blood flow and oxygenation as well as inflammation. The objective of our work is to better understand the clinical applications of these less well recognised actions of adrenergic drugs.

2010 Round 2 – DAS Project Grant

A new approach to predicting difficult tracheal intubation

Principal Investigator:

Dr Peter Charters, University Hospital Aintree

The field of predicting difficult laryngoscopy and intubation remains clouded with as yet no satisfactory method for either. This study concerns a novel method for prediction based on a machine learning programme. The 'Predictor' will be added to the 'Aintree Difficult Airway Management' (ADAM) website to allow continuous data entry and updating.

The literature review has been completed and the inclusion list of the factors relevant to predicting difficult intubation has been finalised. The algorithm based on these factors has been started by our computer colleagues at Imperial College. The Ethics submission for the study is almost complete and Dr McDonald is due to attend a local 'Good Clinical Practice Course'. This project has needed to fit in with a major upgrade to the 'ADAM' website itself and related further clinical projects relevant to this study.

Success Stories

2009 Payne Stafford Tan Award

A pilot study comparing Glidescope and Storz videolaryngoscopes under simulated normal and difficult airway conditions in paediatric manikins

Dr Dom Hurford,
Anaesthetic Registrar, Severn Deanery

The NIAA supported my research presentation at the Difficult Airway Society conference in Perth 2009. I received a research grant from the NIAA in November 2009 to enable me to present the work Dr M White and I had just completed: 'A pilot study comparing Glidescope and Storz videolaryngoscopes under simulated normal and difficult airway conditions in paediatric manikins'. A grant like this helps not only to perform these small research projects but also to promote ideas and educate colleagues.

2009 Sargant Fund

Doing it large in the USA

Dr Suzi Lomax,
Royal Surrey County Hospital Foundation Trust

As part of an advanced training module in bariatric anaesthesia in my final SpR year, I organised an observership under Prof Ortiz, lead anaesthesiologist for bariatric surgery at Massachusetts General Hospital (MGH) in Boston, a level 1a Bariatric Surgical Centre ranked as one of the top five hospitals in the USA. This was supported by a travel and educational grant from the NIAA and enabled me to gain expertise in the management of these complex cases.

I absorbed a phenomenal amount of detail regarding the peri-operative care of these patients whilst at MGH, but also gained experience of the training and practice of anaesthesia in another healthcare system. On my return, this culminated in my working with consultant colleagues in the development of local guidelines for the anaesthetic management of such cases for the new bariatric service in Oxford.

Maurice P Hudson Prize Winner 2009

Can't intubate, can't ventilate! A survey of knowledge and skills in a large teaching hospital

Dr Lesley Green,
Gartnavel General Hospital, Glasgow

This work was undertaken in the earlier part of my career as a Specialist Registrar and was submitted for and won the Maurice P Hudson prize in the last year of my training. It was the only full article on the research page on my CV when applying for a Consultant post and so it was a great honour to have this prestigious prize cited next to it. I have no doubt that the NIAA label helped strengthen its impact.

Success Stories

Maurice P Hudson Prize Winner 2010

Mild induced hypothermia following cardiac arrest and its effects on neurological outcome and mortality

Dr Fiona Kelly,

Royal United Hospital, Bath

I worked as a specialist registrar in anaesthesia and intensive care in the Bristol region. It was during this time that I worked with Jerry Nolan in Bath, and became interested in mild induced hypothermia following cardiac arrest and its effects on neurological outcome and mortality.

As part of my intensive care training I studied the effect of induced hypothermia on the myocardium, and subsequently published a review article in *Anaesthesia* on this subject. It was this article which won the Maurice P Hudson prize. I am now a consultant in Bath.

2010 Stanley Rowbotham Fund

Teaching anaesthesia in Addis Ababa

Dr Rola Hallam,

University College London Hospitals

I joined Health Volunteers Overseas (HVO) and spent two weeks teaching nurse anaesthetists in Addis Ababa, Ethiopia in December 2010.

HVO is a private non-profit organisation dedicated to improving the availability and quality of healthcare in developing countries through the training and education of local healthcare providers.

