



THE NEWSLETTER
OF THE
ASSOCIATION
OF ANAESTHETISTS
OF GREAT BRITAIN
AND IRELAND

ANAESTHESIA NEWS

ISSN 0959-2962

No. 358

MAY 2017

INNOVATION ISSUE:

**The needle-free
non-injectable
arterial connector**

***RELAX* Anaesthetics
– an update**

**OBSCymru – a
national quality
improvement
collaboration
for Wales**

**Surrey Crisis
Resource
Management
Programme**

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Editorial



Once again May's issue of *Anaesthesia News* is highlighting innovation in anaesthesia. After a fascinating session at the AAGBI WSM London in January, we asked the winner of the 2017 AAGBI Award for Innovation in Anaesthesia, Critical Care and Pain, Diamedica, to write about their project, what inspired them, and their wider contribution to safe global anaesthesia. The oxygen reservoir was first described in *Anaesthesia News* in May 2015, where the technical challenges in its development were discussed. The presentation in January allowed Diamedica to show the impact of their invention and how it is beginning to contribute towards solving the problem of enough inexpensive oxygen to deliver continuous flow anaesthesia in resource poor settings. Although draw-over anaesthesia has long been the mainstay of developing world anaesthesia, times are changing and a more modern approach to anaesthetic techniques, even in the most remote settings, has set the Diamedica team and their collaborators on finding innovative solutions. There is no doubt their experience and fascinating knowledge of the challenges in delivering anaesthesia in such settings continues to enhance safety.

Innovation in anaesthesia is not only about developing and inventing new equipment. We have previously highlighted innovation in teaching and in this issue we have two articles about developing safer processes during emergencies. Anaesthetists have long had a well-deserved reputation of designing systems specifically related to anaesthesia to improve patient safety, and are now at the forefront of working with multidisciplinary teams to develop innovative solutions to improve safety. The Surrey Crisis Resource Management (SCReaM) programme has developed cards that are read out by a pre-specified person in the theatre team during an emergency. They have used lessons learned from the aviation industry including incorporating a multidisciplinary human factors training programme when dealing with a crisis in theatre. The OBSCymru project is closer to home for me. Management of post-partum haemorrhage continues to be a problem in the UK and this project aims to reduce the incidence by getting the right personnel to the mother's bedside at the right time and dealing with the problem using a step-wise approach. Such an approach has been agreed by all the delivery units in Wales. Measuring blood loss after all deliveries and a standardised approach to post-partum haemorrhage using a call-out protocol is being integrated with point-of-care coagulation, haemoglobin and lactate measurement to improve resuscitation. The

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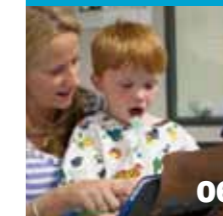
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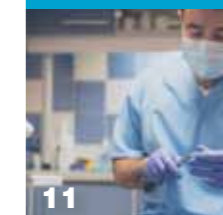
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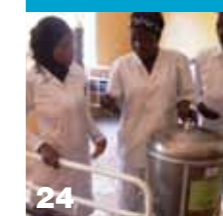
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Printing: Portland Print

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other innovation in this project has been the three anaesthetic trainees who are currently on an out-of-programme Welsh Deanery management and leadership fellowship. Trainees from any speciality can apply for these posts and I'm pleased to say anaesthesia has embraced this opportunity and trainees are now working on this and other projects so they are equipped to lead innovation and change in the future. The OBSCymru project is in its early days but hopefully will lead to improved outcomes for mothers and babies.

This issue gives us an opportunity to catch up with previous winners of the AAGBI Award for Innovation in Anaesthesia, Critical Care and Pain. In 2015, Maryanne Mariyaselvam won the award for a one-way injector port to prevent medications being injected through arterial lines. She now tells the story of how this innovation has been taken into production. The 2016 winner, Peter Brooks, updates us on 'Relax Anaesthetics' – a distraction tool for use in paediatric anaesthesia. If you are a secret inventor or innovator then let us know. Even if it's at an early stage, Gerry Keenan, our Innovations Lead, may be able to point you in the direction of some help and the innovations competition at the WSM London each year may be a platform for its future development.

Rachel Collis
AAGBI Vice President



AAGBI
and **AAGBI Foundation**
Long-Term Strategy
www.aagbi.org/LTS

Undergraduate elective funding 2017

Up to £750

Applications are invited from medical students studying in Great Britain and Ireland (subject to confirmation of eligibility) to apply to the AAGBI Foundation for funding towards a medical student elective period taking place between October 2017 and March 2018. A further round of funding will be advertised in the autumn for electives taking place from April 2018 onwards. Overseas students should ensure that they are permitted to apply for charitable funding.

Preference will be given to those applicants who can show the relevance of their intended elective to anaesthesia, intensive care or pain relief. Applicants may wish to note that a key focus of the AAGBI is support for projects in the developing world.

For further information and to apply visit: www.aagbi.org/undergraduate-awards, email secretariat@aagbi.org or telephone 020 7631 1650 (option 3)

Closing date: 14 July 2017
for consideration at the
September 2017 Research
& Grants Committee meeting



The needle-free non-injectable arterial connector



The non-injectable arterial connector (NIC) won the AAGBI Innovation Award in 2015 and now meets the criteria for NHS England's Innovation and Technology Tariff. From 1 April 2017, all innovations on the Tariff will be centrally funded by NHS England, meaning that every Trust in England can use this innovation for free [1].

Background to innovation

Medication must never be given into the arterial line but case reports and incidents of inadvertent injection into the arterial line have been published since the 1940s [2]. In 2008, the National Patient Safety Agency (NPSA) published an Alert [3] highlighting this error and recommended that manufacturers should colour code arterial lines red and develop engineered solutions to prevent this mistake [3]. However, despite colour coding and the Alert, there have been more than 150 incidents reported to NHS England since 2008, which is the equivalent of around two incidents per month [4] and we know that these errors are under-reported [5].

Why is it not enough to colour code arterial lines and teach people not to make the mistake? The literature states that inadvertent injection into the arterial is as common as 1:3,440 procedures [2], making this a 'rare' error. When these types of error occur, institutionally there is a common response: make sure that all staff are aware of the error, re-educate and re-train the individual, write a policy, create a checklist or make sure that two people check the procedure. These measures can be effective, but only in the short term. What we often see is a decline in the efficacy of these interventions over time and this is because 're-education and re-training is only as good as the length of time that clinicians remember to do it' [6] before there is a shift back to previous practice. We also have the problem of frequent staff changes, requiring each clinician to be educated on new equipment or systems every time

they move to a new hospital. Therefore, re-education, introducing a checklist and remembering to follow or fill it out to prevent rare events requires ongoing and repeated educational interventions. This is not only time consuming, but very costly for an error that occurs in 1:3,440 procedures.

For rare errors the best solutions are engineered into the system to make the error impossible. This not only protects the patient from the error, but also protects the clinician. It is impossible for us to remember every error possibility, in every procedure and in every situation and mitigate for this, all while appropriately looking after the patient. This has been recognised in the NPSA arterial line alert calling for manufacturers to develop engineered solutions to prevent these errors [3] and by the WHO guidance which states that injection ports on arterial lines are to be avoided [7].

The NIC is an engineered safety solution to prevent the error of accidental injection into the arterial line. It is a standard arterial connector, with a stop-valve and a unidirectional valve in the inner chamber. This ensures the clinician can always aspirate to take the blood sample, but they can never inject into the arterial line. The physical barrier also prevents bacterial ingress into the arterial line hub and reduces accidental blood spillage during sampling. The NIC has safety features that protect both patients and staff. Clinically it is easy to use and is the same as standard arterial connectors, therefore there is minimal training required. The NIC is attached to the sampling port of the arterial line with a standard Luer connection, making it compatible with any arterial line equipment.

