

NIAA

National Institute of Academic
Anaesthesia

10

YEARS
2008–2018



The National Institute of Academic Anaesthesia

Comprehensive Review 2016–2018

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10 year look back



In 2018 the NIAA celebrated its 10 year anniversary, marking a decade of resurgence for anaesthesia as an academic specialty. Here, the current and former chairs of the NIAA Board share their reflections and experience.



Professor Mike Grocott
NIAA Board Chair, 2018–2021

The National Institute of Academic Anaesthesia (NIAA) is the jewel in the crown of UK anaesthesia. The sustained and effective collaboration of the four founding partners, the Association of Anaesthetists and Royal College of Anaesthetists and their associated journals *Anaesthesia* and the *British Journal of Anaesthesia*, is unique in academic medicine and has created an organisation that is the envy of other medical specialties and internationally admired as a model of academic co-operation.

The NIAA manages a unified and rigorous grant evaluation system that awards more than half a million pounds each year: more than £7 million has been distributed over the last ten years. The trainee research networks are widely recognized as a highly effective innovation by our specialty and, along with the NIAA academic training support and the NIHR CRN, are offering an ever-increasing number of opportunities to engage with research in anaesthesia. World-class clinical research is being delivered through the

Health Services Research Centre (HSRC) and the Clinical Trials Network and the development of the Experimental Medicine and Discovery Science Group completes this bench-to-bedside portfolio.

Through these initiatives, the NIAA has a reasonable claim, alongside the National Institute of Health Research, to have driven the remarkable renaissance in academic anaesthesia in the UK over the last decade. Recruitment into NIHR Portfolio studies is at an all time high, anaesthetists are securing grants across the NIHR and MRC grant portfolios and anaesthetists are being awarded at the highest level as NIHR Research Professors, Senior Investigators and in national research leadership roles.

Most importantly, the NIAA is delivering on its founding vision of improving patient care through facilitating high-profile influential research, developing researchers, and promoting the translation of research findings into clinical practice.



Professor David Rowbotham
NIAA Board Chair, 2008–2010

The first Board meeting of the NIAA was held in February, 2008. This was preceded by a one-year period of reflection, negotiation, cajoling, robust discussion and growing concern for the reputation of anaesthesia as a specialty with a limited academic background. Things have changed now, but in those days there were many anaesthetic organisations involved in academic activities with scant evidence of partnership working and certainly no national strategy. Various committees, reports and individuals had highlighted the need for this but no progress had been made. Probably, three factors played a vital role in facilitating the formation of the NIAA: the near terminal decline of academic anaesthesia; the willingness of a group of like-minded national leaders in anaesthesia who were willing to consider a step-change in partnership working and; the establishment of the NIHR.

The decline in academic anaesthesia reflected a national trend for most specialties. However, we were amongst those specialties that suffered most. The decline was the result of a national strategy that moved away from clinical research and concentrated most energy and resource into laboratory-based medical sciences. Universities were rewarded for responding to this change, many began to regard clinical research as far less important and indeed, for some, a waste of time. Most anaesthetic departments found it difficult to respond to this as the basic science opportunities in our specialty are considerably less than many others. Only a few centres did well out of this strategy (e.g. blue chip funding, publications in high impact journals) and they must be recognised and congratulated. However, most did not.

In parallel with this, it had also become very difficult to set up and deliver clinical trials in the NHS. From a position of first in Europe and 2nd in the world for clinical trial activity (commercial and non-commercial), the UK had fallen well down the league table. Even if you had been awarded a grant for a clinical trial in the NHS, it was very unlikely that you would deliver it on time and to budget.

Clearly, forming true and durable partnerships within our profession was essential for the establishment of the NIAA and the work of a group of like-minded national leaders delivered this. The principles were easy to agree upon; for example, working in partnership, working for the common good, supporting the

development of our profession, improving patient outcomes, and establishing a national profile and reputation. However, the practicalities, such as losing total control of one's funds and strategy were more difficult. Various councils, boards and committees had to understand the strategy and what it meant operationally, and this had to be sold to their membership. Eventually, the appreciation of the need for such a partnership was so strong that a governance structure for the NIAA was agreed.

The founding partners of the NIAA were those organisations that represented all anaesthetists and/or contributed most significantly to research funding (*Anaesthesia*, Association of Anaesthetists of Great Britain and Ireland, *British Journal of Anaesthesia*, Royal College of Anaesthetists). Our vision was with respect to anaesthesia and related specialties to: improve patient care by promoting the translation of research findings into clinical practice; develop and maximise our academic profile within the healthcare profession, NHS, universities and major research bodies; facilitate high profile, influential research; and support training and continuing professional education in academia.

Starting with a small number of partners was helpful. Initial agreement was less challenging and we were able to demonstrate to other potential partners that the organisation was working well and worth joining. It was gratifying to see in the early days of the NIAA how many recognised the advantages and signed up. In the first year we established a first-class grant review process, worked closely with our trainees, established medical student prizes and became involved with the development of an academic structure within military anaesthesia. Another top priority was the creation of the Health Services Research Centre.

The establishment of the NIHR was fortuitous. It was in its infancy when the NIAA started but much of its vision was consistent with ours and it gave the opportunity to link with the NIHR at a very early stage, certainly well before many other specialties. The vision of the NIHR included: establishing the NHS as an internationally recognised centre of research excellence; attracting, developing and retaining the best research professionals to conduct people-based research in the NHS; and providing infrastructure for clinical research delivery. We were able at an early stage to become adopted by the NIHR as one of their recognised research funders. This gave our colleagues who were awarded research grants via the NIAA access to facilities and support provided by the NIHR Clinical Research Network.

I am sure that those who worked together during the early days of the NIAA are proud of what it has become. Its success is not just a reflection on those who created it; more importantly, it is on those who developed the NIAA into a productive, respected and relevant organisation benefiting our profession, NHS and our patients.



Professor Ravi Mahajan
NIAA Board Chair, 2010–2014

The NIAA was established in the year 2008, to re-invigorate academic anaesthesia in the UK. The founding NIAA Board was established under very able chairmanship of Professor David Rowbotham. It had its membership drawn from the two key organisations, the RCoA and Association of Anaesthetists, and the two main specialty journals *British Journal of Anaesthesia (BJA)* and *Anaesthesia*.

David's leadership and negotiating skills were instrumental in steering the formation of NIAA by bringing together the key partner organisations. This historic collaboration very quickly resulted in some amazing achievements within 1-2 years of establishing NIAA. One of the earliest successes was that the four partners made a commitment to bring their research grant funding under one umbrella; they agreed to channel this funding (approximately £ 0.5 million per year) strategically through NIAA. A robust mechanism of assessment and awarding of these grants was developed and run by Professor David Lambert. This was instrumental for these grants to be recognised by the National Institute of Health Research (NIHR) for a portfolio status. Hence, there was now a commitment by the NHS/NIHR to support research funded through NIAA mechanisms. Many specialist societies became partners in this endeavour by joining NIAA and channelling their research grants through its mechanisms. Other key developments in the early years were establishment of Health Services Research Centre (HSRC), collaborations with Military Academic Anaesthesia and engagement with academic trainee anaesthetists.

In the year 2010, I was appointed as Chairman of NIAA Board, and was very fortunate to work with some amazing people and organisations. By this time, strong foundations for a very influential organisation had already been laid. Further growth was made possible by continued commitment of the key partners and specialist societies to make NIAA a success. The grants continued to grow in their scope as well as in size. Some strategic grants (career development, large projects) were made possible through growing collaborations among the partners. The HSRC, under the dynamic leadership of its founding Director, Professor Mike Grocott, started to influence academic landscape by overseeing National Audit Projects (NAPs) and initiating Sprint National Audit Projects (SNAPs). Mike's leadership was instrumental in bringing the National Emergency Laparotomy Network and Fracture Neck of Femur Network under the HSRC umbrella. These were pivotal initiatives which laid the crucial ground work for a successful bid for substantial grant from Healthcare Quality Improvement Partnership (HQIP). Importantly, these developments expanded the academic anaesthesia pursuits in the UK from the confines of few university departments to almost every NHS anaesthesia department. By the end of 2014, the NIAA was poised to enter into a much more dynamic and influential phase under an extremely capable leadership of Professor Monty Mythen.

Since the year 2014 and until 2018, NIAA has grown massively in its scope and activity. With the Clinical Trials Network, perioperative research hub and trainees' research networks it has increased the academic capacity in the UK significantly beyond what was comprehended 10 years ago. The HSRC, under the chairmanship of Professor Ramani Moonesinghe now, is overseeing a number of national quality improvement and quality outcome projects. These recent developments have already started to make significant differences in the quality of care and patient outcomes.

For our specialty, it is a matter of great pride that NIAA is now uniquely placed nationally and internationally to be the most influential and dynamic organisation of UK academic anaesthesia aiming to make meaningful differences to patients' lives worldwide by supporting research and quality improvement.



Professor Monty Mythen
NIAA Board Chair, 2014–2018

2018 is the 10th anniversary of the foundation of the National Institute of Academic Anaesthesia (NIAA). I was privileged to take over the Chair of the NIAA Board in 2014.

As detailed in the preceding accounts of the early years by the founding Chair, David Rowbotham and my predecessor Ravi Mahajan that precede, most of the hard yards had been won by the time I took over. I wish to add my thanks to David Lambert who ran the Grant awards programme until very recently when he handed over to Matt Wilson. The grants awarded by our funding partners have fuelled our impressive and relentless recovery as an academic specialty.

These grants, the hard work of the NIAA administrative team, and the infrastructure, including the Health Services Research Centre and the Clinical Trials Network have helped us to exploit the massive opportunities that came with the launch of the National Institute of Health Research (NIHR). As David Rowbotham points out, luck was on our side when the NIHR was launched almost exactly the same time as the NIAA. For the first time any one in the NHS could engage in research to improve the health and wealth of the Nation and the money was available to clinicians at the bedside without the dependence on traditional academic departments that had largely failed.

The NIAA was a great idea and we should be rightly proud of the first decade but it helps to be lucky.



Ringling the changes!



Dr Matt Wilson
NIAA Grants Officer

The mantle of Grants Officer has now passed to me from Professor David Lambert. As a direct result of his diligent efforts the NIAA grants system is flourishing and functional. In two annual rounds the NIAA administers applications to multiple grant streams funded by its founding partners and affiliated sub-specialty societies.

These awards support a diaspora of research endeavour, including non-clinical 'bench' science PhD fellowships, clinical investigations, applied health research, evidence synthesis and randomised trials.

With some variation between individual time periods, £1.3 to £1.5M is 'requested' in a given 'round' and approximately half of these funds granted. Success rates for applicants vary depending on the particular funding stream but overall are steady at roughly 1:3, which makes the NIAA portfolio one of the most fruitful sources of potential funding for investigators in the fields of anaesthesia, perioperative medicine and pain. Our updated funding portfolio is shown in the figure on page 9; 235 awards have been granted, worth a total of approximately £7.5m in ten full years of activity. Whilst the core founding partners (*BJA/RCOA* and *Association of Anaesthetists/Anaesthesia*) fund grants in every cycle, certain sub-specialty societies fund once annually, resulting in slightly different work-loads between the two annual processes.

The processing of applications has kept pace with the expansion of the system and remains swift and efficient. This is largely the result of the adoption of a 'one step' application process, which completes turnaround in approximately 10 weeks in total, from application to decision. The success of these adjudicative mechanisms is largely the result of a small army of external peer reviewers offering their expertise in the assessment of applications. Given the very broad scope of potential research subjects and methodologies, these reviewers are vital to the functioning of the system and offer their time and energies 'gratis.' Grant Committee dates are fixed in advance and openly advertised as is the composition of the Grants Committee.

The majority of our activity remains focused on project grants. Whilst this system works acceptably for most, the 'ceiling' for project funding is £60,000 per study, with up to £100,000 available in exceptional circumstances. Given the governance burdens that clinical research now inevitably carries, this absolute funding maximum inevitably constrains the nature of research that NIAA has a capacity to support. For example, large, multicentre, randomised trials are usually well beyond the scope of these resources, unless they are restricted to feasibility or pilot studies in anticipation of future definitive work. The NIAA has previously committed itself to actively explore the potential for of applications with an award comprised of resources from more than one funder. Examples of this process prior to my tenure as Grants Officer include assistance from a founding partner, with funds to support a grant project deemed of sufficient scientific merit, beyond the resources available to another NIAA member organisation. Historically, these initiatives have been successful but framed informally. There is a recognition that for the practice to generate new opportunities, the process must be transparent to applicants and accountable to funders. There is potential to realise this goal with greater vision, to offer applicants the opportunity to produce truly practice changing research. It would also go some way to convincing external funding organisations that we are resourcing credible research at a national level.

With the transition of the post of Grants Officer, a review of the application system is timely to generate a strategy for its evolution into the future. To this end, a consultation process has been initiated with funding partners and funding applicants, to invite their opinion and input. It is an opportunity for review, renewal and for us to respond to their requirements in shaping a system fit-for-future-purpose.



The outputs of the consultation process will be presented to and reviewed by the NIAA Board and Research Council and subject to revision and approval, made available to Funders and Societies who contributed. The NIAA will retain ultimate discretion on any development strategy implemented on the basis of its findings. Any resource implications for the development of the grant application scheme will require consideration and endorsement by NIAA Board, before implementation.

During the NIAA's tenth anniversary year, a paper* titled "Analysis of the distribution and scholarly output from National Institute of Academic Anaesthesia (NIAA) research grants" was published in the journal *Anaesthesia*.

This review was conducted independent of the NIAA and sought to assess the distribution of applications and quantify the academic returns of NIAA supported research. The study considered almost 500 grant applications over an eight-year period (2008-15).

Grant category, the nature of the supported study, publication and impact factor were analysed for 121 of 150 awards, resulting in 91 completed studies.

The study concluded that the NIAA grants system is impartial to the demographics of applicants, provides good value for money in the context of publications generated for grant monies spent and continues to produce publications in journals with competitive impact factors. The paper confirmed the necessity track research outputs from NIAA funded grants more formally. The NIAA had already identified the requirement for a process to track outputs from grant to publication and will be implementing the 'Researchfish' platform to serve this purpose as of the first grant round in 2019.

*This paper is available online at: <https://onlinelibrary.wiley.com/doi/full/10.1111/anae.14277>

FIGURE: GRANT ACTIVITY FROM 2008–2018 ENCOMPASSING THE MAIN NIAA 2008 (R1) – 2018 (R2), 22 ROUNDS

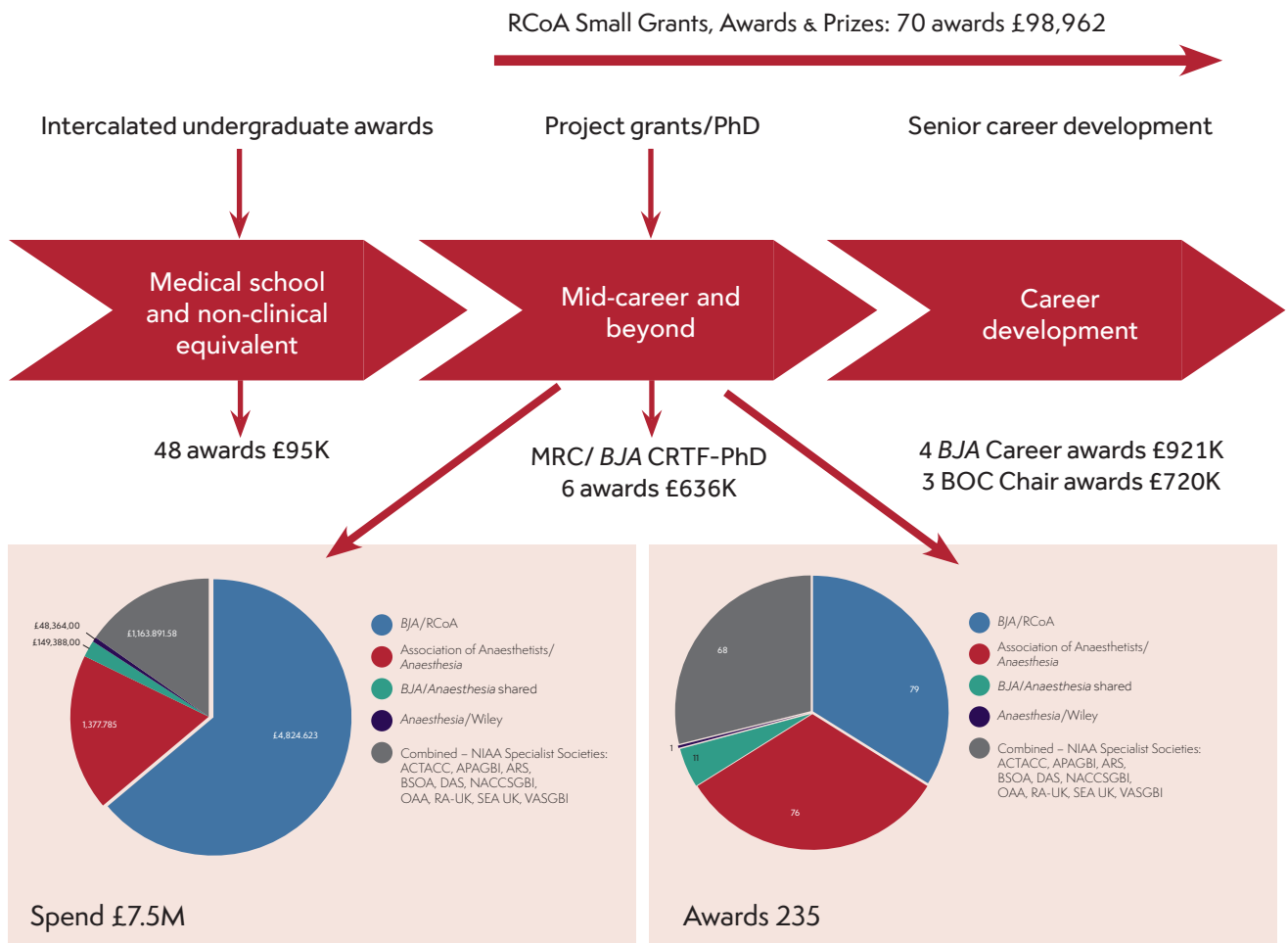


Table 1: Funding by partner

Data from 22 rounds: 2008 (R1) – 2018 (R2)					
Funding Partner	Number of Awards	Spend	Funding Partner	Number of Awards	Spend
BJA/RCoA	79	£4,824,623	RA-UK	4	£22,294
AAGBI/Anaesthesia	76	£1,377,785	BSOA	2	£13,500
BJA/Anaesthesia Shared	11	£149,388	VASGBI	2	£53,007
OAA	18	£487,518	ACTA/ VASGBI/BJA/RCoA	1	£39,552
ARS	6	£63,023	AAGBI/SEA UK	1	£3,000
APAGBI	5	£113,290	APAGBI/BJA/RCoA	1	£18,005
ACTACC	5	£61,532	BJA/NACCSGBI Shared	1	£69,454
DAS	13	£104,097	Anaesthesia/Wiley	1	£48,364
SEA UK	3	£15,046	AAGBI/DAS Shared	1	£4,632
NACCSGBI	3	£39,826	AAGBI/ACTA Shared	2	£56,116
				235	£7,564,052