I was based in Ethiopia's biggest government teaching hospital, Black Lion Hospital.

My role was to teach and help develop a Masters of Anaesthesia training programme in Ethiopia. Thanks to the NIAA, I had a most rewarding and worthwhile experience and plan to return again.

President's Award for Outstanding Achievement 2010

Metabolic control of energetics in human heart and skeletal muscle poster

Dr Andrew Johnson,

John Radcliffe Hospital, Oxford

The poster I presented at the 2010 NIAA Study Day was entitled 'Metabolic Control of Energetics in Human Heart and Skeletal Muscle'. It displayed findings from research that I had done into the relationships between heart failure severity, plasma non-esterified fatty acid concentrations and myocardial and skeletal muscle mitochondrial function. I was lucky enough to win a prize for the work, something which I am very proud of. It was rewarding to know that my work was felt to merit an award by such an esteemed panel of judges.

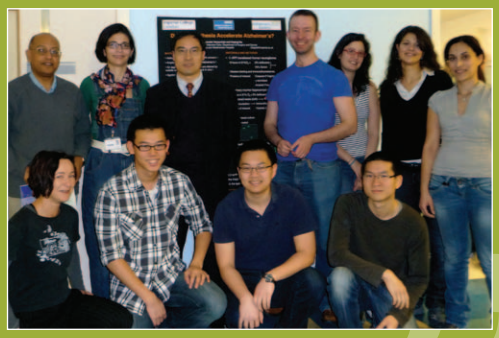
Success Stories

President's Award for Outstanding Achievement 2011

Does anaesthesia accelerate Alzheimer's?

Dr Dafydd Lloyd, Imperial College London

I am a 4th year SpR at the Imperial School of Anaesthesia, working on my PhD. My colleagues and I explored the effects of anaesthesia on neurodegeneration, organoprotection and cancer. We appreciate the opportunities offered by the NIAA to present our work, network and exchange ideas. Winning the President's Award reflects the long-standing effort and dedication of many individuals from the group and it was my pleasure to be able to represent them.



President's Award for Outstanding Achievement 2010

Neural correlates of successful semantic processing during propofol sedation poster

Dr Ram Adapa

Addenbrookes Hospital, Cambridge

My research poster was titled 'Neural correlates of successful semantic processing during propofol sedation'.

My research involves the use of advanced functional neuroimaging techniques to explore the hierarchy of brain regions involved in language processing, and to establish the effects of propofol sedation on these areas. This has provided important insights into the influence sedation has on comprehension, memory and recall. Examining changes in cognitive function under altered levels of consciousness also offers a window into the mechanisms of consciousness and anaesthesia.

Receiving the President's Award for this research has highlighted the strategic position of anaesthetic research in the rapidly expanding fields of cognitive neuroscience and consciousness research.

Payne Stafford Tan Award/Foundation Fund 2010

Audit of LMA cuff pressures at University College London Hospital

Dr Eleanor Walker and Dr Isabelle Reed, University College London Hospitals

Thanks to this grant funding we attended the 2010 American Society of Anaesthesiology conference in San Diego to present a poster. We had measured the intra-operative LMA cuff pressures of 90 patients, the majority of which were grossly over inflated, with pressures of >120cmH_2O.

Following the introduction of manometers in all theatres, our re-audit showed a significant improvement in LMA cuff pressures.

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Dr Duncan Young
John Radcliffe Hospital, Oxford