Innovation and Technology Tariff

Winning the AAGBI Award for Innovation in Anaesthesia, Critical Care and Pain 2015, the NIC got the seal of approval from peers. It then won the National Patient Safety Award and was selected for the NHS Innovation Accelerator Programme as a best practice safety innovation that should be implemented nationally. As the uptake of new innovations in the NHS is slow, due to complex and inconsistent local procurement decision-making processes, NHS England has launched the Innovation and Technology Tariff.

This seeks to centrally fund innovations that meet the criteria, so that every patient in NHS England has access to these safety innovations quickly and easily.

AAGBI Innovation Award

As an innovator and clinician, winning the AAGBI Innovation Award has been fantastic for my career. It has propelled my work onto a national platform, has allowed me to apply and be accepted for the NHS Clinical Entrepreneur Programme and the NHS Innovation Accelerator Programme. The prize has led to further research on the use of engineered solutions to prevent rare errors, such as a solution to prevent arterial glucose error and the WireSafe™, a device which prevents the never event of retained guidewires.

Maryanne Mariyaselvam

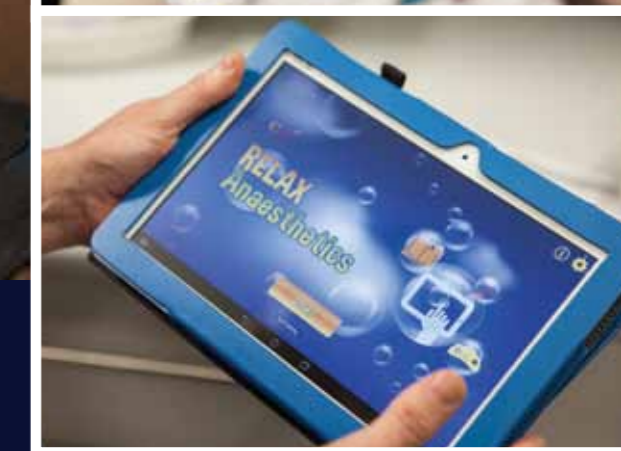
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Declaration of interest

This innovation is owned by The Queen Elizabeth Hospital King's Lynn NHS Trust

References

1. Mariyaselvam M, Fawzy E, Young P. Innovation in the NHS. *Anaesthesia News* 2015; **334**: 22–4.
2. Sen S, Chini EN, Brown M. Complications after unintentional intra-arterial injection of drugs: risks, outcomes and management strategies. *Mayo Clinic Proceedings* 2005; **80**: 783–95.
3. Infusions and sampling from arterial lines. Rapid Response Report. *National Patient Safety Agency*. July 2008. NPSA/2008/RRR006.
4. <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59891> (accessed 07/03/2017).
5. Personal communication of adverse events data from NHS England
6. Mariyaselvam M, Hutton A, Young P. Accidental intra-arterial injection: an under-reported preventable never event. *Critical Care* 2015; **19(Suppl)**: P166.
7. Green J, Butterworth J. 'Never' Events: anaesthesiology's dirty little secret. *Anesthesia & Analgesia* 2013; **117**: 1–2.
8. WHO. Avoiding catheter and tubing mis-connections. www.who.int/patientsafety/solutions/patientsafety/PS-Solution7.pdf (accessed 07/03/2017).



RELAX Anaesthetics – an update

Tablet-based interactive distraction is an effective technique for alleviating the anxiety and distress that up to 50% of children experience in the peri-operative period. Significant peri-operative anxiety negatively influences children's anaesthetic and surgical experience, and increases the risk of postoperative emergence delirium and behavioural changes in paediatric patients. Handheld electronic games, smartphones and tablets have become part of children's and adolescents' culture. These devices have proved very useful as non-pharmacological interventions for reducing distress during induction of anaesthesia [1] and have been shown to be more effective than midazolam [2], parental presence [3] and traditional forms of distraction, such as toys and books [4].

Together with software developers Imagineear and with funding from our hospital's arts, research and innovation charity, CW+, we developed the tablet-based app, *RELAX Anaesthetics* to facilitate efficient access to a range of child-friendly content, leading to engagement and distraction, and ultimately a smooth induction

of anaesthesia. The tablet includes more than 40 games, books and short video clips that provide visual, auditory and interactive engagement for children. The application is easy to use. By entering four ticks on the first screen it matches developmental considerations with the planned induction technique and favoured type of distraction for the child. As *RELAX Anaesthetics* is simple to navigate, the tablet can be used by anyone in the anaesthetic room and can also empower the parents to help their child during a stressful time. This should allow the anaesthetist to focus on other aspects of the induction process such as cannulation.

Having the *RELAX Anaesthetics* tablets available in each of our paediatric anaesthetic rooms provides the most efficient access to the technique. Using a bespoke device that only has relevant apps onboard, limits the opportunity for exploration of email or other unhelpful applications by curious children who know their way around an iPad. During our study to test the *RELAX Anaesthetics* app, 65% of children using the tablet had no anxiety during

induction compared with 27% using traditional toys and books, despite similar baseline anxiety scores [4]. Providing access to tablets in the anaesthetic room is a low-cost strategy that can be easily implemented, the devices can be easily cleaned, and the impact on preventing a rise in anxiety during anaesthesia induction is significant.

Since winning the AAGBI Prize for Innovation in 2016 [5], we have developed *RELAX Hospital* for use as a distraction tool outside of the operating theatre. It is having a positive impact at reducing anxiety in children in our hospital during procedures on the ward and in outpatients, for example during eye examinations.

The next big decision for us is how to improve access to the technique – either by making the application downloadable or by sharing knowledge via a website. Watch this space!

Peter Brooks

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References

1. Manyande A, Cyna AM, Yip P, Chooi C, Middleton P. Non-pharmacological interventions for assisting the induction of anaesthesia in children. *Cochrane Database of Systematic Reviews* 2015; 7: CD006447.
2. Seiden SC, McMullan S, Sequera-Ramos L, et al. Tablet-based interactive distraction vs. oral midazolam to minimize perioperative anxiety in pediatric patients: a noninferiority randomized trial. *Pediatric Anesthesia* 2014; 12: 1217–23.
3. Cumino DO, Vieira JE, Lima LC, Stievano LP, Silva RA, Mathias LA. Smartphone-based behavioural intervention alleviates children's anxiety during anaesthesia induction: A randomised controlled trial. *European Journal of Anaesthesiology* 2017; 34: 169–75.
4. Fancourt D, Lee C, Baltzer Nielsen S, Capps S, Brooks P. Relax Anaesthetics: The Effect of A Bespoke Distraction App on Anxiety Levels in Children Undergoing Induction of Anaesthesia. *Anaesthesia & Analgesia* 2016; 123(Suppl): 298–9.
5. Brooks P. RELAX Anaesthetics. *Anaesthesia News* 2016; 346: 5.