NIHR CRN Anaesthesia, Perioperative Medicine and Pain Specialty Group



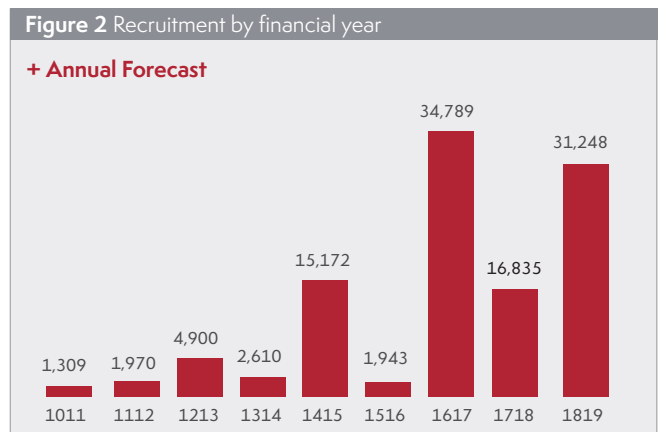
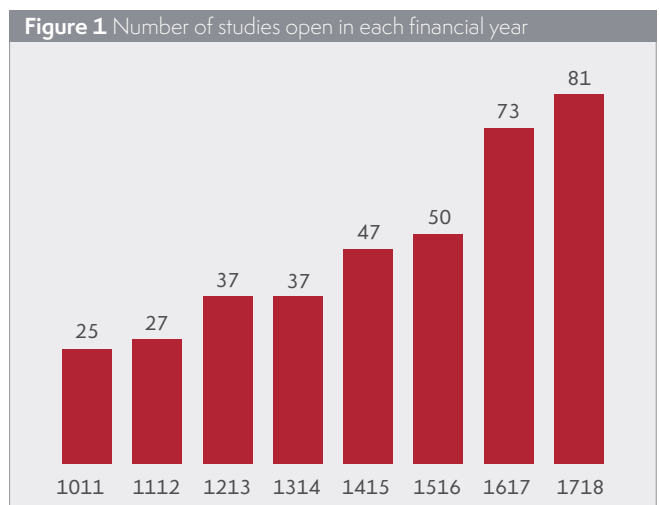
Professor Mike Grocott
NIHR Senior Investigator and NIHR CRN National Specialty Lead of Anaesthesia, Perioperative Medicine and Pain

Anaesthesia, Perioperative Medicine and Pain (APOMP) is thriving as a specialty group within the NIHR Clinical Research Network. The number of studies on the APOMP portfolio has more than trebled over the seven years since 2011 and this momentum is being maintained (Figure 1).

The number of patients recruited into studies has also progressively increased: recruitment exceeded 15,000 participants in three out of the last four years and is expected to do the same in 2018-19 (Figure 2).

There have been many drivers for this ongoing success. Most importantly, the hard work and commitment of local investigators and research nurse teams has provided the infrastructure to enable recruitment of patients into studies. Regional specialty group leads have shown outstanding leadership encouraging and supporting investigators within their local CRNs. Nationally, high-quality clinical studies are being funded by major funding bodies including the prestigious NIHR Health Technology Assessment (HTA) programme. Commercial funding is also growing, particularly for pain studies.

The NIAA has also materially contributed to building and sustaining study numbers and patient recruitment. The NIAA Health Services Research Centre has generated a number of studies, most notably the snapshot audits SNAP-1 and SNAP-2, that have contributed massively to overall recruitment numbers (**SNAP-1 was the highest recruiting anaesthesia portfolio study ever**). The Perioperative Medicine Clinical Trials Network (POMCTN) is initiating and supporting an expanding portfolio of interventional studies. Of particular note, the trainee research networks have made a huge contribution both to recruitment of patients to portfolio studies and to the development of new studies (e.g. DALES).



In 2017-18 our national performance metric focused on trainee involvement in all CRNs, which was readily achieved. In 2018-19 this metric will be the number of trainee (co)chief investigators on portfolio studies.

The specialty group work closely with the NIAA to avoid duplication of effort and the NIAA leads for training and specific research groups serve on the specialty group board. In addition the specialty group undertake project work that in the past two years have included workshops on MedTech and Career Pathways in Research – the latter focused on research active NHS clinicians. Both of these projects have led to published outputs – please see specialty group website:

www.nihr.ac.uk/nihr-in-your-area/anaesthesia.

Membership of the NIHR Anaesthesia Perioperative Medicine and Pain Specialty Group:

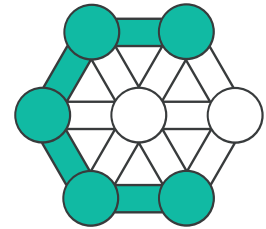
Mike Grocott (Chair), David Yates (Yorkshire and Humber), Sean Cope (North East and North Cumbria), Joyce Yeung (West Midlands), Gary Mills (Yorkshire and Humber), Jaimin Patel (West Midlands), Karim Shoukrey (East Midlands), Michael Lee (Eastern), Atul Kapila (Thames Valley and South Midlands), Mathew Patteril (West Midlands), Glenn Arnold (North West London), Ronelle Mouton (West of England), Anton Krige (Greater Manchester), Gudrun Kunst (South London), Mark Harper (Kent, Surrey and Sussex), Sam Bampoe (North Thames), Mark Edwards (Wessex), Gary Minto (South West Peninsula), Tamas Szakmany (Wales), Mike Gillies (Scotland), Fang Gao (NIHR Senior Investigator), David Menon (NIHR Senior Investigator), Sam Clark (Trainee Network Representative), Daniel Martin (NIAA Academic Trainee Coordinator), Ramani Moonesinghe (NIAA Health Services Research Centre Director), Rupert Pearse (Perioperative Medicine Clinical Trials Network Director), Martin Leuwer (Industry Lead), Sam Eldabe (Faculty of Pain Medicine Representative), Tania Ferreira (NIHR KCL CRN Cluster Administrative Assistant), Andrienne Papadopoulou (NIHR KCL CRN Cluster Coordinator), Stephen Smye (NIHR KCL CRN Cluster Theme Lead), Joanne Ashcroft (KCL CRN Assistant Cluster Lead).



UK Perioperative Medicine Clinical Trials Network



Professor Rupert Pearse
CTN Director



UK PERIOPERATIVE MEDICINE
CLINICAL TRIALS NETWORK

In 2015, the National Institute of Academic Anaesthesia formed a Perioperative Medicine Clinical Trials Network (CTN) to develop, support and co-ordinate world class multi-centre clinical trials in the UK.

The core purpose of the CTN is to support the generation of new evidence to inform the care of more than 300 million patients undergoing surgery worldwide each year. It is now well recognised that complications after surgery result in a significant delays in patient recovery and return of functional independence. Patients who develop postoperative complications experience a higher mortality risk which persists for many years after surgery. Improvements in perioperative care may therefore have a substantial impact on wider public health, but only if supported by robust clinical evidence. In other medical specialities, large clinical effectiveness trials remain a primary source of evidence to define patient care. At present, few major trials are conducted in anaesthesia and perioperative medicine, either in the UK or worldwide. The CTN is helping to change this by building infrastructure to facilitate patient recruitment into clinical trials.

What does the Clinical Trials Network do?

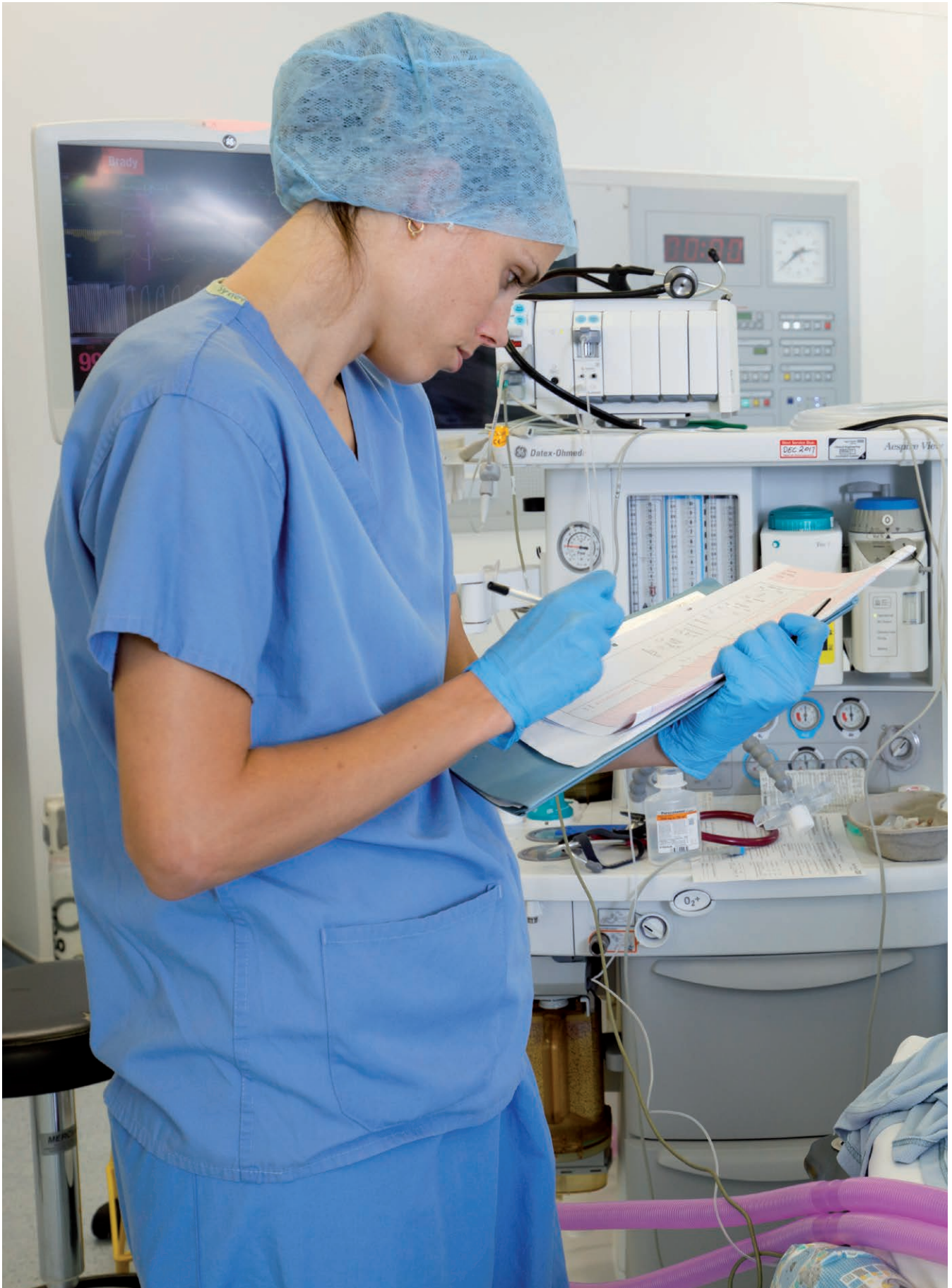
The CTN is creating an environment which allows everyone with an interest in perioperative care to make a meaningful but realistic contribution to clinical trials and observational studies. Our aim is to organise the many and varied contributors into an effective collaborative team, with a shared belief in the importance of our work, and a shared sense of ownership of our projects. By promoting an effective working relationship between trial organisers and investigators in individual hospitals we hope to ensure strong engagement both with research

and the subsequent implementation of research findings. We are achieving this by developing an inclusive culture, with recognition of the contributions made by every member of the group, even though most CTN projects are large collaborations.

Recent developments in the CTN

Since our official launch in April 2016, we have seen a steady flow of new members joining our Local Investigator, Principal Investigator and Associate Investigator schemes, and we now have more than 300 members. We have launched our Chief Investigator scheme to develop and train the future leaders of major clinical trials, and we have appointed our first Deputy Director, Dr Joyce Yeung.

The CTN now hosts six trials, five of which have secured substantial external funding. We began our third year with a clinical trials development day to develop three new major trial proposals which we plan to lead through the CTN. This meeting is an important example of how we are working with investigators of all backgrounds to create a community with a genuine sense of ownership of the research we undertake. Along with strong engagement with partner organisations including the Royal College of Surgeons of England and the Research & Audit Federation of Trainees (RAFT), the CTN is making real changes to how we deliver research of relevance to our patients. Please visit the CTN website to find out more about our work and to get involved www.pomctn.org.uk.



Supporting academic anaesthesia



Dr Dan Martin
NIAA Academic Training Coordinator

The last two years have focused the nation's attention on the crucial contribution of doctors in training to the provision of healthcare in the UK. The strikes of 2016 brought all healthcare workers together but created unrest amongst those who were directly affected by the imposed changes.

Academic Training Guidance

As academic anaesthesia continues to flourish throughout the country, it is vital that we encourage, facilitate and support trainees wishing to engage in research. Those wishing to follow a clinical academic pathway undertake longer training programmes with the potential for financial disadvantage. It is therefore essential that we provide a transparent framework that allows academic trainees to maximise the opportunities available to them, without detrimentally affecting their clinical training or life outside of the hospital. The NIAA has published *Guidance on Academic Training in Anaesthesia and Perioperative Medicine* in 2018, a thorough summation of the various pathways open to trainees.

Introduction to academic anaesthesia course

In September 2017 we ran another successful course designed to educate trainees about a range of subjects relevant to academic anaesthesia. Many of the talks were given by trainees who were able to showcase their work and provide inspiration to others. The small group allowed for plenty of discussion and attendees had the privilege to hear Professor Rob Sneyd deliver the UCL William Squire lecture as part of proceedings. The course was generously supported by the London Health Education England office.

Trainee Research Networks

Audit and research that is conceived, designed and run by trainees continues to thrive through the Trainee Research Networks (TRNs). These networks now span the length and breadth of the UK forming a nationwide community

of trainees delivering their own research agenda. Whether working as independent TRNs, groups of TRNs together or all as one under the coordination of the Research and Audit Federation of Trainees (RAFT) these groups have repeatedly turned the traditional model of research upside down and, with minimal funding, completed a variety of impactful projects, such as DALES and iHYPE. A separate report highlights these achievements in greater detail. We have also worked to make sure that audit and research undertaken as part of a TRN project is recognised during a trainee's annual review of competence progression (ARCP).

Academic representation at ARCPs

Thanks to an initiative led by Professor Ramani Moonesinghe there is now a formal structure in place to assess the progression of trainees who are involved in research for more than 25% of their working week. This includes those in NIHR Academic Clinical Fellow (ACF) or Clinical Lecturer (CL) posts, locally run research Fellowship programmes and students undertaking a formal university higher degree (MD or PhD). Previously, academic trainees either missed their ARCP meetings because they were out of programme for research (OOPR) or were faced with explaining academic progress to those who might not fully understand it. Trialled firstly in London then rolled out nationally, academic trainees should now have a senior academic representative at their ARCP to review progress and ensure that during their clinical attachments no additional expectations are put upon them by clinical members of the panel. There is now an academic progress report to be completed by the academic trainee prior to their ARCP that can be downloaded from the NIAA website.