NIAA Grant Awards

2008 Round 1				
BJA/RCoA Project Grants	Prof A Rice	Imperial College, London	Elucidation of the spino-amygdaloid pathways which drive neuropathic and arthritic pain-related anxiety	£50,000
	Prof J Hall	Cardiff University	Imaging neural responses to pain related stimuli in patients with chronic non-malignant pain (CNMP) pre and post pain management programme	£50,000
	Dr I Nagy	Imperial College, London	The role of N-arachidonoyl phosphatidylethanolamine phospholipase D in regulating the activity of primary sensory neurons in naive and inflammatory conditions	£49,867
	Prof N Webster	University of Aberdeen	Polymorphisms of SP-A and SP-D in patients with ventilator associated pneumonia	£30,119
	Dr R Ni Mhuircheartaigh	University of Oxford	The 'thalamocortical switch' and consciousness: is interruption of thalamocortical transmission the cause or a consequence of induction of general anaesthesia by propofol?	£49,995
	Dr I Moppett	Queen's Medical Centre, Nottingham	Computational modelling of the cerebrovascular behaviour of patients undergoing carotid endarterectomy	£48,168
Anaesthesia/AAGBI Small Project Grants	Dr A Morley	St Thomas' Hospital, London	Molecular mechanisms of action of propofol in clinical use: a gene association study	£14,820
	Dr J Thompson	University of Leicester	The role of nociceptin/orphanin FQ in the inflammatory response to cardiac surgery	£13,300
Anaesthesia/AAGBI Departmental Research Grant	Dr G Minto	Plymouth Hospitals NHS Trust	Amongst patients having major elective colorectal surgery does intra-operative goal directed fluid therapy particularly decrease postoperative hospital length of stay in patients who are categorised 'high risk' on the basis of a pre-operative cardiopulmonary exercise test result?	£25,000
Anaesthesia/AAGBI Research Fellowship	Dr R Cregg	University College London Hospitals	Molecular mechanisms of pain	£106,713
2008 Round 2				
BJA/RCoA PhD Studentship	Dr P Chazot	Durham University	Defining the role and therapeutic potential of the histamine H_4 receptor (H_4R) in acute chronic inflammatory and neuropathic pain	£67,718
AAGBI/Anaesthesia Departmental Project Grant	Prof R Mahajan	Queen's Medical Centre, Nottingham	Validating Anaesthesia Simulation-based Error Research (the VASER study)	£24,256
AAGBI/Anaesthesia Small Research Grant	Dr B Patel	Imperial College, London	Cellular and molecular mechanisms of aspiration induced lung injury	£14,915
ARS Project Grant	Dr G McLeod	Ninewells Hospital, Dundee	Development of software and needle technology to visualise deep lying peripheral nerves with ultrasound	£8,158

NIAA Grant Awards

Continued...

2009 Round 1				
Anaesthesia/AAGBI Departmental Project Grants	Prof D Buggy	Mater Misericordiae University Hospital, Dublin	The role of NET-1 gene in breast adenocarcinoma cell function, the direct effects of anaesthetic and analgesic drugs on NET1 expression, and the effect of serum from breast cancer patients receiving different anaesthetic techniques on NET1 expression in breast adenocarcinoma cells in vitro	£25,000
	Prof P Hopkins	University of Leeds	What is the ED95 dose of bupivacaine 0.5% for ultrasound-guided supraclavicular brachial plexus block?	£3,000
	Dr R Sanders	Imperial College, London	Peri-operative outcome following pre-operative stroke: probing the hospital episode statistics database	£11,062
OAA Project Grant	Dr F Plaat	Queen Charlotte's and Chelsea Hospital, London	UKOSS study of obstetric epidural haematoma and abscess	£12,000
ACTA Project Grant	Dr B Shelley	University of Glasgow	Endogenous antioxidant capacity and oxidative stress after thoracic surgery	£5,233
2009 Round 2				
AAGBI/Anaesthesia Small Research Grants	Dr J Limb	Royal Hospital for Sick Children, Glasgow	Validation of an effect-site targeted propofol infusion for anaesthesia in children	£10,037
	Dr V Grover	Chelsea & Westminster Hospital, London	The use of soluble and surface TREM-1 (triggering receptor expressed on myeloid cells) as a marker of ventilator associated pneumonia (VAP) in intensive care	£14,080
	Dr J Thompson	Leicester Royal Infirmary	What is the role of nociceptin in sepsis?	£13,800
	Dr S V Mallett	Royal Free Hospital, London	In-vitro investigation comparing I.N.R. and whole blood thromboelastic changes seen in patients following major hepatectomy	£14,697
BJA/RCoA PhD Studentship	Prof N Franks	Imperial College, London	The functional disruption of thalamocortical connectivity as a mechanism for propofol and dexmedetomidine general anaesthesia	£73,110
BJA/RCoA Project Grants	Dr R Dickinson	Imperial College, London	The role of the NMDA-receptor glycine site in xenon neuroprotection against traumatic brain injury	£50,000
	Prof J Pandit	John Radcliffe Hospital, Oxford	Are volatile anaesthetic combinations antagonistic or addictive in their effect on human hypoxic ventilatory response and on task-like K^+ channel activity in glomus cells?	£46,005
	Dr K Pattinson	John Radcliffe Hospital, Oxford	MRI biomarkers of vasospasm in subarachnoid haemorrhage – proof of concept study	£7,800
	Dr S Walker	Great Ormond Street, London	Opioid analgesia for neonatal surgery: long term impact on responses to future injury and analgesic efficacy	£48,065
	Prof N Webster	University of Aberdeen	Cardiac biomarkers in ICT patients: what do they mean?	£17,112