OBSCymru – a national quality improvement collaboration for Wales



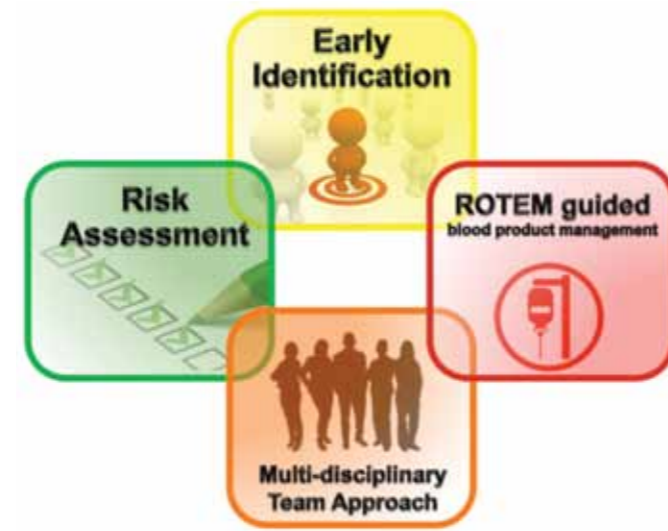
Introduction

Major postpartum haemorrhage (PPH) is a significant and often unpredictable event in the daily activity of a delivery unit. PPH accounted for around 10% of all direct maternal deaths in the UK between 2008 and 2012 with a mortality rate of 0.49 per 100,000 deliveries [1]. In the Scottish Maternal Morbidity Enquires, the incidence of life-threatening PPH has increased from about 3 to 6 per 1,000 deliveries over the last 12 years, with PPH now contributing to 80% of severe maternal morbidity [2]. This level of PPH-associated morbidity can have an impact on the patient and her baby, their family and wider community for many months after the event [3].

In the light of growing research around obstetric coagulopathy [4–7] and important quality improvement work around PPH being undertaken in the USA [8–11], the Obstetric Bleeding Strategy for Wales (OBSCymru) was launched.

What is OBSCymru?

OBSCymru is an all-Wales quality improvement collaboration attempting to establish a world-leading approach to PPH care in Wales with the aim of reducing variation in maternal morbidity and improving outcomes associated with PPH.



The strategy is focused around four key areas:

1. Universal risk assessment

We have developed and promoted a PPH specific risk assessment tool based on current Royal College of Obstetricians and Gynaecologists guidelines [7] for all women on admission to a consultant-led delivery unit. The risk assessment has been designed to be repeatable during labour to account for variations in risk profiles and aims to be simple, pragmatic and practical in implementation with a non-prescriptive approach to escalation.

2. Early identification of PPH

By supporting the integration of real-time blood loss measurement for all deliveries into a planned and escalating approach to PPH, it is anticipated that earlier identification will prompt improved and timely management. Research has demonstrated that healthcare professionals are not able to estimate blood loss accurately [13] and inaccuracies in estimation are worse in larger bleeds. In contrast, gravimetric measurement of blood loss has been shown to be feasible and accurate during major PPH [13]. To support this change in approach, an interactive education tool has been developed.

However, it has been shown that the measurement of blood loss alone does not directly improve maternal outcomes of women suffering a PPH [14], highlighting that it remains critically important to integrate this practice into a multidisciplinary team (MDT) approach.

3. Multidisciplinary team approach

Optimal management of PPH requires a team approach from the outset. The initial midwifery-led care must be escalated appropriately to involve a wide MDT as a PPH becomes increasingly serious [10,11], aiming to have a senior midwife, obstetrician and anaesthetists at the patient's bedside as a bleed escalates past 1000 ml. At the same time, healthcare professionals need to be mindful of the resource burden and potential implication of over-medicalisation of childbirth.

In OBSCymru this escalating MDT approach will be supported by a structured education and training framework with a heavy emphasis on in-situ simulation and emergency drills. Finally, the project will be promoting the extension of the MDT involvement right through the process into case review, governance and reflective learning structures.



4. Point-of-care test guided blood transfusion and blood product management

Into each consultant-led delivery unit in Wales, OBSCymru will support the introduction of point-of-care viscoelastometric monitoring of coagulation, using a ROTEM Sigma device. Initial blood tests for point-of-care testing will be triggered by a measured blood loss of 1000 ml. The results from the ROTEM Sigma, in combination with venous lactate and haemoglobin, will enable clinicians to individualise blood product management for each woman within ten minutes of blood samples being taken.

The importance of this is highlighted by recent research showing that 95% of women suffering a PPH maintain a normal coagulation profile even when they have bled up to 1500 ml [5,6]. The remaining 5%, however, require urgent treatment of their coagulopathy to prevent progression of their bleed to a life threatening event [15,16]. In the absence of point-of-care coagulation testing, the clinician will often treat women empirically with fresh frozen plasma as a coagulopathic state cannot be excluded [12].

OBSCymru Project Aims

To reduce the morbidity and mortality associated with PPH by:

1. Reduce the number of women requiring ICU level 3 care due to PPH
2. Reduce the number of women receiving hysterectomy due to PPH
3. Achieve more than 50% reduction in FFP transfusion
4. Reduce the number of patient having massive PPH (>2500ml blood loss)
5. Reduce the number of women requiring ≥ 5 units of red blood cells

OBSCymru – how did it happen?

National discussions regarding the burden of PPH-associated morbidity and apparent variation in outcomes led to increasing enthusiasm for change across Wales. The project has benefited from UK-wide and international collaborations (for example, The Scottish Maternity & Children Quality Improvement Collaborative (MCQIC), Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) and the Institute for Healthcare Improvement (IHI) and after a successful application to the Efficiency Through Technology Fund (Welsh Government, EETF), OBSCymru was formed. Subsequent to this the project has received ongoing support and promotion from a number of organisations, including:

- The Welsh Government
- 1000Lives Improvement (National Improvement Service for NHS Wales)
- The Welsh Deanery (specifically through the Welsh Clinical Leadership Fellow Training Schemes)
- Maternity Network Wales
- NHS Wales Health Boards
- Werfen UK (supporting the introduction of ROTEM Sigma technology)

This strategic collaboration has been matched by a significant amount of local unit and health board involvement as the project has established local teams within each consultant-led unit. These local teams consist of a midwife, anaesthetist, obstetrician, haematologist and, in some units an ODP, who will be championing the implementation of a bundle of initiatives. Briefly, these include the introduction of:

- A universal 4-stage approach checklist
- An obstetric haemorrhage ROTEM Sigma guided blood product replacement protocol
- A national database for data collection

The project has also highlighted a wealth of opportunity for quality improvement training. This is especially important as quality improvement skills become increasingly represented in specialist training curricula. The teams in each of the units involved in the project will be able to develop these skills with further support from 1000lives, The Welsh Deanery (LINCymru), local quality improvement hubs and the IHI Open School.

It remains as important as ever to consider each patient as being at the centre of the processes we look to improve. In this regard, OBSCymru will build on and utilise the experience of our patient representatives and the results of our patient experience surveys to continually inform us of the impact of the project on our patients, thus providing further opportunities to improve.

Future work

As the project moves forwards we aim to implement a standardised, multidisciplinary, ROTEM Sigma guided approach to PPH care in all consultant-led units across Wales. Further work will involve scoping and engagement exercises to modify the OBSCymru approach as necessary and to incorporate it into stand-alone midwifery units and community delivered care.



Contact

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References
Available online at www.aagbi.org/ANewsMayReferences

EVELYN BAKER MEDAL



THE ASSOCIATION OF ANAESTHETISTS
of Great Britain & Ireland

AN AWARD FOR OUTSTANDING CLINICAL COMPETENCE

The Evelyn Baker award was instigated by Dr Margaret Branthwaite in 1998, dedicated to the memory of one of her former patients at the Royal Brompton Hospital. The award is made for outstanding clinical competence, recognising the 'unsung heroes' of clinical anaesthesia and related practice. The defining characteristics of clinical competence are deemed to be technical proficiency, consistently reliable clinical judgement and wisdom and skill in communicating with patients, their relatives and colleagues. The ability to train and enthuse trainee colleagues is seen as an integral part of communication skill, extending beyond formal teaching of academic presentation.