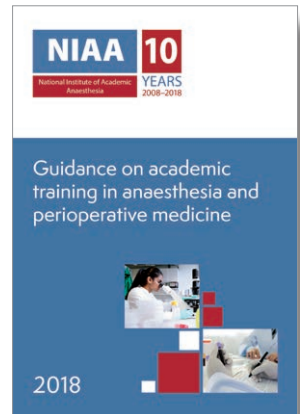
Review of the NIHR ACF and CL schemes in anaesthesia

We are currently undertaking a comprehensive review of NIHR ACF and CL posts within our specialty. These valuable opportunities require careful integration into clinical training schemes and we hope to be able to provide helpful guidance to both trainees and schools of anaesthesia as a result of this piece of work.

In summary, we hope that the NIAA has helped to provide an environment and framework in which trainees feel confident to step into the unknown an experience the opportunities that academic anaesthesia can offer.

Further resources

For the academic training guidance, ARCP academic progress report, and other useful resources, please visit www.niaa.org.uk/trainee-resources#pt.



Research and Audit Federation of Trainees (RAFT)



Dr Sam Clark
Chair, RAFT

RAFT has fully established itself in the last two years, evolving from a simple umbrella organisation to an exoskeleton that conducts ambitious studies and fosters a supportive environment for the Trainee Research Networks (TRNs).

Twenty TRNs are the essence of RAFT, participating in local and national projects, with TRN-led NIHR portfolio studies being one of the most exciting developments. SWARM completed the first TRN-led randomised control trial: CUPPA, which examined the effects of chlorhexidine oral decontamination prior to surgery. STAR led SWeAT, a highly topical collaboration assessing effects of 'burnout' on Anaesthetic trainees. DREAMY, a PLAN-led TRN collaboration portfolio study, built on NAP5 by examining awareness in an obstetric population.

Another innovation are the new subspecialty networks: PATRN, PAINTRAIN, TRISTAR. PATRN, the national paediatric anaesthetic network designs paediatric specific projects; PEACHY, a prospective audit of unplanned paediatric admissions after day surgery, collected data from 23,936 patients across 93 centres.

IHyPE

In November 2016, RAFT conducted its second national project and first portfolio study. It investigated intraoperative hypotension (IOH) in the over-65s, anaesthetists' perceptions of and treatment thresholds for IOH, and documented adverse outcomes associated with IOH. 694 investigators collected data in 196 hospitals enrolling 4,750 patients and 3,366 anaesthetists (the latter counting towards accruals). The majority of investigators were anaesthetic trainees, and also included research nurses, consultants, foundation doctors and medical students. All were required to complete Good Clinic Practice (GCP) training. The study, led by Alex Wickham and Dan Martin and the rest of the

steering committee, ran incredibly well considering the logistical challenges. The results should be published in early 2019.

DALES

This summer, RAFT ran its third national project: Drug Allergy Labels in Elective Surgery. Designed to tie in with NAP6 and led by Caroline Thomas, Louise Savic, David Fallaha and myself, this ambitious study explored patient reported allergy labels and anaesthetic attitudes towards these labels. In particular, it focused on penicillin delabelling. 214 sites and 1,469 collaborators took part and enrolled over 21,000 patients and 4,700 anaesthetists. After publication, selected results will be shared with local hospitals for quality improvement work.

Future RAFT Projects: ATOMIC2

ATOMIC2 builds the combined STAR & SWARM quality and service improvement project examining tracheostomy management in ICU. This project, led by Aggie Skorko, will incorporate service improvement and research elements for a longer period than previous RAFT ventures and is an exciting development for trainee-led research.

Challenges and opportunities for the future

Over the last few years, RAFT has encountered many challenges including, financial, recognition and engagement. The networks remain reliant on trainees' dedication, and sufficient incentives for encouraging trainees to contribute and



organise, are crucial. Inspirational ideas such as fund-raising events, as well as innovative technological solutions developed by RAFT, have enabled increased engagement and support of clinicians on a massive scale, however these resources rely on individuals with specific skills. These challenges will continue into the future, necessitating nurturing and supporting trainee research in an active and progressive manner.

Opportunities with similar groups are emerging based on RAFT's model in other countries, and other medical specialties

have also approached RAFT. Both give rise to the possibility of further collaborations with trainees working together across specialties or borders in the foreseeable future with UK Anaesthesia taking the lead.

Trainees through RAFT are proving that they are important to both the future and the present of anaesthetic research. The NIAA can be proud of its impact on developing trainees' interests in research in the last ten years. With appropriate support, the next decade should see this success continuing.

Military anaesthesia



Col Tom Woolley MD RAMC
Defence Professor of Anaesthesia and Critical Care

The academic department of military anaesthesia and critical care (ADMACC) has continued to grow in the last two years despite decreasing budgets and increasing pressures on time.

ADMACC was formed in 2009 with no dedicated clinical academics with higher degrees. We now have ten regular and five honorary clinical academics, three with higher degrees and a further four likely to be awarded this year.

The focus has been growing the department and at the same time developing research programmes to better support our service personnel. Service delivery and training often compete for time and energy. In the last two years, all academic consultants have deployed on military operations as well as delivering their clinical job and conducting research.

ADMACC research priorities are directed to meet UK Defence objectives and are varied in their requirements. UK Defence has seven research priorities focused on two main areas, treatment of service personnel in the UK and treatment of patients in future conflicts where timelines are extended and logistics strained (prolonged care).

Anaesthesia and critical care is intimately linked to prolonged care where it is imagined that the patient journey from point of wounding to definitive care in a large, well equipped field hospital, will be over many hours or even days. This has

implications for provision of life saving surgery, resuscitation, critical care in field conditions, pain control, and transfer medicine. There are also significant opportunities to develop training and simulation to maintain and improve skills, as well as understanding how we might be able to improve post injury care by improving 'preinjury' prevention or optimisation. Finally, recent events in Salisbury have reinforced the need to continue to maintain our expertise in caring for patients who have suffered from chemical, biological, radiological or nerve agent attack (CBRN).

The goal over the next few years is to consolidate these programmes of work, under programme leads, to deliver high quality evidence. Evidence is only important once translated into clinical practise, thus ADMACC will be judged, not on the number of higher degrees and published papers, but the changes that the research has bought about to clinical care.

Despite difficulties in juggling research with clinical delivery and understanding that it does take time for research to mature into clinical effect, ADMACC continues to grow and to realise its potential to make significant improvements in the clinical treatments of our injured and sick service personnel.

ADMACC'S PRIORITY THEMES ARE:

1. Prehospital Emergency care

- a. Preventing death with lifesaving interventions
- b. Improving long term outcomes with early treatments
- c. Prolonged care

2. Anaesthesia and resuscitation

- a. Delivery with small teams and logistical constraints
- b. Perioperative care for resuscitation
- c. Diagnostics and monitoring
- d. Individualised care
- e. Whole life anaesthetic care for veterans

3. Critical Care

- a. Prolonged critical care in the field
- b. Timing of key interventions
- c. Individualisation of care
- d. Skill mix
- e. Ethics
- f. Nursing

4. Pain (acute and chronic)

- a. Battlefield analgesia
- b. Transfer analgesia
- c. Pain management on long term outcomes
- d. Whole life pain management
- e. Phantom limb pain
- f. Neuroplasticity

5. Transfer medicine

- a. Effects of transfer on the patient
- b. Nursing care during transfer
- c. Recovery of failed surgical interventions

6. Extreme environments

- a. Preparing service personnel for extreme conditions
- b. Understanding extreme physiology
- c. Remote monitoring

7. Education

- a. Staff fatigue
- b. Preparing for deployment
- c. Preventing skill fade
- d. Corporate memory
- e. Guidelines and policy

8. CBRN

- a. Triage
- b. Biomarkers
- c. Diagnostics
- d. Mass ventilation
- e. Prevention and treatment

Health Services Research Centre



Professor Ramani Moonesinghe
Director, HSRC



It has been another great three years for the HSRC. We have substantially expanded our activity and our team, and continued to work collaboratively with clinicians in every NHS hospital in the UK to deliver high quality, clinically meaningful, patient-centred research.

Evaluating quality

2018 was a big year for this theme of work. In April we published the report and six academic manuscripts of the 6th National Audit Project, on Perioperative Anaphylaxis. The NAP6 report was the result of a 3-year collaboration between anaesthetists, allergists, immunologists and the public. Our grateful thanks to the Clinical Lead, Nigel Harper, NAP Director Tim Cook, the many clinicians from multiple specialties who contributed their time to review the cases and write the reports, and our lay representatives who make such a valuable contribution to the process.

The second Sprint National Anaesthesia Project, EPICCS (SNAP-2: EPIdemiology of Critical care after Surgery) took place in 2017 and the first manuscript was published in 2018. For the first time, the SNAP programme went international, with collaboration in Australia and New Zealand. Data was collected on over 25,000 patients and from over 11,000 clinicians who gave their views on risk prediction and critical care admission criteria. Following on from the success of SNAP-1, this project therefore again made a substantial contribution to the NIHR portfolio and was a big part of the anaesthesia, perioperative medicine and pain theme leapfrogging other specialties into the fourth place spot in the league table of recruits to NIHR studies – a massive success for team anaesthesia. The papers coming out of SNAP-2 are

already driving changes in policy and the political agenda and therefore demonstrating the huge impact that the HSRC's work has on the NHS. Our grateful thanks to Danny Wong, the trainee lead, for all his hard work, leadership and initiative, and to Steve Harris the main co-investigator, for his valuable methodological input.

A new data science project, led by Iain Moppett, has started in 2018, which is evaluating the impact of cardiovascular and cerebrovascular events on surgical outcome. Linking multiple administrative datasets, this project is innovative in terms of scientific methodology as well as contributing to clinical knowledge.

We are in the early stages of developing our first project focusing on obstetric patients – a collaboration between the HSRC and OAA, and led from the trainee perspective by Reshma Patel. We hope to have more details for you early in 2019.

Improving quality

NELA continues to improve outcomes for patients undergoing this high-risk type of surgery. The 2018 report again reported a fall in 30-day mortality – now 9.5% compared with 11.8% when the audit started in 2013. Length of hospital stay has also fallen, with an estimated 700 lives and £34 million saved in 2018 compared with previous years. Again, a huge success for the collective efforts of thousands of NHS clinicians; thanks to

the NELA project team and in particular Dave Murray (Chair), Sarah Hare (Clinical Lead), Carolyn Johnston (QI lead) and Sonia Lockwood (surgical lead) and our research fellows LJ Spurling, Sara Catrin-Cook, Tom Poulton and Mike Bassett.

PQIP is now running in over 100 NHS hospitals and at the end of 2018 had recruited over 15,000 patients having high risk elective surgery. Again making a massive and sustained contribution to the NIHR portfolio, PQIP has already highlighted major opportunities for improvement in perioperative care, including anaemia and diabetes management, re-invigorating enhanced recovery pathways and optimising postoperative pain management. The PQIP team is a huge collaborative, but special mention should go to our patient representatives, Jenny Dorey and Irene Leeman, who keep us grounded, and our research fellows James Bedford, Arun Sahni, Duncan Wagstaff, David Gilhooly, Maria Chazapis and Aleksandra Ignacka.

We have been setting up a new project to evaluate care of children undergoing emergency abdominal surgery for the past 18 months. CASAP (Children's Acute Surgical Abdomen Programme) will launch in 2019 and will run for 6 months in the first instance to help us establish the feasibility of running a 'NELA for kids' in the UK. We look forward to launching an organisational survey (delivered by Andy Selman, PATRN co-chair) in February and getting going with the main patient study, by Amaki Sogbodkor and Cyrus Razavi, in the spring.

Defining quality

Work on the Core Outcome Measures in Perioperative and Anaesthesia Care (COMPAC) and Standardised Endpoints in Perioperative care (StEP) programmes has continued apace. COMPAC is in its final stage now, with patient interviews taking place in Spring 2019 to help us co-produce a shortlist of the most important outcomes to measure in clinical trials in perioperative medicine. The StEP programme, led jointly by Mike Grocott and Paul Myles, has already started reporting its outputs through a series of papers in the *BJA* – therefore moving the whole speciality forward by unifying how we define different outcome measures, so making clinical trials easier to compare and interpret.

Communicating widely

The HSRC's work has featured heavily in the lay and professional media. Data collected in SNAP-1, which evaluated patient-reported outcome after anaesthesia care, was used to inform the development of the RCoA's new 'Fitter Better Sooner' patient information toolkit. SNAP-2's first manuscript, an analysis of rates, reasons and risk factors for cancellation of inpatient surgery, was published in September and was reported on in every national newspaper, the BBC news website, BBC

Radio 4 Today programme and multiple local radio news programmes. Data from PQIP is being used to drive national policy discussions about how to optimise patients before surgery and reduce complications. In addition, compliance with NELA standards will form the basis of a best practice tariff which will start in 2019, again demonstrating the value of HSRC work on driving national policy and quality agendas.

Developing people

We have seen a huge transition in terms of leadership and staffing since the last NIAA review. I took over from Mike Grocott as Director in April 2016, and shortly after, Iain Moppett took on the role of Deputy Director (stepping into the main leadership role for 6 months while I took maternity leave, for which I was enormously grateful!). We have continued to recruit clinical research fellows, and excitingly, have now established partnerships with various NHS hospitals throughout the UK to provide opportunities for the fellows to be based outside London. We continue to maintain contact with our earliest fellows – Matt Oliver (the first HSRC fellow, working on NELA) is now the NELA research lead; Olly Boney, despite returning to clinical practice is still working on COMPAC and contributing to the HSRC more generally. Our fellows are our most precious and valued resource and we are enormously grateful for the work they put into developing and delivering our projects on behalf of the NHS.

Above all, our thanks to the staff at the RCoA, in particular Sharon Drake, James Goodwin, Jose Lourtie, Laura Farmer, Trevor Corrithers, Karen Williams, Alexandra Brent and Dorian Martinez for doing all the hidden work that keeps these projects on the road. Thanks too to Bob Evans, who provides such important feedback from the lay perspective on all our activities through his membership of the HSRC Board. And finally, a massive thank you to the thousands of frontline staff without whom the HSRC could not deliver any of its work.

Quality measures in anaesthesia and perioperative care



Dr Carolyn Johnston
Chair, Quality Working Group

The Quality Working Group has developed from the Quality Advisory group, established by the Health Services Research Centre and the RCoA, to support the HSRCs strategic aims, in particular ‘developing people’.

Quality Improvement is now established as part of the expected activities from an anaesthetic department, both based on local priorities and through national RCoA projects like ACSA, NELA, PQIP and others. Training in QI methodology is currently an optional part of Annex G of the RCoA curriculum, however the Academy of Medical Royal Colleges are currently developing a curriculum in QI that builds on their previous work and links with the GMC core curriculum for all doctors. The Quality Working Group has produced some guidance for trainers and trainees for undertaking QI activity and submitting that work as part of their ARCP, which has been endorsed by the RCoA Training Committee (www.rcoa.ac.uk/document-store/guidance-the-assessment-of-qi-activities). The working group has also established links with NHS Improvement’s Quality, Service Improvement and Redesign (QSIR) programme, and was able to offer three places on the ‘QSIR college’ training to anaesthetists. This is a series of development workshops and subsequent assessment to train delegates to deliver the NHS Improvement accredited QSIR course, and so broaden the access to QI training in the speciality.

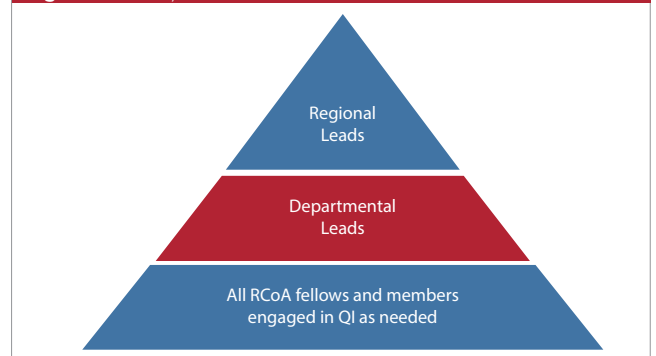
The group is also planning for the next edition of the RCoA Compendium of Audit Recipes, linking the content more closely with GPAS guidelines, and adding a quality improvement focus to the audit ‘recipes’.

This year, the PRISM (Perioperative Improvement Science and Management) learning module (www.prism-ed.com) has been incorporated into Health Education England’s e-Learning for Health platform, as part of e-Learning Anaesthesia. This means the content will be open to all those who have access to the portal (not just in anaesthesia), and that users can create a formal log of learning activity on the platform.