NIAA Grant Awards

Continued...

2010 Round 1				
AAGBI/Anaesthesia Departmental Grants	Prof H Galley	University of Aberdeen	Investigating the mechanisms of neuropathic pain induced by paclitaxel: role of oxidative stress-induced mitochondrial damage and protection by targeted antioxidants	£23,497
	Dr I Moppett	University of Nottingham	The effect of intravenous iron on postoperative transfusion requirements in hip fracture patients – a pilot study	£17,371
ARS Project/ Heath Family Grant	Dr T Smith	John Radcliffe Hospital, Oxford	Ascorbate (vitamin C) and hypoxic pulmonary hypertension	£9,680
BJA/RCoA Project Grants	Prof A Absalom	University Medical Centre, Groningen, The Netherlands	Pilot study of the extent and distribution of microglial activation during cardiopulmonary bypass	£19,200
	Dr M Wilson	Imperial College, London	The influence of obesity on the pathobiology of acute lung injury	£44,927
	Dr R Pearse	Barts & The London	Investigation of the effects of dopexamine on leucocyte-endothelial interaction, microvascular flow and tissue inflammatory pathways	£49,438
	Dr P Shortland	Queen Mary University of London	Novel strategies to ameliorate pain association with avulsion injury	£46,476
	Dr G Minto	Plymouth Hospitals NHS Trust	Does intra-operative goal directed fluid therapy reduce clinically important postoperative complications in patients undergoing elective non-vascular major abdominal surgery associated with extensive tissue trauma?	£25,000
OAA Project Grants	Dr N Beale	John Radcliffe Hospital, Oxford	Oxford Persisting Post-Operative Pain Study: the incidence and contributing factors of persisting pain one year after caesarean section	£50,140
	Prof P M Hopkins	University of Leeds	Comparison of the ED95 dose of 0.075% and 0.1% bupivacaine for labour analgesia in primigravida	£4,334
2010 Round 2				
AAGBI/Anaesthesia & BJA/RCoA Small Research Grants	Dr S Davies	York Teaching Hospital NHS Foundation Trust	Prognostic markers of outcome in patients undergoing infra-inguinal revascularisation: a prospective observational pilot study	£13,099
	Dr D Conway	Manchester Royal Infirmary	A comparison of minimally and non-invasive cardiac output during abdominal surgery	£3,995
	Dr A Dushianthan	Southampton University Hospital NHS Trust	Pulmonary surfactant in adult patients with acute respiratory distress syndrome	£15,000

NIAA Grant Awards

Continued...