Nominations are now invited for the award, which will be presented at WSM London in January 2018. Members of the AAGBI can nominate any practising anaesthetist who is also a member of the Association. Nominees should normally still be in clinical practice. The award is unlikely to be given to someone in their first ten years as a consultant or SAS doctor, and the nominee should not be in possession of a national award. Nominations should include an indication that the nominee has broad support within their department.

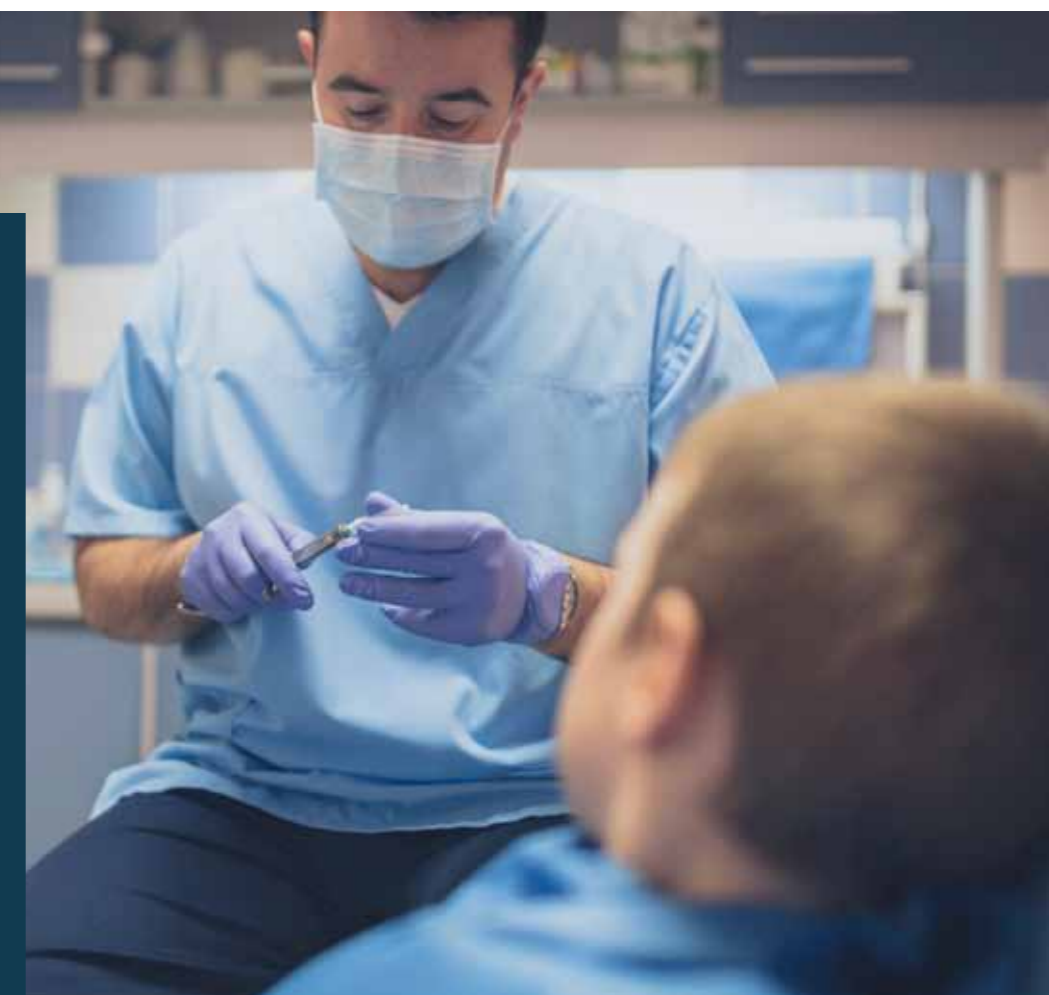
Last year the award was won by Dr Rob John (Sheffield). Details of previous award winners and further information can be found on the website www.aagbi.org/about-us/awards/evelyn-baker-medal

The nomination, accompanied by a citation of up to 1000 words, should be sent to the Honorary Secretary at HonSecretary@aagbi.org by 17:00 on Friday 21 July 2017.

The Association of Dental Anaesthetists



The Association of Dental Anaesthetists (ADA) is one of the smaller specialist societies under the aegis of the AAGBI, with a membership of around 200. It was founded in 1977 in an era when dental anaesthetic practice in the UK was rather different from what it is today. Dental sedation was in its infancy – or at least childhood – and most dental treatment was performed either under local anaesthesia (provided by the dentist), or under general anaesthesia provided by a medical practitioner – not necessarily a trained anaesthetist.



The vast majority of dental general anaesthetics were given in the community in local dental practices, often by relatively inexperienced or inadequately trained practitioners, sometimes using outdated and/or inadequate equipment, with the inevitable result that near misses and the occasional death were reported periodically. The ADA was established to provide a forum for discussion of dental anaesthesia, with a view to improving standards of practice. However, anaesthetic problems (and deaths) persisted and led to publication of the Poswillo Report in 1990, and later A Conscious Decision (a government report published in 2000), concerning standards of care in dental anaesthetic practice. The latter finally ruled that all dental general anaesthetics had to be administered in 'a hospital setting' from January 2002, and dental anaesthesia thereafter became part of mainstream anaesthetic practice.

The ADA responded to this change by devoting increasing time to discussion of sedation practice. Inevitably there is competition in this area with SAAD (Society for the Advancement of Anaesthesia in Dentistry) and DSTG (Dental Sedation Teachers Group), but the ADA leads in the promotion of advanced sedation techniques in dentistry and elsewhere. There is a growing role for these now that

general anaesthesia is no longer permitted in dental practice, and the ADA wants to see all sedation activities performed under the safest conditions in all areas. It is also actively involved with the development of national guidance on sedation.

The ADA holds an annual meeting, usually in London, covering a range of topics related to dental care, with the focus on patient management using sedation, hypnosis, and allied methods. The next meeting will be on Tuesday 28 November 2017.

The ADA is managed by its Council, to which any member may be elected, and welcomes as new members all professionals interested in any aspect of dental anaesthesia, sedation, and allied topics – come and join us! For more information, visit our website: <http://www.dentalanaesthesia.org.uk>

Ian Fletcher
Treasurer, ADA and retired Consultant Anaesthetist

www.dentalanaesthesia.org.uk

SCReaM!

Surrey Crisis Resource Management Programme: introducing human factor training alongside operating theatre emergency prompt cards

A recent review in *Anaesthesia News* [1] highlighted the importance of checklists and standard operating procedures that the aviation industry has become so familiar with. In healthcare, checklists are used increasingly, with the WHO Surgical Safety Checklist now associated with reduced morbidity and mortality. This has become accepted as the gold standard of care. However, beyond this, we rarely use checklists in the emergency situation.

Managing critical incidents involves rapid recognition and decision making, often relying on memory alone. Here, professional autonomy is less prominent and, in its place, standardised algorithms are frequently used [2]. Of the 234 million operations per year undertaken worldwide, it is estimated that there are 3 million intra-operative adverse events [3]. Evidence suggests that during these stressful situations, key lifesaving treatment steps are often omitted because human memory and performance can be negatively affected. We have seen how cognitive aids have been adopted by many high-risk industries (aviation, nuclear power) to improve outcomes, and evidence suggests theatre team performance in emergencies improves with cognitive aids [4], thus reducing a major source of variation in morbidity and mortality.



In order for a group of individuals to work effectively together, we must also consider our behaviour, how we think, make decisions and communicate. Drawing from decades of global experience, numerous accidents and incidents in the airline industry have been the driver to increase safety throughout all aspects of flying, not just in emergency situations. By constantly looking inwards the industry has developed an ethos that underpins the individual's knowledge and skills with a new set of tools. These so called non-technical skills are sometimes referred to as 'soft skills'. They are in essence, the 'why' and 'how' behind what we do on a daily basis. The skills lean heavily on an individual's characteristics and ability to think, act and communicate not only in times of high stress and a demanding environment, but on a day to day level that promotes and increases efficiency and best practice.