The most significant development in the past year is the development of the Quality Network. This network will help anaesthetists and network members share resources, learning and support for each other in undertaking improvement work. It will also help support training in quality improvement and promote a culture of quality improvement inside and outside the speciality. We undertook a RCoA membership panel survey in August to test the concept with the membership, and got an overwhelmingly positive response, with 90% members agreeing with the concept, and 80% telling us they wished to be actively involved.

We have recruited regional Quality Network leads from 19 of the 28 schools of anaesthesia. This group are now co-designing the shape and functions of the future network, which will recruit local leads from each trust later in 2018. Many of the regional leads, along with leads from the Research and Audit Federation of Trainees, perioperative medicine local leads and the Clinical Trials Network came together for a network leadership training day in April 2018, which will be invaluable in shaping our network so it will best meet the needs of the membership in undertaking successful improvements in their workplace.

Figure 1 Quality Structure Network





NIAA founding partners impact statements

The National Institute of Academic Anaesthesia was formed in 2008 through the collaboration of four key founding partners. Here, representatives from each founding body reflect on the first 10 years of the NIAA

ASSOCIATION OF ANAESTHETISTS ANAESTHESIA

**Dr Ravi Gill, Dr Matt Davies – Association of Anaesthetists
Research and Grants Committee**

Dr Andrew Klein – *Anaesthesia* Editor-in-Chief

The Association of Anaesthetists and *Anaesthesia* are two of the founding partners of the NIAA. The Board, fulfilling its charitable aims, sets aside a yearly budget of £200,000 (in 2018) to support research grants and awards, managed by its Research and Grants Committee. At least two members of the Committee, including the Chair, and two Editors of *Anaesthesia*, are involved with the grant review process along with the NIAA, and determine what funds are available for each research call. Grants are awarded on a competitive basis for proposals that meet the Association of Anaesthetists' research priorities. These are: patient safety; innovation; clinical outcomes; education and training; related professional issues (e.g. standards and guidelines, working conditions, medicolegal issues, etc); the environment; and, network based or other audits, or QA/QI projects that may involve guideline implementation.

The Association of Anaesthetists and *Anaesthesia* support collaborative grants, and recently jointly funded projects with the Association of Cardiothoracic Anaesthesia and Critical Care and with the Difficult Airway Society, and in the future with our industry partners, BAREMA.

In addition, the Association of Anaesthetists supports the John Snow Anaesthesia Intercalated BSc Awards each year, generating future researchers from today's medical students.



**Association
of Anaesthetists**

Anaesthesia

Peri-operative medicine, critical care and pain

BRITISH JOURNAL OF ANAESTHESIA (BJA)

Prof Michel Struys, BJA Grants Officer

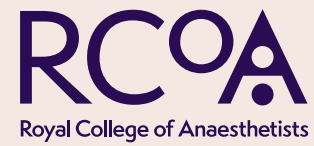
The Board of the *British Journal of Anaesthesia* has always fully supported the concept of the NIAA. The Board's grants officer is an integral part of co-ordinating the peer review of all grants within the NIAA. By demonstrating the robust review of the grant applications and selection of those awarded 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. By coming within one umbrella organisation there are considerable advantages arising as a result of scale and also in this regard the BJA Board recognises the excellent support provided by the NIAA secretariat.

BJA

British Journal of Anaesthesia

ROYAL COLLEGE OF ANAESTHETISTS

Professor Judith Hall, RCoA Member of Council



The Royal College of Anaesthetists (RCoA) has supported the NIAA from the very beginning. By participating in this partnership, we have committed to increasing standards of care for patients by carrying out high quality science and audit.

The NIAA plays a key role in the College's delivery of its primary charitable objective: to advance, promote and carry out study and research into anaesthesia and related subjects and to disseminate the useful results of such research.

The RCoA is a committed funder of the NIAA's most impactful projects. Particular examples of success, in collaboration, include our funding of the Health Sciences Research Centre (HSRC) and the Perioperative Medicine Clinical Trials Network (POMCTN). HSRC activities directly reflect our College's aims as an organisation, in promoting patient safety, effectiveness of care and the experience of patients.

The National Audit Projects (NAP) are an important part of the portfolio supported by the College. Each NAP has changed practice, impacting positively on Anaesthesia care, in the UK and globally. The rigour of methods and execution have ensured the credibility of the findings and that recommendations are adopted.

The College is proud to be a founding partner of the NIAA and looks forward to ongoing collaboration for the future good of our patients.



NIAA funding partners impact statements

ASSOCIATION FOR CARDIOTHORACIC ANAESTHESIA AND CRITICAL CARE (ACTACC)

Dr Gudrun Kunst, ACTACC Committee



The objective of the Association for Cardiothoracic Anaesthesia and Critical Care (ACTACC) is to promote the highest standard of management and care for patients suffering from cardiothoracic disorders, and in particular those undergoing cardiac or thoracic surgery. This objective has been supported by our collaboration with the NIAA during the last ten years resulting in a formalised externally peer reviewed grant application process for funding of ACTACC research projects.

ACTACC was one of the first subspecialist societies to join the NIAA and ACTACC representation on the NIAA Board was facilitated during the first year of the NIAA.

Overall, there have been eight ACTACC Project Grant calls, of which two were joint funds in collaboration with the VASGBI/BJA and the Association of Anaesthetists. The projects were supported with funds between £5,000 and £44,000 and they were competitive with an average of five applications for each call. Projects in all areas of cardiothoracic anaesthesia were successful in receiving ACTACC project grants including near-infrared reflectance spectroscopy (NIRS) in paediatric cardiac surgery; high flow nasal oxygen in patients after lung resection surgery; right ventricular response and inflammation after thoracic surgery; a structured call system in the management of acute severe cardiogenic shock; preoperative anaemia and iron treatment in patients undergoing vascular or cardiac surgery; and the comparison between propofol and inhalational anaesthesia on postoperative cardiovascular complications in cardiac surgery.

In the future, we may see more and more joint project grants across different anaesthesia societies, pump priming projects that could eventually result in large multicentre grant applications. Our aim will continue to be the support of high quality collaborative clinical and translational research in cardiothoracic anaesthesia and critical care locally and nationally through the Clinical Trials Network with subsequent high quality research output.

ASSOCIATION OF PAEDIATRIC ANAESTHETISTS OF GREAT BRITAIN AND IRELAND (APAGBI)

Dr Thomas Engelhardt, Dr Suellen Walker – APAGBI Council



The Association of Paediatric Anaesthetists of Great Britain and Ireland became a funding partner within the NIAA in 2011. Since then, six grants totaling £131,292 were awarded via this partnership. As part of the NIAA funding rounds, the APAGBI was able to benefit from the centralised mechanisms for grant submission, allocation of peer reviewers and the compilation of reviewer comments. This allowed the conduct of large NIHR adopted national paediatric anaesthesia projects such as NEonate-Children audit of Anaesthesia pRactice IN Europe (NECTARINE) and Children's Acute Surgical Abdomen Programme Pilot (CASAP).

One 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 remain a particular advantage to successful grant awardees. The APAGBI will continue this association with the NIAA, and participate in grant rounds as often as possible based on the availability of APAGBI research funds.

BRITISH SOCIETY OF ORTHOPAEDIC ANAESTHETISTS

Dr Bernadette Ratnayake, President BSOA



Trauma and Orthopaedic anaesthesia is one of the largest specialities that encompasses almost all anaesthetists. BSOA recognises this and endeavour to promote knowledge, education and improvement of quality and safety by encouraging and supporting research in the wider context.

Our annual scientific meeting has a session dedicated to original research by trainees.

BSOA has been a funding partner since 2014. Joining the NIAA has enabled us to scrutinise our grant applications by an independent academic body therefore raising the quality and impact of research studies. We also recognise the importance of the research body particularly because it brings the funds together for larger combined projects.

In 2018, we awarded a grant to the Perioperative Quality Improvement Programme (PQIP) to specifically research which perioperative factors increase complexity and influence quality of life outcomes in revision lower limb arthroplasty.

BSOA looks forward to working collaboratively with NIAA in the future to promote research in specialist orthopaedic surgery / anaesthesia and outcomes after trauma surgery. We will continue to financially support good quality research with high impact on patient outcomes and safety.

DIFFICULT AIRWAY SOCIETY (DAS)

Professor Tony Wilkes, DAS Scientific Officer



The Difficult Airway Society (DAS) is likely the largest single specialist society in anaesthesia in the UK, with ~3,400 members. Through its main committee and annual scientific meetings, DAS supports research and audit, formulates clinical guidelines and provides advice to the profession on a range of matters relating to airway management (see www.das.uk.com).

DAS supports research projects through the DAS Project Grants and DAS Small Grants initiatives.

Both are administered through the NIAA and provide a robust, transparent and efficient method of assessing applications. An added advantage for DAS is that Project Grants have the potential to be enhanced by the NIAA's partner status with the NIHR.

Progress of projects is monitored by the DAS Committee and it is known that projects are completed and presented at DAS Annual Scientific Meetings and go on to be published in peer-reviewed journals. Furthermore, the Small Grants initiative has been very effective in enabling a wide range of projects to be started, thus introducing many trainee anaesthetists to academic research for a comparatively small outlay. The partnership with NIAA also facilitates closer contact with other specialist societies so that we can together to seek common ground in research, academic and educational projects.

NEUROANAESTHETIC AND CRITICAL CARE SOCIETY OF GREAT BRITAIN & IRELAND (NACCSGIBI)

Dr Matt Wiles, NACCSGIBI Council Member



The objectives of the NACCSGIBI, 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 it, culminating in the award of a named prize for the best paper.

Joining the NIAA has enabled the Society to provide funding for more complex research within a forum for scrutiny of proposed projects by an independent academic body. The provision of a robust peer review process is a particular benefit. 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. As a small charitable society, our research funds are limited (about £20,000 per annum). Working within the NIAA has enabled us to fund studies in partnership with other members of the NIAA, thereby allowing us to fund significantly larger and more clinically relevant research projects.

OBSTETRIC ANAESTHETISTS' ASSOCIATION (OAA)

Dr Robin Russell, OAA Research and Grants Subcommittee Chair



The OAA is one of the largest UK anaesthetic subspecialty societies. Formed in 1969, it is a registered charity whose aim is to promote the highest standards of anaesthetic practice in the care of mothers and babies.

Research is key to advancing knowledge and improving care in obstetric anaesthesia. For many years the OAA has provided grants to support research projects. In 2009 the OAA joined the NIAA, recognising that this would be beneficial for the OAA's larger research grants.

Review of applications is shared by members of both the OAA and NIAA. The process is rigorous and robust and of benefit to applicants. Awards granted by the NIAA are recognised by National Institute of Health Research (NIHR) ensuring that obstetric anaesthesia projects receiving funding secure portfolio status. As a result additional funds may be secured from the NIHR clinical research network.

Over the past decade a number of important obstetric anaesthesia projects have been approved by the NIAA. Subjects under investigation include chronic pain after caesarean section, the use of cell salvage to reduce allogenic blood transfusion, molecular mechanisms of epidural-related maternal pyrexia and the effects of maternal anaesthesia on neonatal outcomes.

REGIONAL ANAESTHESIA UK (RA-UK)

Dr Alan Macfarlane, RA-UK Board

The aim of RA-UK is to advance both standards and education in Regional Anaesthesia. Regional anaesthesia however is also linked to many of the recent NIHR top ten research priorities and there continue to be exciting developments in the field with the introduction of new technology, new blocks and ongoing work investigating the potential patient and surgical outcome benefits of regional anaesthesia.

Although RA-UK has a limited budget to support research the society was still keen to become one of the subspecialty NIAA funding partners and joined in 2011. As a smaller society there are significant benefits to this including access to an externally managed peer-review process and the chance to foster relationships and receive advice from leading UK academics. Being a funding partner also provides RA-UK with the opportunity to collaborate with other societies to offer larger, combined grants for more ambitious projects.

RA-UK is committed to continuing its partnership with the NIAA and looks forward to many successful years ahead of promoting and supporting research in the field of regional anaesthesia.



VASCULAR ANAESTHESIA SOCIETY OF GREAT BRITAIN AND IRELAND (VASGBI)

Dr Ronelle Mouton, VASGBI Research & Audit Committee Chair

VASGBI aims to improve patient care through supporting collaborative research. Over the last four years VASGBI has invested more than £100,000 in research grants. Being a funding partner of the NIAA and presentation on the NIAA Research Council brought access to an extremely well-managed external peer-review process and NIAA grant panels whose diverse membership and skills provide an opportunity to develop collaborative links with other societies.

VASGBI also offers trainee research and audit development grants to support research and audit projects in the field of vascular anaesthesia undertaken by anaesthetic trainees. This scheme that was launched in 2015 has been awarded NIHR Portfolio status. The main remit of these departmental grants is to support trainee development under the supervision of established consultants. These are advertised on the Society's website with closing date for submissions at the end of January each year.

To further encourage high quality research and audit, VASGBI awards both free paper and poster prizes shortlisted for presentation at the annual VASGBI conference.



NIAA grant holders



AAGBI SURVEY: UPPER LIMB DISORDERS (ULDS) IN ANAESTHETISTS

Award: AAGBI/Anaesthesia Research Grant, 2016 Round 2

Principal Investigator: Dr Surrah Leifer, Lancashire Teaching Hospitals NHS Foundation Trusts

Anecdotally, anaesthetists are prone to ULDs, possibly related to repeated/prolonged poor posture. This may impact service provision and patient safety. We conducted an online survey of AAGBI members, asking about demographics, any formal diagnosis of ULD and treatment received. Results revealed ~1/3 had been formally diagnosed, a higher incidence than in the general population. There were significant associations with years of practice, parenthood (irrespective of number of children, or gender) and right-handedness. The latter may be linked to ergonomics of the workplace, and is worthy of further investigation. feasibility of their use after major abdominal surgery.



EMERGENCY LAPAROTOMY FOLLOW UP STUDY – A FEASIBILITY OBSERVATIONAL STUDY INTO THE MEDICAL, FUNCTIONAL AND SOCIAL CONSEQUENCES OF MAJOR EMERGENCY ABDOMINAL SURGERY DURING THE FIRST YEAR OF RECOVERY

Award: AAGBI/Anaesthesia Research Grant, 2016 Round 2

Principal Investigator: Dr David Saunders, Royal Victoria Infirmary, Newcastle upon Tyne

Emergency laparotomy (EL) is a common procedure with a high mortality risk, especially in the elderly – far higher than almost all elective surgery. But largely missing from the literature is detail about ongoing morbidity, functional ability, and the quality of life implications for patients who have undergone EL. It is unclear whether it is feasible to collect patient-reported outcome measures around the time of emergency surgery, nor is it clear whether or not this is a valid thing to do. Supported by a grant from the AAGBI and *Anaesthesia*, we have successfully recruited 70 patients that have undergone EL at a single centre, into a year-long observational study about their quality of life following discharge from hospital. We expect follow up work to be complete by November 2018 and aim to have data analysis ready for publication a few months later.



DO CYCLOOXYGENASE INHIBITORS DECREASE HUMAN CORE TEMPERATURE DURING EXPOSURE TO OPERATING ROOM TEMPERATURES? IMPLICATIONS FOR HYPOTHERMIA AND PRE-EMPTIVE ANALGESIA

Award: RA-UK Project Grant, 2016 Round 1

Principal Investigator: Dr Loukia Tsaprouni, Birmingham City University

Inadvertent perioperative hypothermia is common in patients undergoing regional anaesthesia. The use of cyclooxygenase inhibitors in pre-emptive/preventative analgesia may exacerbate reductions in core temperature and alter blood coagulation status. We evaluated the safety of COX inhibitors in the operative environment, by administering aspirin (COX-1 inhibitor) and celecoxib (COX-2 inhibitor) to healthy subjects. Core temperature, shivering intensity and blood coagulation status were monitored.

Our findings suggested that the use of COX inhibitors in pre-emptive analgesia might contribute to the occurrence of hypothermia. Further studies are required to confirm this in order to allow anaesthetists to make decisions in regards to what type of pain reliever is administered to patients during surgery.

NIAA grant holders



DIRECT REPORTING OF AWARENESS IN MATERNITY PATIENTS (DREAMY)

Award: OAA Large Project Grant, 2016 Round 1

Principal Investigator: Dr Peter Odor, St. George's University Hospital London

The RCoA's 5th National Audit Project (NAP5) highlighted maternity patients as being at disproportionately high risk for accidental awareness under general anaesthesia (AAGA), but may have underestimated incidence by collecting only reports spontaneously volunteered by patients.

DREAMY was developed as a comprehensive response to the problem of AAGA in obstetrics: a national, trainee-led research study to measure AAGA incidence with 'Thrice Brice' active screening, targeting early identification, verifying reports via independent interviews and measuring markers of psychological harm. The study is also engaging clinicians and supporting patients alike with NAP5 recommendations. Recruitment to DREAMY closes in Aug 2018, with 3,000 consenting patients expected.