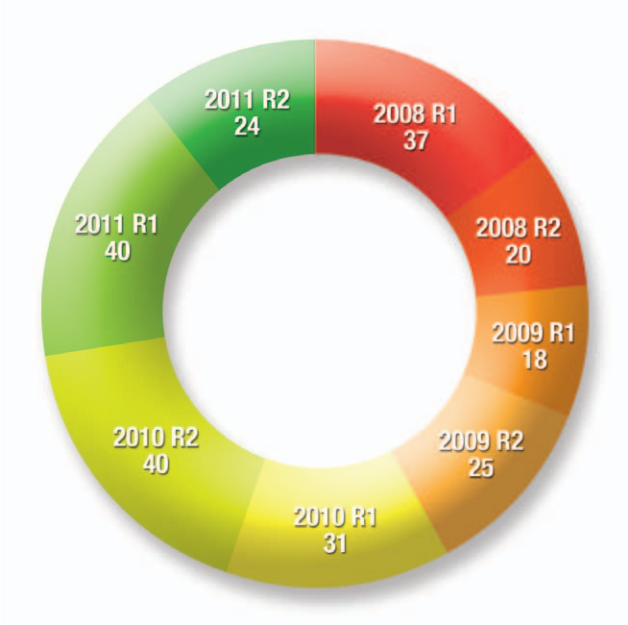
2010 Round 2				
	Dr N Marczin	Imperial College London	Preliminary assessment of frailty in cardiac surgery (definition, prevalence and impact on neutrophil activation)	£15,000
	Dr R Eltringham	Gloucestershire Royal Hospital	Suitability of oxygen concentrators for use with the Diamedica Portable Anaesthesia system (DPA 01)	£14,854
	Dr R Cregg	University College London Hospitals	Contribution of non-nociceptive neurons to pain signalling and phenotype	£13,691
AAGBI/Anaesthesia Research Fellowship	Dr T Veenith	Addenbrooke's Hospital, Cambridge	Mechanisms, spatial distribution and temporal pattern of energy failure following head injury	£143,419
ACTA Project Grant	Dr J Pratap	Great Ormond Street Hospital, London	Pilot study of near-infrared reflectance spectroscopy in children's heart surgery	£8,242
BJA/RCoA PhD Studentships	Prof D Lambert	Leicester Royal Infirmary	Characterisation of fentanyl based bivalent opioids	£67,771
	Prof H Galley	Western General Hospital, University of Edinburgh	Antioxidant protection in mitochondria in chemotherapy-induced neuropathic pain	£67,716
DAS Project Grant	Dr P Charters	University Hospital Aintree	A new approach to predicting difficult tracheal intubation	£10,000
NASGBI Project Grant	Dr J Andrzejowski	Royal Hallamshire Hospital, Sheffield	A pilot study of bilateral BIS monitoring (BBIS) after subarachnoid haemorrhage: will it help to diagnose vasospasm?	£9,992
2011 Round 1				
AAGBI/Anaesthesia Departmental Project Grants	Dr N Gopinath	Leicester General Hospital	Comparison of analgesic efficacy of posterior transversus abdominis plane (TAP) catheters with epidural analgesia in patients undergoing laparoscopic colorectal surgery	£20,950
	Prof H Galley	University of Aberdeen	Development of a 'Glo-Cell' biosensor to investigate the role of zinc in sepsis	£23,510
	Dr C Hawthorne	University of Glasgow	The relationship between transcranial bioimpedance and invasive intracranial pressure measurement in traumatic brain injury patients	£13,008
	Dr S Chillistone	University of Nottingham	Handing over care on patient discharge from critical care ward to the general ward: a multiprofessional, multi-level solution	£12,782
APAGBI Small Research Grants	Dr M Macmahon	Royal Hospital for Sick Children, Edinburgh	A case-crossover study investigating alternations of the ECG baseline in ventilated children undergoing thoracoscopic surgery: a reliable indicator of pneumothorax?	£3,024
	Dr H Hume-Smith	Great Ormond Street Hospital, London	Endoscopic evaluation of the paediatric airway after prior prolonged (>24hrs) tracheal intubation	£23,091
ARS Heath Family Grants	Dr S Scott	Leicester Royal Infirmary	Differential expression of nociceptin receptor (NOP) and pre-pro nociceptin/orphanin FQ (pp-N/OFQ) amongst leucoctyes and their subpopulations	£12,815
	Dr S Wilson	University College London Hospitals	Determining the relationships between peri-operative risk, socioeconomic characteristics, short term postoperative morbidity, and long term patient reported health gain and survival after joint replacement surgery	£5,288
BJA/RCoA Project Grant	Dr C Bantel	Imperial College London	Metabolic characterisation of human models of burn pain	£30,445