It is an ethos that is now so highly regarded and recognised that it has become regulated and supported at all levels within the industry. The parallels between aviation and medicine are plain to see: identification of threats and the errors that can arise from these threats, decision making, situation awareness, communication, leadership and teamwork, stress and fatigue to name just a few. The theory is not new to the NHS; however, the application and implementation in daily practice are only just beginning.

The Surrey Crisis Resource Management (SCReaM) programme is a collaborative effort undertaken by the Royal Surrey County Hospital NHS Foundation Trust, Ashford & St Peter's Hospitals NHS Foundation Trust, Orchard Training Solutions, and the University of Surrey to enhance patient safety by improving theatre team performance. We have designed and implemented the UK's first operating theatre emergency cognitive aid manual (SCReaM Prompt Cards), which are analogous to those used in the aviation industry by pilots during emergencies to ensure they complete key actions during a crisis. With the focus on 33 critical events, each prompt card contains a series of key lifesaving management steps, designed to take care of the 'mundane' stuff so that clinicians can focus on the more complex decisions to be made. This is alongside a rolling programme of human factor training for all permanent theatre team members across both acute trusts (approx. 400 staff).

Critically, for each theatre operating list, there is a nominated and clearly identified (via an orange identity card) 'Reader of the Card' (ROC) who has the sole responsibility at the onset of a critical incident to access the cards located on the wall of each theatre and anaesthetic room and bring them to the attention of the team leader to ensure all key processes are undertaken. This is based on work undertaken using simulation which shows that even when cards are available, in emergency situations they are often not used because the senior member of staff becomes too distracted by the immediacy of the emergency. The ROC ensures the whole team works together and all potentially lifesaving processes are completed.

Our experience at Stanford University in California in 2015, where cognitive aids have already been introduced, highlighted the change management required to embed the checklists into clinical practice, rather than become a book that was left to gather dust in a theatre drawer. Hence SCReaM is a multifaceted initiative which includes a multidisciplinary human factors training programme where we learn and share lessons with the aviation industry. The 1-day off-site course is jointly delivered by hospital consultants and airline Crisis Resource Management Trainer pilots, delivered through facilitation. The course focuses on human factors and developing the non-technical skills of communication, threat and error management, situation awareness, decision making, leadership and workload management. These are the skills that if learnt and used would actually help prevent a crisis. This has proved invaluable in developing the role of the prompt cards in the clinical setting, as well as empowering individuals and promoting team working.

Like aviation, constant advances in medicine have meant that clinicians can do more to improve patient safety and care. To do this requires

In event of emergency, read out by ROC nominated at team brief

Royal Surrey County Hospital NHS
Index
Ashford and St. Peter's Hospitals NHS

<p>Cardiac Arrest</p> <ul style="list-style-type: none"> ● 1. Asystole / Pulseless Electrical Activity ● 2. VF / Pulseless VT ● 3. Reversible Causes: 4Hs and 4Ts ● 4. Newborn Life Support <p>Critical Events</p> <p>Airway / Breathing</p> <ul style="list-style-type: none"> ● 5. Unanticipated Difficult Airway ● 6. Bronchospasm In Intubated Patient ● 7. Laryngospasm ● 8. Aspiration ● 9. Airway Fire ● 10. Emergency Management Tracheostomy ● 11. Emergency Airway Management In Laryngectomy Patient <p>Cardiovascular</p> <ul style="list-style-type: none"> ● 12. Myocardial Ischaemia ● 13. Massive Haemorrhage ● 14. Venous Air Embolism <p>Obstetric</p> <ul style="list-style-type: none"> ● 15. Eclampsia ● 16. Maternal Collapse >20 Weeks Gestation 	<p>Anaesthetic</p> <ul style="list-style-type: none"> ● 17. Malignant Hyperthermia ● 18. Local Anaesthetic Toxicity ● 19. Anaphylaxis ● 20. Total Spinal ● 21. Delayed Emergence <p>Equipment</p> <ul style="list-style-type: none"> ● 22. Fire In Theatre ● 23. Emergency Robot De-docking ● 24. Power Failure ● 25. Oxygen Pipeline Failure <p>Symptom based management</p> <ul style="list-style-type: none"> ● 26. Increased Airway Pressure ● 27. Hypoxaemia ● 28. Low CO₂ ● 29. High CO₂ ● 30. Intraoperative Hypotension ● 31. Intraoperative Hypertension ● 32. Unstable Bradycardia ● 33. Unstable Tachycardia
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Emergency Action Prompt Cards

efficiencies beyond technology alone. The way we think, how we communicate, make decisions, lead our team and act as part of one have to become more effective just to keep up with these advancements. Having awareness of our own capabilities and limitations, but more importantly of those we work with, will improve the overall efficiency of the individual and team with the potential result being increased productivity and a more positive outcome for the patient.

The SCReaM project was launched in September 2015 and we have now introduced the prompt cards into all operating theatres. In addition to the human factors training days, high-fidelity simulation has also been developed and deployed. Using the skills learned in the classroom, the high-fidelity sessions give multidisciplinary team members from the operating theatre environment (namely surgeons, anaesthetists, operating department practitioners and theatre nurses) the vital opportunity to train together as a team rather than in silos and embed the prompt cards into practice in a safe, non-threatening environment, while keeping patients safe.

To date, over 200 staff have been through the SCReaM training programme. Feedback has been universally positive, and we are looking to roll it out into other departments within our Trusts. The next step is to modify the prompt cards for use on the labour ward, and we plan to train 80 midwives and obstetricians in the next phase of SCReaM's development. Momentum in this area is certainly increasing, and the AAGBI is in the process of developing a similar set of cards, the Quick Reference Handbook for unexpected crises in anaesthesia. We would be delighted to hear of other hospitals interested in or developing a similar programme.

Acknowledgments

Our thanks go to Dr David Gaba and the Stanford Anaesthesia Cognitive Aid Group for their expert advice on checklist implementation and simulation. Our thanks also to Dr Rob Galloway (Emergency Medicine Consultant, Brighton & Sussex University Hospitals NHS

Trust) for his unfailing enthusiasm and guidance on human factor training, Anh Parker (Senior Graphic Designer) at the Royal Surrey County Hospital, and the University of Surrey for their support and use of facilities.

Wendy King and Suzi Lomax

Consultant Anaesthetists and SCReaM Co-Leads, Royal Surrey County Hospital NHS Foundation Trust

Rob Menzies

Consultant Anaesthetist and SCReaM Co-Lead Ashford & St Peter's Hospital NHS Foundation Trust

David Moss and Simon Lewis

Commercial Pilots and Crew Resource Management Facilitators, Orchard Training Solutions

Cally Dean

Consultant Anaesthetist, Brighton and Sussex University Hospitals NHS Trust

Will Tart

Patient Safety Fellow, Royal Surrey County Hospital NHS Foundation Trust

References

1. Naughton A. A view from the other ether. *Anaesthesia News* 2017; **354**: 18-9.
2. Resuscitation Council (UK) Guidelines. www.resus.org.uk/resuscitation-guidelines/ (accessed 31/01/2017).
3. Ziewacz JE, Arriaga AF, Bader AM, et al. Crisis checklists for the operating room: development and pilot testing. *Journal of the American College of Surgeons* 2011; **213**: 212-7.
4. Arriaga AF, Bader AM, Wong JM, et al. Simulation-based trial of surgical-crisis checklists. *New England Journal of Medicine* 2013; **368**: 246-53.