COMPARISON OF SAGITTAL VERSUS TRANSVERSE ULTRASOUND TECHNIQUES IN IDENTIFYING THE CRICOTHYROID MEMBRANE IN PATIENTS WITH NECK PATHOLOGY

Award: Difficult Airway Society Small Grant, 2016 Round 1

Principal Investigator: Dr Chia Kuan Yeow, Royal Surrey County Hospital

The cricothyroid membrane is usually inaccurately identified with the landmark technique, especially in obese subjects. Both sagittal and transverse ultrasound techniques have been described to identify the cricothyroid membrane, with high accuracy rate. We wanted to explore the usage of these ultrasound techniques in identifying the cricothyroid membrane in two patients with neck pathology. Our study showed a mixed result, with transverse technique more accurate (50%) than the sagittal technique (45%) in the first patient but the sagittal technique was more accurate (78%) than the transverse technique (68%) in the second patient. We concluded that the most predictive factor in accurately identifying the cricothyroid membrane is the subject itself.



MELATONIN AS A POTENTIAL TREATMENT FOR SEPSIS: METABOLOMIC CONSEQUENCES OF HIGH ORAL DOSING

Award: BJA/RCoA Project Grant 2016 Round 1

Principal Investigator: Professor Helen F. Galley, Institute of Medical Sciences, University of Aberdeen

Melatonin is a potent antioxidant which appears to be very safe and clinical trials are underway although metabolic consequences of melatonin administration are unknown. Metabolomics can identify and quantify thousands of metabolic pathways after administration of drugs. Metabolomic analysis of serum samples from a previous phase I trial was undertaken and metabolites were verified against the KEGG database. Differences were identified and relevant pathways interrogated across connected metabolites. Melatonin administration did not affect overall metabolic processes. Melatonin and its metabolites had dose response patterns consistent with previous analysis. No potential for bioactivation or macromolecule adducts was identified. This work confirms the excellent safety profile of this drug.

NIAA grant holders



THE INCIDENCE OF CHRONIC HEADACHE AND LOW BACK PAIN AFTER ACCIDENTAL DURAL PUNCTURE WITH A TUOHY NEEDLE AND EPIDURAL BLOOD PATCH IN THE OBSTETRIC POPULATION: A PROSPECTIVE 2-GROUP COHORT STUDY

Award: AAGBI/Anaesthesia Research Grant, 2016 Round 1

Principal Investigator: Dr Niraj Gopinath, University Hospitals of Leicester NHS Trust

Epidural analgesia is one of the most frequently used modalities for providing pain relief during labour. Accidental dural puncture (ADP) is a well-recognized complication of the technique and over two thirds of these patients develop postdural puncture headache (PDPH).

It is generally accepted that PDPH is a self-limiting condition. However there is emerging evidence from retrospective studies that PDPH following ADP can result in chronic headaches. Our study is an on going multicentre prospective trial looking at the incidence of chronic headaches and chronic low back pain at 18 months following accidental dural puncture with a 16g Tuohy needle.

THE IMPACT OF RESTRICTIVE VERSUS LIBERAL TRANSFUSION STRATEGY ON CARDIAC INJURY IN PATIENTS UNDERGOING SURGERY FOR FRACTURED NECK OF FEMUR: A FEASIBILITY STUDY (RESULT-NOF)

Award: BJA/RCoA Project Grant, 2016 Round 1

Principal Investigator: Dr Michael Gillies, Royal Infirmary of Edinburgh

65,000 patients undergo surgery for fractured neck of femur (NOF) every year. These patients are high-risk, elderly, and have co-existing cardiac disease. There is a high prevalence of pre-existing anaemia, and fracture- and surgery-associated bleeding result in high transfusion rates. The need for more evidence around the best transfusion strategy in these patients is highlighted in recommendations from the NICE and the AAGBI, who suggest a restrictive transfusion practice, but both recommend caution for patients with cardiovascular disease.

RESULT-NOF is now half-way through recruitment of a 200 patient feasibility study of restrictive versus liberal transfusion strategy in patients undergoing surgery for fractured NOF using cardiac injury as the primary outcome.

MULTIDISCIPLINARY WORKING ACROSS PERIOPERATIVE MEDICINE AND PRIMARY CARE: A HEALTH INFORMATICS FEASIBILITY STUDY

Award: BJA/RCoA Project Grant, 2016 Round 1

Principal Investigator: Dr Simon Howell, St James's University Hospital, Leeds

Primary care in the UK generally uses high-quality electronic patient records. It is likely that the primary care patient record contains information that would be valuable in judging the patient's fitness for surgery. In the ideal world there would be a seamless connection between the primary and secondary care medical records. In practice the systems generally do not talk to each other. In this project we have used a large anonymised database of primary care consultation records to demonstrate the feasibility of using information recorded in general practice to support preoperative risk assessment.



NIAA Research Award



Professor Fang Gao
Chair, NIAA Research Award

The UK specialty of anaesthesia, perioperative and pain medicine has talent in both basic and clinical research. They continue to grow up well on the way to become an independent strong research leader for many years to come.

The NIAA Research Award was launched at the inaugural NIAA Annual Scientific Meeting in 2016, at the Royal College of Anaesthetists. www.niaa.org.uk/NIAA-Research-Award-2018

The Award is open to all current UK researchers in anaesthesia, perioperative and pain medicine. Applicants were invited to submit a summary of their body of work – typically the equivalent to two or more research papers on one subject area or from a higher degree thesis (MD/PhD). At the Annual Scientific Meeting, the finalists' presentations were judged for excellence in scientific research by three nominated judges. The winner is selected on the day and there is an honorarium of £500.

2016 Research Award

For the inaugural Research Award, seven applicants presented their MD/PhD work in the areas of microcirculatory blood flow in hypoxia, cardiac functions following cardiac surgery, cellular functions of monocytes, neutrophils or lymphocytes in perioperative infection and sepsis and quality improvement care bundles in emergency surgery. The judging panel included Professor R Pearse, Director of POMCTN, Professor A Klein, *Anaesthesia* Editor-in-Chief and Dr B Jenkins, *Anaesthesia* Editor. The runner-up was Dr Jaimin Patel, Birmingham University, for his presentation 'Statins in sepsis – investigating the role of simvastatin in the modulating neutrophil function in healthy ageing and sepsis. The winner was Dr Pervez Sultan, UCL, for his presentation 'Acquired hypometabolism in lymphocytes underlies postoperative immunosuppression and risk of infection.'

2017 Research Award

Amongst seven candidates, three finalists included Dr A Docherty (myocardial Injury in critically ill patients,) University of Edinburgh, Dr B Shelley (right ventricular function following lung resection,) University of Glasgow and Miss CE Warnaby, University of Oxford. Detailed panel feedback was sent to those who weren't shortlisted.

The finalists made excellent presentations at the 2nd NIAA Annual Scientific Meeting in May 2017. The winner was Miss Warnaby for her PhD work on 'slow wave activity saturation (SWAS) as a marker of perception loss under anaesthesia.'

The Research Journey after the Award

As an obstetric consultant anaesthetist at University College London Hospital, Dr Pervez Sultan leads the obstetric anaesthesia research with a national role in the Society for Obstetric Anaesthesiology and Perinatology (S.O.A.P.) research committee and a role in the International Task Force Committee for developing monitoring recommendations following obstetric neuraxial morphine administration.

After completion of NIHR Clinical Lecturer post, Dr Jaimin Patel has taken up a Clinician Scientist post at the University of Birmingham. His research interests are focused around outcomes from emergency and major abdominal surgery, as well as sepsis and ARDS. Jaimin has been appointed to the POMCTN Board to take a national role in development of perioperative research.

CE Warnaby has taken the post of Senior Research Scientist in Anaesthesia, recently succeeded in securing a Medical Research Council (MRC) Development Pathway Funding Scheme grant.

NIAA Research Award



DR PERVEZ SULTAN, UNIVERSITY COLLEGE LONDON

Since winning the NIAA research award in 2016, I have been appointed to the Society for Obstetric Anaesthesiology and Perinatology (SOAP) research committee and I am currently one of nine international task force committee members developing monitoring recommendations following obstetric neuraxial morphine administration.

I feel privileged to lead the obstetric anaesthesia research efforts at University College Hospital. In this role, I have had the pleasure of mentoring four excellent Fellows, without whom our research efforts would not have been possible. We are currently collaborating on projects exploring various aspects of recovery following caesarean delivery with colleagues from Stanford University, Duke University, Universities of Miami and Arkansas and Sunnybrook Toronto. We also have five clinical studies currently running and are in the process of applying for three grants to help us explore different ways of improving postoperative functional recovery and perioperative morbidity following obstetric surgery.

My next goal is to investigate aspects of immune recovery following caesarean delivery with colleagues from Stanford University using single-cell immune profiling with mass cytometry and high-dimensional modelling techniques – watch this space!



DR JAIMIN PATEL, UNIVERSITY OF BIRMINGHAM

I was a runner-up at the inaugural NIAA Research Award in April 2016, where I presented translational studies on neutrophil functions in sepsis and their modification with simvastatin. Since then I have completed my training as an NIHR Clinical Lecturer in Anaesthesia and ICM and have taken up a Clinical Academic post at the University of Birmingham with an Honorary Consultant post at the University Hospitals Birmingham NHS Foundation Trust. My research interests are focused around outcomes from emergency and major abdominal surgery, as well as sepsis and ARDS.

The NIAA Research Award was an excellent platform for me to disseminate the research findings that I had conducted during my training. It was also great to see the high-quality research that my peers had conducted and to engage with them. Finally, presenting at this unique meeting for anaesthesia raised my academic profile within the speciality which has helped me develop important collaborations since.



DR KATIE WARNABY, UNIVERSITY OF OXFORD

In May 2017, I received the NIAA research award for my work using human brain imaging to investigate mechanisms of anaesthesia. It was a great honour to accept the award on behalf of the multidisciplinary team involved in the research, especially in light of such strong competition. It has been a busy year since the award that has been mostly spent setting up the next set of patient and healthy volunteer studies, ably assisted by my two new PhD students.

In September 2017, I was invited to present as the award winner in the NIAA session at the AAGBI Scientific Meeting in Liverpool. I also received confirmation that month I had been awarded a Medical Research Council (MRC) Development Pathway Funding Scheme grant. This grant will focus on the development of slow wave activity saturation as a marker of depth of anaesthesia and will start in June 2018. We aim to develop a prototype depth of anaesthesia monitor and demonstrate its clinical efficacy in a feasibility study of 200 patients.

Finally, I presented at the Anaesthetic Research Society and *British Journal of Anaesthesia* on 30 May 2018 to help launch the NIAA/NIHR CRN Experimental Medicine: Anaesthesia, Perioperative Medicine and Pain sub-group.

British Oxygen Company (BOC) Grant 2015



ANGIOTENSIN MEDIATED CELLULAR DYSFUNCTION AND PERIOPERATIVE MORBIDITY

Award: British Oxygen Company (BOC) Research Grant

Principal Investigator: Dr Gareth Ackland, Queen Mary University of London

Around 40% of higher-risk surgical patients are prescribed angiotensin-converting-enzyme inhibitors (ACEi) or angiotensin-II receptor blockers (ARB). The benefits of ACEi/ARBs in hypertension, ischaemic heart disease, heart failure, diabetes mellitus and renal disease are well-recognised. More patients are likely to receive ACEi/ARBs given landmark trials supporting more aggressive long-term control of blood pressure. However, continuation of ACEi/ARBs during the perioperative period remains controversial.

Conflicting data exists concerning the perioperative management of ACEi/ARBs. Three systematic reviews conclude that the evidence surrounding perioperative ACEi/ARB use is characterised by retrospective, observational studies of low methodological quality, high risk of bias and a lack of power to explore objective outcomes (most notably, postoperative morbidity). Although early-phase, small observational clinical studies reported an association between ACEi/ARBs and perioperative hypotension, more recent large clinical database studies using objective outcome measures question this. Failure to restart ACEi/ARB therapy after surgery, and not stopping ACEi/ARBs before surgery, may be linked to excess postoperative mortality. Coupled with a lack of randomised controlled trials using blinded outcomes, the highly variable pharmacokinetic characteristics of ACEi/ARBs highlight that an enhanced understanding of perioperative ACEi/ARB biology may reduce morbidity.

Through a phase II randomised controlled trial (ISRCTN17251494) and complementary laboratory studies, I am exploring how acute withdrawal of ACEi/ARB (in the context of angiotensin receptor up-regulation as a result of chronic ACEi/ARB therapy) may alter perioperative cardiovascular morbidity/inflammation in patients with established cardiorenal disease. This approach is designed to rationally inform future trials that provide robust, mechanistically sound changes in perioperative practice.

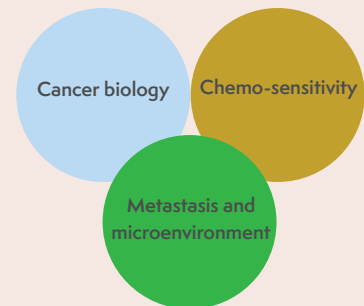


PRECISION ANAESTHESIA: ANAESTHETICS AND CANCER CELL BIOLOGY

Award: British Oxygen Company (BOC) Research Grant

Principal Investigator: Prof Daqing Ma, Imperial College London

Cancer is the second most common cause of death worldwide, with the largest mortality attributable to solid organ tumours of breast, lung, colorectal, prostate and gynaecological origins. The award of British Oxygen Company (BOC) Chair grant, Royal College of Anaesthetists through NIAA in 2015, was granted to investigate 'Precision Anaesthesia' through defining any possible effects of anaesthetics on cancer cell biology.



Since then, I have built up a dedicated research team to further the understanding of this hugely important topic both mechanistically and clinically. It was proposed to investigate into the effects of exposing a variety of cancer cells (breast, colorectal, prostate and lung) to routine anaesthetics in order to obtain a definitive answer at pre-clinical level whether commonly used anaesthetics can increase risk of metastasis for cancer patients with the highly complementary three aims. The data derived from the project will support further clinical trials and ultimately change medical practice to benefit cancer patients.

This project is likely to yield evidence that may ultimately be used to guide clinical practice, in order to design the most suitable anaesthetic strategy for cancer patients undergoing surgery. Given the wide choice of anaesthetic agents and techniques currently available, it is conceivable that such a change to anaesthetic practice would be feasible and inexpensive to implement. The impacts of this research are likely: 1) to change anaesthesia and perioperative care for cancer patients; 2) to find molecular targets for the development of next-generation anti-cancer therapy; 3) to inform other cancer researchers how to choose anaesthetics for their research.

John Snow intercalated award winners 2016–17



A STUDY TO ASSESS THE CLINICAL AND SOCIOECONOMIC EFFECTS OF AN ELECTRONIC PREOPERATIVE ASSESSMENT TOOL: EPAQ-PO

Award: AAGBI/Anaesthesia funded John Snow Anaesthesia Intercalated Award 2016

Principal Investigator: Miss Sarah K Taylor, Hull-York Medical School

Pre-operative assessment (POA) is an essential component of elective anaesthetic care. ePAQ-PO is a new, electronic POA questionnaire which involves a computer-based assessment prior to a shortened consultation with a staff nurse. Standard POA requires a longer appointment, including physical examination, with a nurse practitioner.

This project showed that the use of ePAQ-PO in low risk patients, even allowing for the four-minute physical examination in standard consultations, reduces the length of POA consultation by approximately 40%, without impacting patient satisfaction. Hence, this electronic questionnaire presents an opportunity to increase the operational efficiency of a POA clinic without compromising patient experience.



WHAT IS THE ASSOCIATION BETWEEN INTENSIVE CARE UNIT CAPACITY STRAIN AND MORTALITY IN SCOTTISH ADULT GENERAL ICUS? A COHORT STUDY

Award: AAGBI/Anaesthesia funded John Snow Anaesthesia Intercalated Award 2016

Principal Investigator: Mr Michael Blayney, University of Edinburgh

Intensive Care Unit (ICU) capacity strain is the concept that daily fluctuations in demand for critical care may affect patient outcomes. This study aimed to evaluate the association between ICU Strain and mortality in the Scottish ICU population.

The data were sourced from a database compiling every admission to Scottish ICUs from 2005-2015 (n=111,385). Multivariable logistic regression was used to evaluate the associations between three metrics of ICU strain (standardised census, proportion of new admissions, and daily occupancy), and in-hospital mortality. We found no association between ICU Strain and mortality, suggesting that Scottish ICUs may cope well with extra Strain.



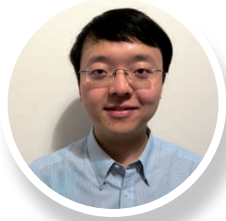
AN EXPLORATION OF THE RELATIONSHIP BETWEEN PATTERNS OF SEDATION DURING INTENSIVE CARE, EARLY PATIENT RECOLLECTION OF THE ICU EXPERIENCE, AND EARLY TRAUMA SYMPTOMATOLOGY AMONG SURVIVORS OF CRITICAL ILLNESS

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2016

Principal Investigator: Ms Sarah Train, University of Edinburgh

The psychological impact of ICU for survivors has negative long-term health consequences and may be related to exposures during ICU stay. Using a retrospective cohort study of a recent multi-centre sedation trial, we found significant frightening memories were experienced by 25-34% (assessed by two validated questionnaires at ICU discharge) of 517 adult ICU patients. There was no convincing association between any exposure variables (e.g. duration of stay; sedation depth) and frightening memories. Therefore, frightening memories after critical illness are common and unpredictable; routine assessment at discharge could enable early intervention, plus larger epidemiological study to further investigate potential risk factors.