NIAA Grant Awards

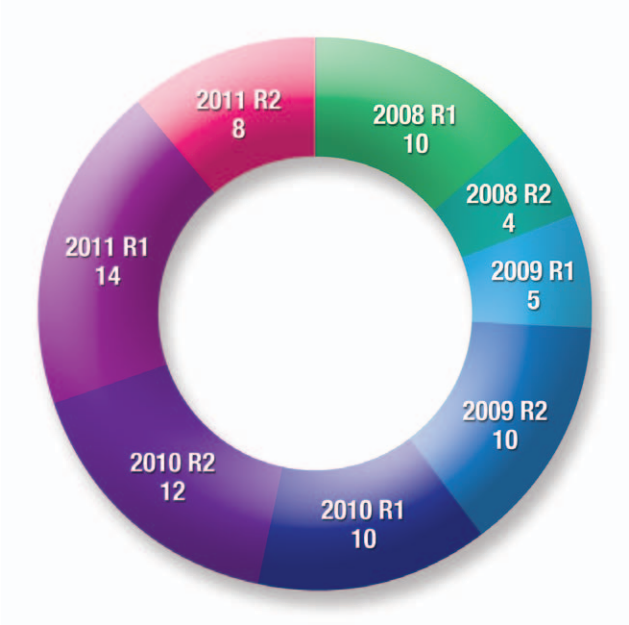
Continued...

OAA Small Project Grants	Dr J Campbell	Chelsea & Westminster Hospital, London	The performance of leucocyte filters for the safe re-transfusion of unwashed blood salvaged at caesarean section in resource-poor situations	£4,491
	Dr R Fernando	University College London Hospitals	Does a 30° head up position in term parturients with a BMI ≥ 35kg/m^2 increase FRC?	£9,900
	Dr K McCarthy	Rotunda Hospital, Dublin	Changes in cytokines and neurotrophins in cerebrospinal fluid during labour pain	£6,500
SEA UK Project Grants	Dr M Sawdon	Durham University	Relating professionalism and conscientiousness to develop an objective, scalar measure of professionalism in anaesthetic trainees	£2,930
	Dr N Crabtree	John Radcliffe Hospital, Oxford	ST1 Anaesthetic Recruit Training (START): A randomised, controlled single blinded trial to evaluate simulation enhanced teaching methods for novice anaesthetic trainees	£10,333
2011 Round 2				
BJA/RCoA PhD Studentship	Prof J Pandit	John Radcliffe Hospital, Oxford	Can the depressive effect of anaesthetics on hypoxic ventilatory responses be explained by action on background potassium channels in the carotid body?	£74,361
	Prof F G Smith	University of Birmingham	Neutrophil dysfunction in sepsis and its modification by statin therapy	£66,990
	Dr M Wilson	Chelsea & Westminster Hospital, London	Mechanisms of alveolar macrophage activation during ventilator-induced lung injury	£73,755
AAGBI/*Anaesthesia* & *BJA*/RCoA Small Project Grant	Dr R Dickinson	Imperial College, London	Pilot study of xenon neuroprotection in a model of subarachnoid haemorrhage	£14,986
	Dr B Holst	University Hospital, Wales	Lipopolysaccharide-induced hypersensitivity to complement component C5a: investigation of its contribution to the pathophysiology of sepsis and identification of the signal transduction intermediates that regulate it	£14,800
	Dr G Mills	Northern General Hospital, Sheffield	Protective ventilation during general anaesthesia for open abdominal surgery: a randomized controlled trial (PROVHILO) UK arm	£15,000
	Dr K Pattinson	John Radcliffe Hospital, Oxford	Measurement of spontaneous low frequency oscillations of cerebral haemodynamics in the human brain with functional magnetic resonance imaging	£14,000
	Dr M Rockett	Derriford Hospital, Plymouth	The impact of Patient Controlled Analgesia (PCA) use in the emergency department on the prevalence of chronic pain at six months following trauma and abdominal pain	£14,963