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The Fellow's roles will include involvement in general journal business including handling submissions (but not with direct responsibility). The Fellow must also:

- Attend the 6-monthly Editors' away days and Editorial Board meetings during their term;
- Attend at least one Committee on Publication Ethics forum/meeting;
- Attend the AAGBI Annual Congress in September 2017, AAGBI Winter Scientific Meeting in January 2018, and either the GAT Annual Scientific Meeting in June 2018 or Annual Congress in September 2018, and assist in the programmes as required.

The Fellow will be answerable to and supervised by a designated Editor and thence the Editor-in-Chief and Editorial Board. There will be no payment or honorarium but reasonable travel expenses to attend the above meetings will be met, according to usual AAGBI policy.

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Suitable applicants must:

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- Have an interest in, and commitment to, advancement of the specialty via the areas described in the AAGBI research strategy (<http://www.aagbi.org/research>);
- Undertake to maintain strict confidentiality regarding all journal/AAGBI activities;

Selection will be by a panel consisting of the Editor-in-Chief, an Editor and a GAT Committee representative.

Applications must be received via email by **midnight on 31 May 2017** to anaesthesia@aagbi.org, and should consist of:

1. A brief (max. half-page) CV, to include your current position, AAGBI membership number and CT date;
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THE ASSOCIATION OF ANAESTHETISTS
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Call for nominations for the Featherstone Professorship

Nominations are sought for the AAGBI's 2017 Featherstone Professorship, which is awarded to practising clinicians and scientists who have made a substantial contribution to anaesthesia and its related subspecialties in the fields of safety, education, research, innovation, international development, leadership, or a combination of these.

Applications should be submitted using the application form available on the website www.aagbi.org/about-us/awards/featherstone-professorship. The closing date for applications, which should be sent to honsecretary@aagbi.org, is **26 May 2017**.

The AAGBI's Honours and Awards Committee will consider nominations at its meeting on 09 June 2017, and will make recommendations to the Board of Directors, which will determine the recipient of the 2017 Featherstone Professorship (if any) at its meeting on the same date. The successful nominee will be informed shortly afterwards. The award will be made at the AAGBI's Annual Congress in Liverpool (27-29 September 2017).

Featherstone Professorships are held for two years, during which the holder will be required to deliver a Featherstone Oration at a major AAGBI meeting.

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Dear Editor

Lessons learnt

We enjoyed the recent piece by Dr Gilbert-Kawai [1], and it made us muse about some anaesthetists' comments we've heard:

'Kiss your child goodbye' – said to the anxious mother of a child who had just been anaesthetised – could become 'Would you like to give your child a kiss before you go?'

'We'll see you when you wake up' – which may make the patient wonder where the anaesthetist will be during the operation!

'We'll see you on the other side' – which might be misconstrued as 'see you in heaven – or hell!'

'If you wake up and have pain...' – may make the patient worry that either (a) they will wake up during the operation and have pain or (b) they won't wake up, but that they may have pain. Better to discuss during the pre-operative visit, e.g. 'When you wake up after the operation, if you have pain...'

'She's asleep now', said to the anxious mother, when her even more anxious and large 18-year-old daughter had just closed her eyes after a 'sleep dose' of propofol. Unfortunately her daughter then moved her head and arm, as the propofol rapidly re-distributed. Maybe: 'she's getting sleepy now?'

Midwives trying to reassure may misleadingly state that 'you won't feel a thing after the epidural'. A patient will. 'This is going to sting' might be better replaced with 'I'm going to give you the numbing medicine now'. If someone is crying during labour then 'don't worry, stop crying, you're doing fine', is possibly better replaced by a recognition that 'tears are normal', and 'they can wash away any stress and bad emotions while we support you'.

As wearers ourselves, we would endorse his comments about spectacles; but would also add that dentures and hearing aids might be left in situ if surgery is remote from these sites.

Viima Uzkalniene

Associate Specialist in Anaesthesia

Colm Lanigan

Semi-retired Consultant Anaesthetist

University Hospital Lewisham, London

Reference

1. Gilbert-Kawai N. Lessons learnt from being at the other end of the syringe. *Anaesthesia News* 2017; **356**: 6.

Dear Editor

Beyond tubes and cannulae – my anaesthetic taster week

In my FY1 year I developed an interest in a career in anaesthetics and decided to organise a taster week in the field. I was given a schedule with different types of operating lists, time spent with the pain team and a day in the intensive care unit. During the week I worked closely with the anaesthetists and observed them carrying out highly skilful procedures while sharing their knowledge with myself.

My aim was to learn technical skills like cannulations, mask ventilations and intubations, but I thoroughly enjoyed observing and learning about other important skills including team working, communication and leadership [1]. I saw how ingrained these skills were in my senior colleagues' behaviour and their day to day activities. It was fascinating to watch a team brief prior to a surgical list. Briefs always start off with formal introduction of each individual member as this helps to strengthen a cohesive team. Information about each case was then shared and discussed, ensuring full awareness of all team members present. This made junior members of the team more comfortable and allowed us to raise concerns if needed.

Following the meeting, the anaesthetist and the ODP prepared the drugs and equipment which could be needed during the case; they were all labelled and checked. I noticed the careful and focused manner in which this task was carried out. The anaesthetist communicated their airway management plans, including a backup plan, to the ODP in order to ensure a good mutual understanding and anticipation of the case.

I observed the use of WHO Surgical Safety Checklist and was impressed to see that this checklist and rigid regime was used before every single case that I assisted on during my taster week. I had expected that with experience and confidence, the use of checklists would reduce, but I understood the importance of using these and not just relying on memory and experience for critical tasks. I also appreciate that they are necessary as it is confidence and experience that can cause a doctor to fixate on more detailed points and miss an error. I learned to appreciate the importance of being prepared and having a plan in case of an unexpected turn of events, for example double checking the availability of blood prior to starting the case.

Team working is an important skillset for all doctors, which is particularly demonstrated in anaesthetics. I noticed the high frequency of formal introductions. This made me feel part of the team and created a safer environment where everybody's skills could be used appropriately. There was clear communication and cooperation between the surgical team and the anaesthetist. It was plain that everybody was aiming to achieve the same goal, getting through the case successfully and safely.

This taster week provided me with excellent insight into the work of an anaesthetist beyond tubes and cannulae. It allowed me to gain an understanding of the importance of human factors in anaesthetics and the role in patient safety.

Mikaela Nordblad

FY2, St Peter's Hospital, Chertsey

Manisha Shah

Consultant Anaesthetist, Medway Maritime Hospital

Reference

1. University of Aberdeen and SCSC. Framework for Observing and Rating Anaesthetists' Non-Technical Skills. www.abdn.ac.uk/iprc/documents/ANTS%20Handbook%202012.pdf

your Letters

SEND YOUR LETTERS TO:
The Editor, *Anaesthesia News* at anaenews.editor@aagbi.org
Please see instructions for authors on the AAGBI website

Dear Editor

I was pleased to read your recent article on non-Luer neuraxial connectors [1], and the same week to be visited by a rep, who was armed with some NRFit™ samples. They seem usable; even an old fool like me managed to assemble them without any instruction. However, this isn't a letter intending to congratulate.

On 25 May 1961, President John F Kennedy announced America's intention to land a man on the moon [2]. That ambition was realised on 20 July 1969 – a little over eight years later. If we accept that the original National Patient Safety Agency alert was in 2009, what has been achieved regarding neuraxial connectors over roughly the same length of time?

The NPSA [3] were originally concerned with two problems:

1. The inadvertent administration of vincristine intrathecally (solution – non-Luer spinal connectors from '1st April 2012').
2. The inadvertent administration of bupivacaine intravenously (solution – non-Luer epidural connectors from '1st April 2013').