John Snow intercalated award winners 2016–17



ACTIVATION OF LUNG-MARGINATED MONOCYTES IN INITIATING VENTILATOR-INDUCED EXTRA-PULMONARY INFLAMMATION

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2016

Principal Investigator: Mr WeiHong Du, Imperial College London

The initiation of ventilator-induced extra-pulmonary inflammation was predominantly explained by ‘decompartmentalisation’, but we believed this is in fact an active process. This mice-based in-vivo study investigated the hypothesis that high-stretch mechanical ventilation would activate lung-marginated monocytes (LMMs), which may then be important in orchestrating the extra-pulmonary inflammation. By using flow cytometer to measure cell-based phosphorylation states of MAPKs, we found that 15 minutes high-stretch ventilation activated LMMs, in the presence of subclinical dose of LPS. Future study needs to investigate the potential activating messengers, which would help us to devise therapeutic strategies to stop the initiation of ventilator-induced extra-pulmonary inflammation.

EFFECT OF LIVER DISEASE AETIOLOGY ON ROTEM® PROFILES IN PATIENTS UNDERGOING LIVER TRANSPLANTATION

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2016

Principal Investigator: Mr Ruairadh Campbell, University of Edinburgh

Coagulation abnormalities in liver transplant patients are complex and may be related to the underlying liver disease. This study evaluated the effects of liver disease aetiology on whole-blood rotational Thromboelastometry (ROTEM®) profile in a nationwide cohort of patients undergoing liver transplantation between 2012 and 2016.

We found that clotting parameters were significantly higher in patients with diseases of biliary aetiology than in patients with hepatocellular aetiology or those transplanted for hepatocellular carcinoma. This remained even after accounting for differences in fibrinogen level, platelet count and liver disease severity.

SENSORY MAPPING OF LUMBAR FACET JOINT PAIN

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2017

Principal Investigator: Mr Kasun Fernando, University of Aberdeen

In the two-step treatment of lumbar facet joint pain, the diagnosis is confirmed using temporary anaesthetic medial branch blocks followed by radiofrequency ablation (RFA). These medial branch nerve blocks have a high false-positive rate (up to 41%). In this pilot study we endeavoured to find out if electrical stimulation of the nerves supplying the lumbar facet joint could recreate and map out the pain the patient felt, and therefore more accurately select nerves to be ablated for more definitive pain management. Pain mapping was successfully achieved in 14 out of 15 cases, confirming the viability of this technique for RFA. The new guideline was easier to use.

John Snow intercalated award winners 2016–17



A FEASIBILITY STUDY TO REDUCE SELECTION BIAS AND IMPROVE EFFICIENCY IN OBSERVATIONAL STUDIES IN CRITICAL CARE: SUBPHENOTYPES OF THE ACUTE RESPIRATORY DISTRESS SYNDROME

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2017

Principal Investigator: Mr Jonathan Halcrow, Newcastle University Medical School

Large-scale, prospective cohort studies are required to confirm the existence of subphenotypes within ARDS. Such studies are challenging due to the unpredictable timing of patient presentation and by the patients' lack of capacity to consent. This project tested the stability of a variety of cytokines in EDTA blood samples stored under routine, laboratory conditions. Additionally, our Patient and Public Involvement group viewed delayed consent for the use of routinely collected samples to be acceptable. Combining delayed consent with the utilisation of surplus blood samples may prove an efficient study design and potentially reduce selection bias in future, large-scale observational studies.



NOVEL METHODS FOR QUANTIFICATION OF HEART RATE RECOVERY IN THE PERIOPERATIVE PERIOD; A VALIDATION STUDY

Award: BJA/RCoA funded John Snow Anaesthesia Intercalated Award 2017

Principal Investigator: Mr Christopher Morton, University of Glasgow

We hypothesise assessment of heart rate recovery (HRR) after exercise may be a potential tool for perioperative risk stratification. There is significant variation however in methodology for quantifying HRR, and no validated approach. This study sought to develop novel methods for quantifying HRR and assess their validity in the perioperative period. A novel effort-corrected area under the (HRR vs time) curve method (ECAUC) achieved face validity, but had limited construct validity and did not achieve predictive validity. This project led directly to a Medical Research Scotland Vacation Scholarship for a study assessing the reproducibility of the novel ECAUC method.

RCoA small research/travel grant award winners 2016–17



ASSESSMENT OF RV CONTRACTILE RESERVE ON EXERCISE FOLLOWING LUNG RESECTION - A PILOT STUDY

Award: RCoA Ernest Leach Fund, 2016

Principal Investigator: Dr Adam Glass, University of Glasgow

Our research group hypothesises that right ventricular (RV) dysfunction contributes to the decline in functional capacity that so greatly restricts patients following lung resection. Previously we demonstrated a deterioration in post-operative resting RV function.

In order to fully assess the role of the RV dysfunction we have undertaken a pilot exercise echocardiography study to assess RV response to exercise (RV contractile reserve) pre- and post-operatively.

We have completed recruitment and testing of patients. Completion of analysis and unblinding are ongoing. Whilst there are some suggestions of a loss of RV contractile reserve, we await the full results of the study.



SENIOR FELLOW ZAMBIAN ANAESTHETIC DEVELOPMENT PROJECT

Award: RCoA Sargant Fund, 2016

Principal Investigator: Dr Fozia Hayat, Mersey School of Anaesthesia

Responsibility for delivering educational opportunities and supervision of the Master of Medicine in Anaesthesia trainees, were amongst my many roles in the project. I coached and mentored trainees during the overhaul of their curriculum, which was an enriching experience for me and provided the required support for them.

I directed the SAFE OBS/Lifebox courses and facilitated the first Essential Pain Management (EPM) course to be delivered in Zambia. I guided trainees in adopting quality improvement (QI) principles, producing guidelines and empowering them in improving systems within which they operate. Additionally, I provided clinical support to enable trainees to fulfill their curricular requirements. I continue to have an ongoing commitment in leading the development of a patient safety and QI course to be delivered in Zambia.



PRESENTATION OF ORIGINAL WORK (RELATIONSHIP BETWEEN MITOCHONDRIAL DYSFUNCTION AND MORTALITY IN CRITICALLY ILL PATIENTS) AT AN INTERNATIONAL WORKSHOP ON HIGH-RESOLUTION RESPIROMETRY, IN AUSTRIA

Award: RCoA Belfast Fund, 2016

Principal Investigator: Dr Helen McKenna, Royal Free Hospital London

The syndrome of critical illness, which can result from many different triggering insults, is poorly understood at a cellular level. We made direct functional measurements from intact mitochondria in fresh skeletal muscle sampled from patients during the acute phase of critical illness. We demonstrated functional changes in specific intra-mitochondrial components within the first 48 hours of admission to the intensive care unit, which were associated with clinical outcomes.

The NIAA funded travel to present the findings of this study to the Mitochondrial Physiology Society, in Obergurgl, Austria, in June 2017. This conference, which includes a training school, forms the framework for an international collaboration between basic scientists and clinicians. It was an opportunity to develop techniques for future studies and to share expertise in the measurement of mitochondrial function, in different animal and cell models of disease, as well as in the clinical setting.

RCoA small research/travel grant award winners 2016–17



OBSTETRIC ANAESTHESIA & MODIFIED OBSTETRIC EARLY WARNING SCORE (MOEWS) IN THE GAMBIA

Award: RCoA Sargent Fund, 2016

Principal Investigator: Dr Jolene Moore, University of Aberdeen

This award enabled me to undertake a volunteer placement in The Gambia in December 2016. Maternal mortality in The Gambia remains high and studies have suggested the rates of maternal infections and sepsis are higher in The Gambia than in many other African countries. The purpose was to work alongside a local obstetrician and a visiting medical student to assess the feasibility of introducing a modified obstetric early warning score (MOEWS) system at a major referral hospital in The Gambia, which might lead to earlier case recognition and management. I thoroughly enjoyed my time and am grateful for this opportunity.



A PILOT PROJECT TO ASSESS THE IMPACT OF IN-SERVICE SIMULATION TRAINING ON THE ABILITY OF NON-PHYSICIAN ANAESTHETISTS TO SAFELY DEAL WITH CRITICAL INCIDENTS IN ANAESTHESIA

Award: RCoA Belfast Fund & Sargent Fund, 2016

Principal Investigator: Dr Adam Hewitt Smith, East of England Deanery

In Uganda, 90% of anaesthesia is delivered by non-physician providers working unsupervised in challenging, resource constrained environments. Continuing medical education opportunities are rare and to date none have focused on the management of critical incidents in anaesthesia. In this project we designed and piloted two novel, low fidelity simulation-based training courses that provide a unique continuing professional development opportunity for anaesthesia providers in low resource settings. Critical Incident Training in Anaesthesia (CITA) and Obstetric Anaesthesia (CITOA) run over two days and include skills teaching and simulation scenarios on emergencies such as laryngospasm and difficult airway. These courses have now been used to train all anaesthesia providers in eastern Uganda.

RCoA small research/travel grant award winners 2016–17



DESIGNING IMPROVEMENTS IN THE PERIOPERATIVE CARE OF CHILDREN USING FRAM ANALYSIS

Award: RCoA Ernest Leach Fund, 2017

Principal Investigator: Dr Danielle Franklin, Plymouth Children's Theatres, Derriford Hospital

Healthcare continues to put patients at risk of harm by poorly designed systems. In this study we applied a safety-II approach, which aims to understand how systems succeed through dynamic trade-offs and performance adjustments to meet the changing needs and demands of the system, understanding normal work. We used Functional Resonance Analysis Method (FRAM) to understand how work-as-done in preparation of a child for theatre.

A FRAM model of the system was constructed resulting in 23 co-designed improvement recommendations, 22 completed changes resulting in improved care for children undergoing surgery.

REDUCING POST-OP PULMONARY COMPLICATIONS FOLLOWING MAJOR SURGERY

Award: RCoA Sargant Fund, 2017

Principal Investigator: Dr Elizabeth Hood, University Hospitals Bristol

We were awarded a small grant to get our 'ICOUGH' reducing post-operative pulmonary complications project off the ground. The money was spent on posters, banners and incentive spirometers.

We generated a 'buzz' amongst our colleagues and launched the project enrolling our first 77 patients. Here we hit some setbacks finding many patients were expiring into the incentive spirometers instead of inspiring. Although the bundle is patient led, many patients wanted more direction from the nursing staff.

We paused to analyse the results and have found that our post-operative pulmonary complication rate seems to have climbed, from 18.75% to 29.1%. Time for a rethink and another relaunch...

ANATOMY FOR THE FRCA COURSE

Award: RCoA Belfast Fund, 2017

Principal Investigator: Dr James Bowness, Ninewells Hospital Dundee

RCoA Exam Reviews and Chairman's Reports regularly highlight that candidates struggle with anatomy in FRCA examinations. We designed a course for anaesthetic registrars, centred around MCQs, SAQs, SOEs and an OSCE, which prioritised clinically relevant anatomy and use of cadaveric material/models. A sonoanatomy session involved scanning volunteers, with concurrent demonstration of structures on cadavers.

This grant helped us deliver the day's teaching and refreshments, with a 1:1 ratio of delegates to experienced anatomy/anaesthesia faculty, at St Andrews University, for £75. We will run the course annually in March, with an accompanying book published by Cambridge University Press.

RCoA small research/travel grant award winners 2016–17



DRUG ERRORS IN PAEDIATRIC ANAESTHESIA: A CULTURAL BLIND SPOT? A SURVEY OF UK PAEDIATRIC ANAESTHETISTS

Award: RCoA Belfast Fund, 2017

Principal Investigator: Dr Zoë A Burton, Sheffield Children's Hospital

Drug errors within anaesthesia occur with alarming frequency and life-threatening drug errors occur more commonly in children. A survey relating to drug errors in paediatric anaesthesia was designed by the Paediatric Anaesthetic Trainee Research Network and distributed via iPads at the 2017 APAGBI conference.

Results showed 60% of respondents had been involved in at least one paediatric drug error in the last year. It identified calculation and dilution errors as the predominant type of error, followed by cannulae not being flushed and wrong drug administration. It highlighted distractions/interruptions, dose/dilution miscalculations and anaesthetist fatigue as the main causative factors.

The grant was used to present this work orally at the 2017 European Society of Paediatric Anaesthetists meeting in Glasgow.

Reference to published work: Burton, Z.A. et al. Drug errors in paediatric anaesthesia are common—but often unreported unless actual harm occurs. *BJA*, Vol 120, Issue 3, 600-601

SERRATUS ANTERIOR BLOCK AND CATHETER USE IN RIB FRACTURES IN THE EMERGENCY DEPARTMENT

Award: RCoA Sargent Fund, 2017

Principal Investigator: Dr Boyne Bellew, Imperial College Healthcare NHS Trust London

Pain from rib fractures can be severe and is traditionally treated with systemic analgesics or an epidural block. Opiates can work but it is often associated with problems. Epidural anaesthesia is effective in relieving pain but demands monitoring. Hospitals cannot always offer this service. Intercostal plane blocks has expanded the possibility of offering more patients analgesia. Many are already using these techniques and reporting success. We wanted to quantify whether one of these techniques – serratus anterior block – would be a reasonable alternative. The sonoanatomy of this block is easy to identify and allows for easy block administration and catheter insertion.

Reports from NIAA events

THE NIAA ANNUAL SCIENTIFIC MEETING

SALLY HUMPHREYS

RESEARCH SISTER/LEAD CLINICAL RESEARCHER
ANAESTHETICS, CRITICAL CARE SERVICES, DSU, ED AND MAIN THEATRES, WEST SUFFOLK NHS
FOUNDATION TRUST

The NIAA Annual Scientific Meeting was an exciting opportunity to hear about the current UK Perioperative Medicine Clinical Trails Network portfolio of studies and encouraged me to champion research that has the potential to improve patient and healthcare outcomes.

Enthusiastic, passionate speakers covered a range of perioperative research topics which fuelled my interest in research in this area. Clear, succinct, relevant up to date information interjected with useful examples were given in a user friendly manner. Leading clinical academics shared their research experience in a format that facilitated learning and enhanced and diffused evidence-based practice within perioperative care.

NIAA RESEARCH DAY FEEDBACK

DR IAIN J MCCULLAGH

CONSULTANT IN ANAESTHESIA AND INTENSIVE CARE
FREEMAN HOSPITAL, NEWCASTLE

We began with trials currently underway sponsored by the POMCTN and presentation of the major studies that the Network will develop with the help of its members. A selection of incredibly high quality research presentations followed. After lunch we heard from the HSRC, with both PQIP and SNAP-2 delivering at scale and receiving well deserved international attention as a result. It is easy to see the benefits such large scale collaborations could bring in coming years. Presentations by and for trainees closed the day; surely no other specialty trainee group has achieved as much as RAFT? I look forward to next year!