NIAA Research Grant Figures



Grant applications received



Grant applications funded

Year	Grant applications received	No of categories	Grant applications funded	Amount requested	Amount funded
2008 R1	37	4	10	£1,232,748	£437,982
2008 R2	20	4	4	£423,659	£115,047
2009 R1	18	4	5	£315,525	£56,295
2009 R2	25	4	10	£1,096,642	£294,706
2010 R1	31	6	10	£922,931	£290,063
2010 R2	40	8	12	£1,472,347	£382,778
2011 R1	40	7	14	£775,155	£179,067
2011 R2	24	3	8	£720,627	£288,855

Year	England – London	England – Outside London	Scotland	Wales	Ireland	Rest of world
2008	5	6	2	1		
2009	7	4	3		1	
2010	6	13	2			1
2011	7	11	3		1	

RCoA Small Grant Awards

Year	Winning Applicant	Project Title	Amount Funded
2009			
	Dr B O'Brien	Visiting Fellow to Berlin Heart	£1,000
	Dr C Connolly	4th Scotland/Malawi Anaesthesia Refresher Course for Malawian ACOs	£4,500
	Dr D Hurford	Attendance at Difficult Airway Society Conference	£457
	Dr S Lomax	An observership of anaesthesia for bariatric surgery at Massachusetts general hospital, Boston, USA	£1,500
	Dr P Scott	Anaesthesia for ECT in Malawi	£2,000
2010			
	Dr R Hallam	(i) Bridging the gap: anaesthesia in the developing world, training course, Uganda, and; (ii) Clinical instructor and course developer, Masters of Anaesthesia programme, health volunteers overseas and Addis Ababa University, Ethiopia	£2,386
	Dr N Ladak	The role of cannabinoids in sepsis	£2,295
	Dr N Rajakumaraswamy	Attendance at the Annual Congress of the European Society of Intensive Care Medicine (ESICM)	£850
	Dr I Reed & Dr E Walker	Laryngeal mask airway cuff pressures and sore throat presentation at the American Society of Anaesthesiology Annual Conference in San Diego	£1,730
	Dr T Smith	Pilot study of iron status in intensive care	£2,470
2011			
	Dr R Hallam	Improving infant and child mortality rates in Uganda through improving critical care: the Nsambya Hospital Project	£1,763
		Pregnant mothers admitted to the Intensive Care Unit: A retrospective review	£500
		Can nursing staff identify airway equipment on the resuscitation trolley? Implications for patient safety at resuscitation attempts. (Airway Equipment Survey)	£500
	Dr L Peltola	Voluntary work at the Queen Elizabeth Central Hospital, Blantyre, Malawi	£2,058
	Dr AM Rollin	Presented at the Association of Anesthesiologists of Mauritius (AAM) Annual CME Conference	£850
	Dr R Sanders	Quantifying the similarities of sedation and sleep	£1,250
	Dr B Shelley	Utility of a panel of acute lung injury biomarkers following lung resection – a pilot study	£2,500
	Dr S Young	The incidence of persistent pain after caesarean and its association with maternal anxiety and socioeconomic background	£164