The decision to let the private sector come up with non-Luer spinal connectors has resulted in a variety of different designs, while each hospital's choice (including the original Luer) is largely whimsical. However, none of the designs absolutely prevent you drawing up something awful (e.g. chlorhexidine) into a compatible syringe and injecting it into the CSF.

The intravenous bupivacaine danger is even further from a foolproof solution, regardless of when the NRFit™ connectors are implemented. It will still be possible to take a 500 ml bag of bupivacaine solution, attach a standard intravenous giving set and give the whole dose intravenously. Why the proximal bag spike issue has not been resolved defies all common sense. Surely a smaller diameter spike on epidural giving sets, together with a smaller access port on all bags of local anaesthetic solution, could have been a simple cure for the problem?

I wonder how long it will be before our neuraxial systems are genuinely safe from error? Will it be a small step, or a giant, very protracted, leap?

Nick Flatt

*Consultant Anaesthetist,
Royal Albert Edward Infirmary, Wigan*

References

1. Sharpe P. What's happening with 'non-Luer' connectors? *Anaesthesia News* 2017; **354**: 10–11.
2. Kennedy JF. Address to Congress – 25 May 1961. www.youtube.com/watch?v=TUXuV7XbZvU (accessed 18/01/2017).
3. Safer spinal (intrathecal), epidural and regional devices. NPSA/2011/PSA001; January 2011. www.nrls.npsa.nhs.uk/alerts/?entryid45=94529 (accessed 18/01/2017).

Reply to Dr Flatt

It is reassuring to hear from Dr Flatt that the NRFit™ products he has seen were self-evident in terms of assembly and of a usable standard. This assessment will indeed be well received by those involved in the design of the ISO standard, its development and extensive user testing before manufacturing and marketing of the company's individual products [1].

Dr Flatt is correct in his opinion that the NRFit™ system does not 'absolutely prevent you drawing up something awful (e.g. chlorhexidine) into a compatible syringe and injecting it in to the CSF'. Indeed, no single system alone is ever likely to do this, this very example being the focus of a recent NHS England Patient Safety Alert on chlorhexidine safety and a subsequent Patient Safety Alert from NHS Improvement on restriction of open systems for injectable medications [2,3]. It does however add a significant extra barrier to inadvertent wrong route administration, which has been the case in the clinical catastrophes that have occurred to date with the Luer spinal system.

The inadvertent administration of local anaesthetic intravenously is really made up of two risks, the syringe bolus and the infusion bag. Picking up a syringe of local anaesthetic and administering it intravenously in error, often during stressful situations, is well recognised. The converse has also been reported, where drugs intended for intravenous use have also been administered as epidural bolus doses in error. Providing we use the NRFit™ system as one of our many safety steps, this accidental wrong route error should again be reduced.

The ability to take an infusion bag and attach it to an intravenous giving set has been removed already by one manufacturer using a proprietary system [4], creating the first bag-to-patient fully compliant system. A generic international standard is currently under consideration which will provide all manufacturers with the single 'common sense' solution Dr Flatt refers to. It is thought that this solution is at least two years away from delivering clinical products into the NHS. Yes, we could wait for that perfect solution before introducing NRFit™, but that would deny the existing safety benefits of the NRFit™ system during that time. As Colonel George S Patton said, 'A good solution applied with vigour now is better than a perfect solution applied ten minutes later' [5].

Our experience of working on this project for many years has taught us that while the potential solutions to prevent wrong-route injections may initially seem straightforward, they usually bring additional complexities to the clinical and manufacturing environments, which impinge on functionality, clinical acceptability and patient safety. Any solution needs to address all of these requirements, and ISO are to be congratulated for having delivered a solution that is supported by manufacturers and clinicians.

It is worth remembering that change is not always embraced, especially at the time of change. Using Dr Flatt's own example, most Americans were not supportive of the moon landings, but the benefits and technological spinoffs from that momentous event have revolutionised modern life and seen a pivotal change in opinion [6]. We hope that will be so with our project too.

Paul Sharpe

*University Hospitals of Leicester NHS Trust
On behalf of NHS Improvement Neuraxial Oversight Group*

References

1. Wilkes T et al. Usability study on ISO 80369-6 connectors (2014-12-31) – ISO TC210 JWG4 N0288.
2. NHS England Patient Safety Alert. NHS/PSA/W/2015/005. *Risk of death or severe harm due to inadvertent injection of skin preparation solution*. www.england.nhs.uk/wp-content/uploads/2015/05/psa-skin-prep-solutions-may15.pdf (accessed 19/02/2017).
3. NHS Improvement Patient Safety Alert. NHS/PSA/D/2016/008. *Restricted use of open systems for injectable medications*. https://improvement.nhs.uk/uploads/documents/NHSI_Patient_Safety_Alert_-_Restricted_use_of_open_systems.pdf (accessed 24/02/2017).
4. CADD@-solis ambulatory infusion pump. Smiths Medical (UK). <https://www.smiths-medical.com/products/infusion/ambulatory-infusion/ambulatory-infusion-pumps/caddsolis-ambulatory-infusion-pump> (accessed 20/02/2017).
5. Patton GS. In 'The Unknown Patton' by Charles M. Province 1983. https://en.wikiquote.org/wiki/George_S._Patton (accessed 20/02/2017).
6. Madrigal AC. Moondoggle: The forgotten opposition to the Apollo program. *The Atlantic* 2012. <https://www.theatlantic.com/technology/archive/2012/09/moondoggle-the-forgotten-opposition-to-the-apollo-program/262254/> (accessed 19/02/2017).

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Panel of Quality Assurance assessors for Learn@AAGBI videos

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The AAGBI has a rigorous Quality Assurance process that includes on-site assessment by a member of Council. In addition, all videos are checked and undergo further Quality Assurance before being added to the **Learn@AAGBI** platform.

The Education Committee is now seeking to appoint additional members to its Quality Assurance Panel, to assist with this process. We anticipate 1-3 videos to review per Panel member during the few weeks following each conference, using a standardised assessment template. Training/support will be available as appropriate/required.

We welcome applications from all sections of the membership, but Irish and SAS (non-consultant non-trainee) doctors are currently under-represented on the Panel.

Interested candidates must be AAGBI members and can be of any grade; they should have a clear interest in medical education. Applications should be sent by email to learn@aagbi.org and should include a brief (< 300 words) personal statement describing their suitability for the position. Appointment to the Panel is for three years in the first instance.

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The closing date for applications is **Friday 29 September 2017**.

Three prizes will be awarded and the winners will be invited to present their work and collect their prizes at the Winter Scientific Meeting in London on 12 January 2018.

Previous winning entries for the AAGBI Award for Innovation, Critical Care and Pain:

2017 - An oxygen reservoir for use in difficult environments by Dr Susan Dorsch, Dr Roger Eltringham, Dr Ylva Konsberg, Mr Robert Neighbour and Dr David Peel.

2016 - *Relax Anaesthetics* by Dr Peter Brooks, Consultant Anaesthetist at Chelsea and Westminster Hospital NHS Foundation Trust.

2015 - The Non Injectable Arterial Connector (NIC) by Dr Maryanne Mariyaselvam.

2014 - 'SAFIRA - Safe Injection System for Regional Anaesthesia' by Dr Emad Fawzy.

2013 - 'The Mobile Capnograph' by Safe Anaesthesia Worldwide.

2012 - 'Air-Free Drip Chamber' by Dr James Limb and 'Ultrasound-Guided Regional Anaesthesia with an Optimised Ultrasound Transducer' by Dr Graeme McLeod.