Board and Committee Members 2016–2018

NIAA BOARD

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National Institute of Academic Anaesthesia, Chair (to July 2018)

Dr Paul Clyburn

Association of Anaesthetists (to September 2018)

Mrs Jenny Dorey

Royal College of Anaesthetists, Lay Committee (from July 2017)

Ms Sharon Drake

Royal College of Anaesthetists, Director of Clinical Quality & Research (Co-opted member)

Dr Kathleen Ferguson

Association of Anaesthetists (from September 2018)

Mr James Goodwin

Royal College of Anaesthetists, Head of Research

Prof Mike Grocott

Health Services Research Centre Director (Co-opted member) (to April 2016)

The Royal College of Anaesthetists (to July 2018)

National Institute of Academic Anaesthesia, Chair (from July 2018)

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Anaesthesia, Editor-in-Chief

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British Journal of Anaesthesia (from March 2017)

National Institute of Academic Anaesthesia Research Council, Chair (Co-opted member) (June 2017– June 2018)

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Dr Ronelle Mouton

Specialist Society Representative (Co-opted member) (to March 2018)

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UK Perioperative Medicine Clinical Trials Network, Director (Co-opted member)

Prof Rob Sneyd

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Specialist Society Representative (Co-opted member) (to March 2017)

Prof Nigel Webster

British Journal of Anaesthesia (to March 2017)

Dr Matt Wilson

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National Pain Audit

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Dr Iain McCullagh

CTN Chief Investigator Scheme (from 2018)

Dr Ben Shelley

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Mr David Hepworth

Royal College of Anaesthetists, Lay
Committee Member

Mr John Hitchman

Royal College of Anaesthetists, Lay
Committee Member

Ms Lauren Osborne

Royal College of Anaesthetists, Lay
Committee Member (to 2016)

Ms Sara Payne

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Committee Member (to 2017)

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NELA PROJECT BOARD

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Royal College of Surgeons of England

Dr Gillian Tierney

Association of Surgeons of Great Britain
& Ireland

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NELA QI Lead

Ms Sonia Lockwood

NELA Surgical Lead

Mr Iain Anderson

Surgical Advisor

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NELA Chair/Anaesthetic Advisor & CRG
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Ms Natalie Eugene

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Ms Millenn Chiwewe

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Royal College of Anaesthetists, Research
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UCL Fellow

Ms Hannah Boyd-Carson
NELA Surgical Fellow

Dr LJ Spurling
Research Fellow

Dr Emma Davies
Surgical Research Fellow

Dr Mike Basset
Research Fellow

Dr Peter Martin
Statistician (UCL)

Mr Paul Cripps
Netsolving

Mr Martin Cripps
Netsolving

Dr Sara-Catrin Cook
NELA Research Fellow

Dr Michael Berry
NELA Research Fellow

Mr Trevor Corrithers
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Dr Gary Cook
Quality Observatories

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Dr Irwin Foo
Age Anaesthesia Association (AAA)

Dr Jeremy Langton
Royal College of Anaesthetists

Dr Jugdeep Dhesi
British Geriatric Society (BGS)

Dr Mark Spencer
Commissioning

Dr Matthew Davies
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Britain and Ireland (AAGBI)

Dr Mike Nevin
UK Clinical Directors Network, National
Lead

Dr Richard Griffiths
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Dr William Harrop-Griffiths
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Mr David Cromwell
Royal College of Surgeons – Clinical
Effectiveness Unit (CEU)

Mr Dimitri Papadimitriou
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Mr Iain Anderson
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Mr J P Nolan
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Mr James Goodwin
Royal College of Anaesthetists, Head of
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Mr John Abercrombie
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Mr Jose Lourtie
NELA Project Manager / Royal College
of Anaesthetists Clinical Audit Manager

Mr Nicholas Lees
Royal College of Surgeons (RCS)

Mr Tim Russell
Intensive Care Audit & Research Centre
(ICNARC)

Mr Trevor Corrithers
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Research Administrator (from 2018)

Mrs Joyce Colston
Patient Representative – Elderly

Ms Anna Crossley
Royal College of Nurses (RCN)

Ms Jenny Abraham
Association for Perioperative Practice
(AfPP)

Ms Kerrie Gemmill
Intensive Care Audit & Research Centre
(ICNARC)

Ms Lauren Osborne
Patient Representative – Anaesthesia

Ms Marylynne Smith
Patient Representative - Anaesthesia

Ms Millen Chiwewe
Royal College of Anaesthetists, Audit and
Research Administrator (to 2018)

Ms Ros Moore
Association for Perioperative Practice
(AfPP)

Ms Sharon Drake
Royal College of Anaesthetists, Director
of Clinical Quality and Research

Ms Susan Warren
Royal College of Anaesthetists, Audit and
Research Administrator (to 2018)

Prof David Cromwell
Royal College of Surgeons – Clinical
Effectiveness Unit (CEU)

Prof Mike Grocott
Chair, NELA Project Team

NIAA grant awards

2016 Round 1				
AAGBI/Anaesthesia Research Grant	Dr Niraj Gopinath	Leicester General Hospital	The incidence of chronic headache and low back pain after accidental dural puncture with a Tuohy needle and epidural blood patch in the obstetric population: a prospective 2-group cohort study	£23,535
	Dr Daniel Martin	Royal Free Hospital, London	Intraoperative Hypotension in the Elderly: Observational Study of Intraoperative Hypotension in Elder Patients in UK Hospitals (iHypE)	£9,076
	Dr James Jack	Royal Sussex County Hospital	Pressure Area Distribution On A Variety Of Clinical Surfaces In A Group Of Volunteers	£2,272
	Professor Jonathan Hardman	University of Nottingham	The impact of blood pressure thresholds on perioperative mortality in non-cardiac surgery in a United Kingdom database	£37,218
BJA/RCoA Project Grant	Dr Sarah JL Flatters	King's College, London	Investigation into blood biomarkers for chemotherapy-induced peripheral neuropathy	£69,938
	Dr Simon Finney	St Bartholomew's Hospital, London	The prognostic value of pupillometry in patients with return of spontaneous circulation after out-of-hospital cardiac arrest	£23,350
	Dr Daniel Martin	Royal Free Hospital, London	The relationship between oxidative stress, mitochondrial function and postoperative outcomes in high risk patients undergoing major surgery	£93,878
	Dr Michael Gillies	Royal Infirmary of Edinburgh	The impact of liberal versus restrictive transfusion strategy on cardiac injury in patients undergoing surgery for fractured neck of femur: a feasibility study	£99,774
	Dr Simon Howell	St James's University Hospital, Leeds	Multidisciplinary working across perioperative medicine and primary care: a health informatics feasibility study	£45,480
	Dr Jonathan Bilmen	St James's University Hospital, Leeds	Functional analysis of putative pathogenic genetic variants associated with Malignant Hyperthermia susceptibility	£21,164
	Prof Dave Lambert	Leicester Royal Infirmary	Opioids and Anaesthesia (equipment purchase)	£24,805
	Dr Simon Beggs	UCL Institute of Child Health, London	Impact of surgery and anaesthesia on brain structure and connectivity: age and sex-dependent changes in a rodent model	£98,598
	Prof Helen Galley	University of Aberdeen	Metabolomic analysis after exogenous melatonin administration	£51,237
BSOA Research Project Grant	Dr Narendra Siddaiah	Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham	The clinical effectiveness of combined intravenous and oral tranexamic acid (TXA) in reducing haemoglobin drop after primary hip or knee replacement	£4,994

DAS Small Grants	Dr Chia Kuan Yeow	Royal Surrey County Hospital	Comparison of sagittal versus transverse (G-CUT) ultrasound techniques in identifying the cricothyroid membrane	£909
	Dr Peter Groom	Aintree University Hospitals NHS Foundation Trust, Liverpool	Evaluating anaesthetic trainee's ability and confidence to perform an emergency scalpel cricothyroidotomy after the implementation of a collaborative anaesthetic and surgical training programme	£4,920
RA-UK Project Grant	Dr Loukia Tsaprouni	University of Bedfordshire	Do cyclooxygenase inhibitors decrease human core temperature during exposure to operating room temperatures? Implications for hypothermia and pre-emptive analgesia	£3,780
OAA Large Project Grant	Dr Peter Odor	St George's University Hospital, London	Patient Reported awareness in OBstErics (PROBE): prospective evaluation of accidental awareness under general anaesthesia in obstetrics patients	£29,757
2016 Round 2				
AAGBI/Anaesthesia Research Grant	Dr Surrah Leifer	AAGBI, London (national study)	Upper limb disorders in anaesthetists	£4,920
	Dr David Saunders	Newcastle upon Tyne Hospitals NHS Foundation Trust	Emergency Laparotomy Follow-up Study: A pilot, single-centre, observational study into the medical, functional and social impact of emergency abdominal surgery during the first year of recovery. (ELFUS1)	£9,913
	Dr Simon Howell	Leeds Institute of Biomedical & Clinical Sciences, School of Medicine, University of Leeds	MET-REPAIR-FRAILITY: REevaluation for Perioperative cArdiac Risk and FRAILITY	£21,759
	Dr Oliver Boney	University College Hospital, London	Patient-Centred Outcome Measures for Major Surgery (P-COMMaS)	£5,179
	Prof Gary Mills	Sheffield Teaching Hospitals NHS Foundation Trust	PROtective ventilation with high versus low PEEP during one-lung ventilation for THORacic surgery – PROTHOR: A randomized controlled trial	£11,725
BJA/RCoA non-clinical PhD Studentship	Prof Helen Galley & Prof Nigel Webster	University of Aberdeen	Effect of melatonin and its metabolites on key molecular pathways in sepsis	£85,751
	Dr Kieran P O'Dea	Imperial College London	Cellular interactions and functions of microvesicles in the systemic inflammatory response syndrome	£90,488
ACTACC Project Grant	Dr Alastair Proudfoot	St Bartholemew's Hospital, London	A quantitative and qualitative analysis of the impact of a SHOCK team and structured SHOCK call system in the management of acute severe cardiogenic shock	£7,300
	Dr Ben Shelley	Golden Jubilee National Hospital, Scotland	Right ventricular inflammation after lung resection	£12,358

2017 Round 1				
AAGBI/ <i>Anaesthesia</i> Research Grant	Dr Thomas Craig	Portsmouth Hospitals NHS trust	CANDLE – Critical Appraisal of the Nocturnal Distribution of Light Exposure	£4,995
	Dr Clare Melikian	Royal Free Hospital, London	Alterations in coagulation profile following orthotopic liver transplantation	£32,423
	Prof Gary Mills	Royal Hallamshire Hospital, Sheffield	Assessment of ventilatory management during general anaesthesia for robotic surgery and its effects on postoperative pulmonary complications (avatar): A prospective observational multicenter study	£14,589
	Dr Richard Armstrong	University College London	Feasibility and safety of delivering a ketone drink to comatose survivors of out-of-hospital cardiac arrest	£32,643
<i>Anaesthesia</i> /Wiley Research Grant	Dr Michael Lee	University of Cambridge	Capturing the temporal course of reported pain and its relief from diagnostic facet joint blocks to inform the prediction of successful facet-joint denervation (FAST-facet study)	£48,364
APAGBI Small Research Grant	Prof Ramani Moonesinghe	University College Hospital, London	Children's Acute Surgical Abdomen Programme Pilot: CASAPP	£40,000
BJA/RCoA Project Grant	Prof Helen Galley	University of Aberdeen	Investigation of the potential of negative regulation of nuclear factor kappa B using a novel antibody under conditions of sepsis	£30,179
	Dr Istvan Nagy	Imperial College, London	Mapping inflammation-induced mitogen- and stress-activated protein kinase 1/2-dependent molecular changes in primary sensory neurons	£90,123
	Dr Michael Wilson	Imperial College London	"Investigation of the cyclophilin A:CD147 axis as a novel mediator of ventilator-induced lung injury	£69,847
	Dr Jon Silversides	Craigavon Area Hospital, Belfast	Determining the mechanisms by which active deresuscitation in stable critically ill patients may modulate clinical outcomes	£49,731
	Dr Shaman Jhanji	Royal Marsden NHS Foundation Trust, London	"Tracking the molecular and metabolic fingerprints of inhalational versus intravenous anaesthesia in breast cancer	£69,787
BJA/RCoA International Collaborative Grant	Prof Donal Buggy	Mater University Hospital, University College Dublin, Ireland	Can perioperative anaesthetic-analgesic techniques during cancer surgery influence cancer outcome? Next steps in further defining its biological plausibility of this hypothesis in vitro and vivo	£99,992
	Dr Karl Herold	Weill Cornell Medicine, USA	General anaesthetic interactions with full-length voltage-gated sodium channel NavMs	£99,848

DAS Small Grant	Dr Maria Cheresheva	Guys and St Thomas' NHS Foundation Trust, London	New videolaryngoscopy scoring system development	£1,804
	Dr Mark Raper	Princess of Wales Hospital, Cardiff	Developing a framework for the assessment of Single Use Video Laryngoscopes	£2,000
	Dr Tauqeer Husain	University College Hospitals of London	Clinical Trial of Transnasal Humidified Rapid-Insufflation Ventilatory Exchange (THRIVE) Oxygen in Women having Planned Caesarean Delivery	£2,035
	Dr Claire Gillan	St John's Hospital, Scotland	The use of a second generation LMA as a rescue device in patients with previous head and neck radiotherapy	£2,000
OAA Large Project Grant	Dr David Thomas Monks	St Thomas Hospital, London	A comparison of intrathecal hyperbaric prilocaine vs bupivacaine for regional anaesthesia indicated for cervical cerclage in pregnancy. A randomized, controlled, trial. (PRIOCC Trial)	£53,383
VASGBI Project Grant	Dr Simon Howell	University of Leeds	The Role of Preoperative Assessment in Effective Vascular Multidisciplinary Team Decision Making	£35,592
2017 Round 2				
AAGBI/Anaesthesia Research Grant	Dr Andrew Klein	Papworth Hospital, Cambridge	A pilot study to examine the effect of intravenous iron in women with borderline anaemia undergoing cardiac surgery (the Response to Iron Treatment in Anaemia study, RITA)	£15,750
	Dr Fahd Aamir	Cork University Hospital, RoI	Performance and Error Metrics for Ultrasound Guided Popliteal Nerve Blocks (USpNB)	£4,724
	Dr Louise Savic	Leeds Teaching Hospitals NHS Trust	Drug Allergy Labels in the Elective Surgical population (DALES) A RAFT Project	£11,808
	Dr Harriet Kemp Dr Helen Laycock	Imperial College London	Pain Assessment in Intensive Care: a qualitative investigation of health care professionals perceptions, values and attitudes towards pain assessment and management in the intensive care unit (The PAINT-2 Study)	£4,090
	Dr Johannes Retief	Derriford Hospital Plymouth	Cognitive Monitoring in Planned Arthroplasty Surgery Study (COMPASS)	£9,900
BJA/RCoA Project Grant	Prof Helen Galley/ Saravanakumar Kanakarajan	University of Aberdeen	Double-blind randomised controlled trial of exogenous administration of melatonin in chronic pain (DREAM – CP)	£96,010
	Professor Graeme McLeod	Ninewells Hospital & Medical School, Dundee	Does cadaver simulation training offer best clinical performance behaviour during ultrasound guided regional anaesthesia?	£69,970

APPENDIX B

2017 Round 2 (cont)				
BJA/RCoA non-clinical PhD Studentships	Prof Tim Hales	University of Dundee	Using c-Src inhibitors to improve opioid analgesia	£87,048
	Professor Daqing Ma	Imperial College London	Necroptosis and sterile inflammation are involved in remote organ injury after kidney engraftment: Implication for consequences following traumatic surgery	£89,987
	Professor Keith J Buckler	University of Oxford	Exploring novel sub-additive (antagonistic) interactions between anaesthetic agents	£97,284
DAS Project Grant	Dr Paul Fennessy	Our Lady's Children's Hospital, Crumlin, Dublin	Creation and validation of anatomically correct cricothyroidotomy models for training by 3-D printing	£6,525
DAS Small Grant	Dr Christopher Gough	Royal United Hospital Combe Park, Bath	'Obese neck' training manikin project	£4,632
	Dr Kim Caulfield	Mater Misericordiae University Hospital, Dublin	To determine the optimal endotracheal tube diameter for cricothyroidotomy and to assess the effect of the tracheal hook on cricothyroid membrane height	£2,947
	Dr Toby Winterbottom	Royal Surrey County Hospital	Comparative study evaluating cricothyroidotomy part-task simulation trainers	£4,328
2018 Round 1				
AAGBI/Anaesthesia Research Grant	Dr Pawandeep Sarai	Imperial College London	Novel Monitoring Tools in Vascular Surgery: Can transcranial magnetic stimulation be used to monitor spinal cord function during open and endovascular repair of thoraco-abdominal aortic aneurysms?	£22,236
	Dr Ronelle Mouton	Southmead Hospital, North Bristol NHS Trust	General, Local, and Regional Anaesthesia in Emergency Surgery (GALORE) A project to develop mode of anaesthesia as an intervention in emergency surgery and inform future trials"	£28,092
	Dr Ben Shelley	University of Glasgow	PROFILES : bnP for pRediction of Outcome FollowIng Lung rEsection Surgery	£25,239
	Dr Anna Ratcliffe	University Hospitals Plymouth NHS Trust	AFAR – Accelerometers for Assessing Recovery. Can an accelerometer be used as an objective patientcentred endpoint tool for measuring recovery from anaesthesia in the natural environment ? A pilot study for SWARM (South West Anaesthesia Research Matrix)	£5,142
Joint AAGBI/ACTACC Research Grant	Dr Gudrun Kunst	King's College Hospital NHS Foundation Trust, London	Comparison between Propofol and Isoflurane Anaesthesia (COPIA) on Cardiovascular Outcomes following Cardiac Surgery - a Randomised Controlled Feasibility Trial	£43,758