RCoA Awards

British Oxygen Company Professorship		
2006–2011	Prof D Menon	
2011–2015	Prof M Grocott	
Macintosh Professorship		
2009	Dr S Ghosh	The Papworth BiVent Tube: a new device for lung isolation
2010	Dr J Thompson	What is the role of Urotensin in cardiovascular disease?
2011	Dr J Pandit	Interactions of volatile anaesthetics and the hypoxic ventilatory responses at cellular-molecular level: advances by reverse translation'
2011	Dr R Pearse	Peri-operative medicine: opportunity or threat?
Maurice P Hudson Prize		
2009	Dr L Green	Can't intubate, can't ventilate! A survey of knowledge and skills in a large teaching hospital
2010	Dr F Kelly	The effects of mild induced hypothermia on the myocardium: a systematic review
2011	Dr A Conway-Morris	Reducing ventilator-associated pneumonia in intensive care: impact of implementing a care bundle
President's Award for Outstanding Achievement		
2010 (First prize)	Dr R Adapa	Neural correlates of successful semantic processing during propofol sedation
2010 (Second prize)	Dr A Johnson	Metabolic control of energetics in human heart and skeletal muscle
2011 (First prize)	Dr D Lloyd	Does anaesthesia accelerate Alzheimer's?
2011 (Second prize)	Dr N Notkina	Cerebral metabolic effects of strict normoglycaemia versus current clinical glycaemic control following severe brain injury
President's Award for Undergraduate Research		
2008	Miss T Lim	Xenon-Induced HIF-1α in preconditioning of neural and extra-neural tissue
2008	Miss L Clifford	The impact of genetic polymorphisms on incidence and severity of systemic inflammatory response syndrome (SIRS) in paediatrics
2008	Mr N Soneji	The effect of cannabinoids on established transient receptor potential vanilloid type 1 receptor sensitisation
2009 (First prize)	Miss F du Feu	Anatomical study on the transversus abdominis plane block
2009 (Runner up)	Mr J Azam	Fit for surgery? A study of self-reported exercise capacity in vascular surgical patients
2009 (Runner up)	Mr Z Zhou	Neuroapoptosis induced by anaesthetics and/or noxious stimuli in different regions of the brain
2010 (First prize-clinical)	Mr D Tabor	Spread of large volume injectate from three different transversus abdominis plane block injection sites: a cadaveric study
2010 (Runner up-clinical)	Miss R Fisher	Chronic pain in the homeless
2010 (First prize-lab)	Mr J Penn	The therapeutic potential of atorvastatin in attenuating postoperative cognitive decline after unilateral nephrotomy
2010 (Runner up-lab)	Miss E Petrides	Sevoflurane for labour analgesia: implications for foetal brain protection
2011 (First prize-clinical)	Miss J Orr	A comparative pilot study of anaerobic threshold values obtained from arm crank and bike ergometer exercise tests
2011 (First prize-lab)	Mr M Chong	Xenon protects against renal graft cold ischemia-reperfusion induced tubular injury
2011 (Runner up)	Mr A Fung	Remote brain injury following kidney transplantation: possible cellular mechanisms of cognitive decline
2011 (Runner up)	Dr B Yang	Helium: a noble assassin? The anti-cancer properties of helium in vitro

APPENDIX F

Acronyms

AAGBI	Association of Anaesthetists of Great Britain and Ireland
ACF	Academic Clinical Fellow
ACTA	Association of Cardiothoracic Anaesthetists
APAGBI	Association of Paediatric Anaesthetists of Great Britain and Ireland
ARS	Anaesthetic Research Society
BJA	British Journal of Anaesthesia
BOC	British Oxygen Company
CCRN	Comprehensive Clinical Research Networks
CLRN	Comprehensive Local Research Networks
CPET	Cardiopulmonary Exercise Test
CRN	Clinical Research Network
DAS	Difficult Airway Society
DMA&CC	Department of Military Anaesthesia and Critical Care
DSTL	Defence Science and Technology Laboratory
ELN	Emergency Laparotomy Network
EPICOT	Evidence, Population, Intervention, Comparison, Outcome, Time stamp
EuSOS	European Surgical Outcomes Study
GAT	Group of Anaesthetists in Training
GDT	Goal-Directed Fluid Therapy
HipFPN	Hip Fracture Peri-operative Network
HSRC	Health Services Research Centre
MERT	Medical Emergency Response Team
NAP	National Audit Project
NASGBI	Neuroanaesthesia Society of Great Britain and Ireland
NETSCC	NIHR Evaluation, Trials and Studies Coordinating Centre
NHFD	National Hip Fracture Database
NICE	National Institute for Health and Clinical Excellence
NIHR	National Institute for Health Research
OAA	Obstetric Anaesthetists' Association
ODM	Oesophageal Doppler Monitor
POMS	Postoperative Morbidity Survey
RCoA	Royal College of Anaesthetists
RCDM	Royal Centre for Defence Medicine
RfD	Readiness for Discharge
SEA UK	Society for Education in Anaesthesia, UK
UKOSS	United Kingdom Obstetric Surveillance System
VASGBI	Vascular Anaesthesia Society of Great Britain and Ireland

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