BJA/RCoA Project Grant	Dr Hailin Zhao	Imperial College London	Novel preservative strategy in protecting lung graft	£69,173
	Dr Jonathan Rhodes	The University of Edinburgh	Traumatic Brain Injury Associated Radiological Deep Venous Thrombosis Incidence and Significance (TARDIS)	£69,454
	Dr Joseph E. Alderman	University of Birmingham	Could characterising different phenomes associated with hyperlactaemia allow better targeted therapy for patients in shocked states?	£14,938
	Professor Iain Moppett	University of Nottingham	Cerebrovascular accident and Acute coronary syndrome and Peri-operative Outcomes study (CAPO)	£69,999
BSOA Project Grant	Dr Rachel Baumber	Royal National Orthopaedic Hospital NHS Trust, London	Understanding which perioperative factors increase complexity and influence quality of life outcomes in revision lower limb arthroplasty	£10,000
OAA Large Project Grant	Dr Nazir Lone	University of Edinburgh	Maternal critical care: identifying at-risk women and understanding the short and long term consequences of critical illness in pregnant or recently pregnant women	£48,262
	Dr Rachel Kearns	University of Glasgow	Effect of maternal anaesthesia on short and long-term offspring outcomes: A population-based study	£59,942
OAA Medium Project Grant	Dr Rachel Collis	University Hospital of Wales	Characterising the coagulopathy of postpartum haemorrhage (PPH)	£15,000
RA-UK Project Grant	Professor Graeme McLeod	Ninewells Hospital, Dundee	Objective measurement of regional block performance using new eye tracking technology	£5,000
2018 Round 2				
AAGBI/Anaesthesia Research Grant	Dr Sara-Catrin Cook	Royal United Hospitals Bath NHS Foundation Trust	Improving outcomes for frail patients undergoing elective colorectal cancer surgery	£17,479
	Dr Sara-Catrin Cook	Royal United Hospitals Bath NHS Foundation Trust	The Videolaryngoscope Airway Database App Project	£4,882
	Dr Reema Ayyash	The James Cook University Hospital, Middlesbrough	Investigating the associations between patient reported outcomes and preoperative frailty in patients with operable, potentially curative, colorectal cancer: an observational study	£40,000
	Dr Louise Savic	Leeds Teaching Hospitals NHS Trust	Teicoplanin Anaphylaxis: Development of a diagnostic pathway, and elucidation of the underlying allergic mechanism	£20,000
BJA/RCoA Project Grant	Dr Tristan Bekinschtein	University of Cambridge	How are neural mechanisms underpinning touch-evoked pain modulated by sensory expectation and cognition in individuals with Complex Regional Pain Syndrome	£54,272
	Prof David Lambert	University of Leicester	Use of novel fluorescent probes to examine MOP/NOP interaction: studies with Cebranopadol and AT-121 as mixed agonists	£59,829
	Prof Philip Hopkins	University of Leeds	Transcriptional and functional changes underpinning acute and chronic mitochondrial dysfunction in human and murine malignant hyperthermia	£25,663

APPENDIX B

2018 Round 2 (cont)				
BJA/RCoA Non-clinical PhD Studentship (Scientific)	Dr Sian Henson	Queen Mary University of London	Characterisation of metabolic dysfunction and altered T cell migration in lymphopaenic perioperative individuals	£93,111
	Dr Andrew Conway Morris	University of Edinburgh	Mapping and manipulating the human neutrophil response to staphylococcus aureus	£99,342
	Dr Manu Shankar-Hari	St Thomas' Hospital, London	Studying immune trajectory to determine optimal timing for immunomodulation in sepsis patients: Scientific cohort study	£89,331
	Prof Helen Galley Dr Heather Wilson	University of Aberdeen	Interactions between melatonin and endogenous opioid peptide release	£89,426
BJA/RCoA Non-clinical PhD Studentship (History)	Dr Stephanie Snow	University of Manchester	The History of the first 100 years of the BJA	£72,368

NIAA research grant figures

NIAA Grant Funding Awarded 2008–2018

Year	Number applications received	Amount requested	Number of awards	Amount funded
2008 R1	37	£1,232,748.00	10	£437,982
2008 R2	20	£423,659.00	4	£115,047
2009 R1	18	£315,525.00	5	£56,295
2009 R2	25	£1,096,642.00	9	£284,669
2010 R1	31	£922,931.00	10	£290,063
2010 R2	40	£1,472,347.00	12	£382,778
2011 R1	40	£775,158.00	14	£179,067
2011 R2	24	£720,627.00	8	£288,855
2012 R1	36	£956,380	11	£296,875
2012 R2	26	£432,738	8	£114,167
2013 R1	39	£966,397	13	£287,161
2013 R2	21	£482,945	8	£83,690
2014 R1	36	£1,341,210.48	7	£206,143.00
2014 R2	32	£1,305,588	11	£486,339.00
2015 R1	43	£1,440,121	10	£334,726.00
2015 R2	25	£706,664	10	£358,826.00
2016 R1	42	1,650,917	17	£639,690.00
2016 R2	18	488,328	9	£249,393.00
2017 R1	37	1,583,011	19	£779,334.00
2017 R2	30	1,029,689	14	£505,003.00
2018 R1	38	1,123,182	14	£486,235.00
2018 R2	32	1,600,260	12	£665,073.00
	690	£22,067,068	235	£7,527,412

Geographic Distribution of NIAA Grants 2008–15

Year	England – London	England – Outside London	Scotland	Wales	Ireland	Rest of world
2008	5	6	2	1	0	0
2009	7	4	2	0	1 (RoI)	0
2010	6	13	2	0	0	1
2011	7	10	3	1	1 (RoI)	0
2012	5	10	3	1	0	0
2013	6	12	3	0	0	0
2014	6	8	4	0	0	0
2015	7	12	1	0	0	0
2016	9	14	4	0	0	0
2017	11	10	5	1	5 (RoI: 4, NI: 1)	1
2018	6	12	7	1	0	0

John Snow Anaesthesia Intercalated Award

AAGBI/Anaesthesia funded John Snow Anaesthesia Intercalated Award		
2016		
Miss Sarah K Taylor	Hull-York Medical School	To demonstrate the impact of a new pre-operative care pathway on patient experience and expenditure, as well as evaluating the provision of pre-operative assessment services and demands
Mr Joshua Lucas de Carvalho	King's College, London	To examine pre-operative frailty scores as markers for assessing healthy survival after major cardiac surgery in patients
Mr Michael Blayney	University of Edinburgh	To demonstrate whether ICU capacity strain affects patient outcomes in ICUs in a UK setting
BJA/RCoA Funded John Snow Anaesthesia Intercalated Award		
Hannan Chaudery	Barts and the London School of Medicine and Dentistry	Global incidence and associations of Acute Kidney Injury after elective surgery in the International Surgical Outcomes Study (ISOS)
Ms Sarah Train	University of Edinburgh	An exploration of the relationship between patterns of sedation during intensive care (ICU), early patient recollection of the ICU experience, and early trauma symptomatology among survivors of critical illness
Mr Weihong Du	Imperial College London	To further investigate the mechanisms of leukocytes activation during VILI and how this activation leads to systemic inflammation
Ms Rachel Vaughan	University of Aberdeen	Chronic Pain and Sleep: exploring the association and validity of a commonly used pain questionnaire
Mr Ruairaidh Angus Sutherland Campbell	University of Edinburgh	Rotational Thromboelastometry profiles in patients undergoing Liver Transplantation
AAGBI/Anaesthesia funded John Snow Anaesthesia Intercalated Award		
2017		
Mr Cameron Keogh	University of Edinburgh	Venous effects on the pulsatile signal displayed by a broadband photoplethysmograph
Ms Sinead Mackay	University of Edinburgh	Incidence and Characteristics of Chronic Pain following Caesarean Section in a Scottish Tertiary Referral Centre
Mr Richard Melia	University of Leeds	Estimating Functional Capacity in High Risk Surgical Patients: A Comparison of Exercise Testing and Self-Reporting using a Structured Questionnaire
BJA/RCoA Funded John Snow Anaesthesia Intercalated Award		
Mr Kasun Fernando	University of Aberdeen	A pilot study of sensory mapping of lumbar facet joint pain
Mr Jonathan Halcrow	Newcastle University Medical School	A feasibility study to reduce selection bias and improve efficiency in observational studies in critical care: subphenotypes of the acute respiratory distress syndrome
Mr Christopher Morton	University of Glasgow	Assessment of cardiac function on exercise following lung resection

AAGBI/Anaesthesia Funded John Snow Anaesthesia Intercalated Awards		
2018		
Miss Alice Duffy	University of Sheffield	Patient perception of perioperative risk using verbal probability expressions
Miss Rebekah Lawrence	King's College London	Physical effects and emotional experiences of intraoperative neuro-monitoring
Ms Helena Martin	University of Edinburgh	Intra-epidermal nerve fibre density (IENFD) and its relationship to acute pain and chronic pain after caesarean section
BJA/RCoA Funded John Snow Anaesthesia Intercalated Awards		
Mr Maclyn Abraham Augustine	University of Southampton	The Distribution of Highly Sensitive Troponin in the Critically Unwell and Associated Mortality
Miss Lucia Di Mascio	University of Aberdeen	The effects of melatonin on the secretion of endogenous opioids (β endorphin) by different cell types in vitro
Mr Max Fourman	University of Edinburgh	Genetic clues to sepsis pathogenesis
Mr Frederick McGee	University of Sheffield	Do Noise Cancelling Headphones Reduce Sedation Requirements in Primary Arthroplasty Patients?
Miss Fiina Narhi	University of Edinburgh	Effect of local anaesthetics (lidocaine) on neutrophil activity in sepsis
Mr David Ou	Newcastle University	The impact of anaesthesia, anaesthetic techniques, and perioperative pain management for cancer surgery on immune function and tumour load
Miss Lucy Stewart	University of Edinburgh	Development of a norepinephrine challenge protocol with which to compare cardiovascular stability in a randomised trial comparing alpha2-agonists with propofol for sedation of mechanically ventilated critically ill patients
Neuroanesthesia & Critical Care Society of Great Britain & Ireland Intercalated Awards		
Miss Jennifer Young	University of Glasgow	Influence of patient demographics on optimum cerebral perfusion pressure following severe traumatic brain injury

RCoA small research, education and travel grants

2016			
The Belfast Fund	Dr Iain Carroll	Delivery of a Developing Healthcare Systems Intensive Care Course in Gondar, Ethiopia (BASICS DHS)	£600.00
	Dr Adam Hewitt Smith (also part-funded through The Sargent Fund)	A pilot project to assess the impact of in-service simulation training on the ability of non-physician anaesthetists to safely deal with critical incidents in anaesthesia	£1,500.00
	Dr Helen Howes	BASICs course, Gondar University Hospital, Ethiopia	£600.00
	Dr Helen McKenna	Presentation of original work (relationship between mitochondrial dysfunction and mortality in critically ill patients) at an international workshop on high-resolution respirometry, in Austria	£500.00
	Dr William James Packer (also part-funded through The Sargent Fund)	Zambia Anaesthesia Development Project: Visiting Lecturer in Anaesthesia	£3,000.00
	The Ernest Leach Fund	Dr Matthew Charlton	Establishing normal ranges of microcirculatory function as determined by CytoCam-IDF imaging
Dr Adam Glass		Assessment of RV contractile reserve on exercise following lung resection - a pilot study	£1,970.00
Dr Nicola Jones		Focused Ultrasound: Barriers and Enabling Factors to Successful Completion of Training and Meaningful Changes in Practice	£1,500.00
Dr Jon Silversides		Role of Active Deresuscitation After Resuscitation-2	£1,000.00
The Sargent Fund	Dr Fozia Hayat	The Zambian Anaesthetic Development Project (ZADP)	£2,000.00
	Dr Jolene Moore	Obstetric anaesthesia & MOEWS in The Gambia	£1,000.00
2017			
The Belfast Fund	Dr Harriette Beard	Emergency Anatomy for Medical Students	£250.00
	Dr James Bowness	Anatomy for the FRCA Course	£250.00
	Dr Zoe Burton	Drug errors in paediatric anaesthesia: a cultural blind spot? A survey of UK paediatric anaesthetists	£300.00
	Dr Stephanie Connelly (also part-funded through The Sargent Fund)	Anaesthesia in the Amazon - Improving Difficult Airway Management in the Low Resource Environment	£500.00

The Belfast Fund (cont)	Dr Seung Cheol (Paul) Kim	Airway Management for Neck Breathers	£3,100.00
	Dr Andrew Nath	Observership of lung transplant anaesthesia in Canadian National cardiothoracic unit	£250.00
	Dr Catrin Williams (also part-funded through The Sargent Fund)	The perioperative surgical journey: Improving the primary-secondary care interface in Wales	£600.00
The Ernest Leach Fund	Dr Danielle Franklin	Designing improvements in the perioperative care of children using FRAM analysis	£1,125.00
	Professor Graeme McLeod	Is intraneural injection associated with nerve ischaemia? A quantitative analysis of nerve blood flow and oxygenation using micro-ultrasound and photo-acoustics in an anaesthetised pig model	£2,180.00
The Sargent Fund	Dr Boyne Bellew	Serratus Anterior Block and catheter use in Rib fractures in the Emergency department	£852.00
	Dr Elizabeth Hood	Reducing post-op pulmonary complications following major surgery	£1,248.00
2018			
The Belfast Fund	Dr Manish Verma	Undergraduate Handbook for Anaesthesia and ITU	£250.00
	Dr Mariapaz Sebastian	Teaching course in Regional Anaesthesia	£500.00
	Dr Yohinee Karuna Rajendran	Setting up an Obstructive Sleep Apnoea Database; the first of its kind in the UK	£600.00
The Ernest Leach Fund	Dr Nicola Schunke	Mercy Ships Mission, Africa Mercy, Conakry Port, Guinea, West Africa	£1,000.00
	Dr Thomas H Craven	In vitro effects of Lidocaine on neutrophils from patients with sepsis	£2,225.00
	Dr Andrew Georgiou	The impact of frailty on the outcome of critical care admission	£1,250.00
	Dr Jia Stevens	Investigating variations in platelet mitochondrial function in healthy subjects	£1,500.00
The Sargent Fund	Dr Sarah Helen El-Sheikha	Zambia Anaesthesia Development Project (ZADP): Senior Fellowship	£1,250.00
	Dr Edward Costar	Purchase of an ORSIM fiberoptic intubation simulator	£500.00

RCoA awards

British Oxygen Company Professorship		
2015-2019	Dr Gareth Ackland	Angiotensin mediated cellular dysfunction and perioperative morbidity
	Dr Daqing Ma	Effects of anaesthesia on cancer: Clinical and laboratory evidence
Macintosh Professorship		
2016	Dr Matthew Wilson	Trials of Labour: national multicentre randomised studies in obstetric anaesthesia
2017	Dr Ramani Moonesinghe	Citizen science: a unique opportunity for anaesthetists to lead research innovation
2018	Dr Andrew Klein	Peri-operative anaemia: a challenge and an opportunity
	Dr Robert D Sanders	Anaesthesia, Perioperative Care & Cognition
Maurice P Hudson Prize		
2016	Dr Annemarie Docherty	The impact of restrictive versus liberal transfusion strategies on patient outcomes in patients with cardiovascular disease excluding those undergoing cardiac surgery: A Systematic Review and Meta-analysis (<i>BMJ</i> 2016;352:i1351)
2017	Dr Mike Charlesworth	An observational study of critical care physicians' assessment and decision-making practices in response to patient referrals (<i>Anaesthesia</i> 2017; 72: 80–92)
2018	Dr Vasileios Zochios	The effect of high-flow nasal oxygen on hospital length of stay in cardiac surgical patients at high-risk for respiratory complications: a randomised controlled trial <i>Anaesthesia</i> 2018, doi:10.1111/anae.14345"
Payne Stafford Tan Award		
2016		No award in 2016
2017	Dr Vasileios Zochios	Attendance at Annual Society of Cardiovascular Anesthesiologists Echo Week, Atlanta
2018	Dr Yohinee Karuna Rajendran	Attendance at Society of Anaesthesia and Sleep Medicine conference, San Francisco

Acronyms

AAGBI	Association of Anaesthetists of Great Britain and Ireland
ACTA	Association of Cardiothoracic Anaesthetists
APAGBI	Association of Paediatric Anaesthetists of Great Britain and Ireland
ARS	Anaesthetic Research Society
BJA	<i>British Journal of Anaesthesia</i>
BOC	British Oxygen Company
BSOA	British Society of Orthopaedic Anaesthetists
CCRN	Comprehensive Clinical Research Networks
CLRN	Comprehensive Local Research Networks
CRN	Clinical Research Network
CTN	Clinical Trials Network
DAS	Difficult Airway Society
DMA&CC	Department of Military Anaesthesia and Critical Care
EPICOT	Evidence, Population, Intervention, Comparison, Outcome, Time stamp
HSRC	Health Services Research Centre
JLA	James Lind Alliance

NACCSGBI	Neuro Anaesthesia & Critical Care Society of Great Britain and Ireland
NELA	National Emergency Laparotomy Audit
NETSCC	NIHR Evaluation, Trials and Studies Coordinating Centre
NIHR	National Institute for Health Research
OAA	Obstetric Anaesthetists' Association
PCPIE	Patient, Carer and Public Involvement Programme
PQIP	Perioperative Quality Improvement Programme
PSP	Priority Setting Partnership
QuARCs	Quality Audit & Research Coordinators
RA UK	Regional Anaesthesia UK
RAFT	Research Anaesthesia Federation for Trainees
RCoA	Royal College of Anaesthetists
SDO	Service Delivery and Organisation
SEA UK	Society for Education in Anaesthesia, UK
SNAP	Sprint National Anaesthesia Projects
VASGBI	Vascular Anaesthesia Society of Great Britain & Ireland





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