Find out more about the AAGBI Innovation Award visit
www.aagbi.org/innovation

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Call for nominations for the AAGBI Awards and AAGBI Foundation Awards



Nominations are sought for the following awards:

The AAGBI Award is awarded by the Board of Directors of the AAGBI to those who have made significant contributions to the AAGBI, its objects and goals, or its members. The award is not restricted to members of the AAGBI. The current objectives of the AAGBI are:

- To advance and improve patient care and safety in the field of anaesthesia and disciplines allied to anaesthesia.
- To promote and support education and research in anaesthesia, medical specialties allied to anaesthesia and science relevant to anaesthesia.
- To represent, protect, support and advance the interests of its members.
- To encourage and support worldwide co-operation between anaesthetists.

The AAGBI Foundation Award is awarded by the Board of Trustees of the AAGBI Foundation, the AAGBI's charity, to those who have made significant contributions to the AAGBI Foundation, its objects and goals. The award is not restricted to members of the AAGBI. The current objectives of the AAGBI Foundation are:

- The advancement of public education in and the promotion of those branches of medical science concerned with anaesthesia, including its history.

- The promotion of study and research into anaesthesia and related sciences and the publication of the results of all such study and research.
- The advancement of patient care and safety in the field of anaesthesia and disciplines allied to anaesthesia in the UK, Ireland and anywhere else in the world.

Nominations should take the form of a short description of the nominee's contributions (no more than one side of A4 paper*). Self-nomination is acceptable. If you nominate someone else, you should gain their approval for your nomination. The closing date for nominations, which should be sent to honsecretary@aagbi.org, is 26 May 2017.

The AAGBI's Honours and Awards Committee will consider nominations at its meeting on 09 June 2017, and will make recommendations to the Board of Directors of the AAGBI and the Board of Trustees of the AAGBI Foundation, which will determine the recipients of the 2017 AAGBI Awards and AAGBI Foundation Awards. The successful nominees will be informed shortly afterwards. The awards will be made at the AAGBI's Annual Congress in Liverpool (27-29 September 2017) or at WSM London 2018 (10-12 January 2018).

* Minimum font size = 12 pt



Anaesthesia Digested

Anaesthesia May 2017

All this month's articles have used simulation to study performance in the clinical environment.

A randomised, crossover simulation study comparing the impact of chemical, biological, radiological or nuclear substance personal protection equipment on the performance of advanced support interventions

Schumacher J, Arlidge J, Garnham F, Ahmad I.

The recent Ebola outbreak in West Africa should be a reminder that personal protection equipment is particularly important for the wellbeing of caregivers in many challenging circumstances. In this country there are also many situations of chemical, nuclear, radiological and biological hazard that require heavy duty protection. Many protection suits are bulky and unwieldy, and it is inevitable that sooner or later we will be called upon to provide advanced life support while using such equipment, so it may be a good idea to study and consider this before it actually happens to us.

The authors assessed the performance of 30 anaesthetists performing advanced life support in a simulated scenario using a manikin. Times to complete resuscitation manoeuvres were used to assess and compare performance without protection, with protection using the Powered

Respiratory Protective Suit (PRPS) and with protection using a more lightweight alternative, Polyprotect 12.

Fortunately, there were no adverse events for either the manikin or the participants who wore protection suits during the simulated exercise. Perhaps unsurprisingly, the unprotected participants performed best. The PRPS was less comfortable than the Polyprotect 12, and time to complete interventions was significantly longer with the PRPS than with the Polyprotect 12. What is surprising is that the Polyprotect 12 is cheaper than the PRPS. This may be one of those rare times when we can improve protection for clinicians, improve patient management and save money all at the same time.

A prospective, randomised trial of pre-oxygenation strategies available in the pre-hospital environment

Groombridge C J, Ley E, Miller M, Konig T.

Pre-oxygenation is a strategy that we use to increase the safe apnoea period after induction of anaesthesia in theatres. It is particularly useful in situations where intubation or facemask ventilation may be difficult, and has become a standard of care in operating theatres. In the pre-hospital environment, pre-oxygenation is arguably even more important before induction of anaesthesia, but how best to accomplish it without an anaesthetic machine, using equipment that is generally available?

The authors compared efficiency of pre-oxygenation in healthy volunteers

using a non-rebreather mask, bag-valve-mask and a portable ventilator, with ease of breathing as a secondary outcome. The portable ventilator was the most efficient method of pre-oxygenation, then the bag-valve-mask, then the non-rebreather mask. Unfortunately, both the portable ventilator and the bag-valve-mask were perceived as significantly more difficult to breathe through than the non-rebreather mask. Whatever method is preferred will depend on circumstances, but this study provides useful data to help the pre-hospital clinician make decisions.

An investigation into the effects of real vs. stimulated cases and level of experience on the distribution of visual attention during induction of general anaesthesia

Grundgeiger T, Kloffel C, Mohme S, Wurmb T, Happel O.

The previous two papers used simulated environments to study resuscitation performance with manikins and pre-oxygenation with volunteers. The assumption underlying both studies is that the results will also be applicable to real-world situations. This paper by Grundgeiger et al. explored these assumptions, and compared anaesthetists' visual attention and interaction with monitoring in both simulated and real environments.

The authors concluded that anaesthetists in simulated environments paid more visual attention to monitoring than in real cases, and this was

unaffected by the experience of the anaesthetist. They highlight the need for caution in extrapolation of results from simulated environments, particularly where visual attention is a factor.

These results may be due to the typical limitations of design in simulated training environments, where participant behaviours are driven more by visual and auditory cues from monitors and other sources of data than more diverse and subtle cues in a real-world environment that involves patients rather than manikins.

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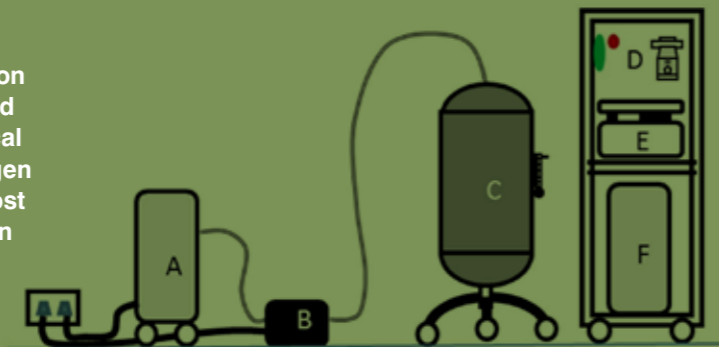
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Innovation award-winning oxygen reservoir

A unique system for storing oxygen from an oxygen concentrator has won first prize in this year's AAGBI Award for Innovation in Anaesthesia, Critical Care and Pain. The Diamedica Oxygen Reservoir System provides a low-cost solution to back up oxygen supply in low resource settings and remote locations, where oxygen is often scarce.



A	Oxygen concentrator
B	Diamedica reservoir pump
C	Diamedica reservoir vessel
D	Anaesthetic workstation
E	Anaesthetic ventilator
F	Integral oxygen concentrator

The oxygen reservoir was submitted to the innovation awards as it is the first commercially available device to effectively capture and store oxygen from a concentrator at safe pressures for use in hospitals. Diamedica are delighted that the AAGBI has recognised the reservoir system's importance and its potential to make medical oxygen universally available.

Most hospitals in low resource settings do not have a reliable oxygen supply. Piped oxygen is a rarity and oxygen cylinders are expensive, difficult to transport, and run out. Domiciliary oxygen concentrators are widely used as a low-cost source of oxygen, but they depend on electrical power that is notoriously unreliable in low resource settings. One approach is to provide electrical backup systems to overcome the electrical power failures, but this can be expensive and cumbersome. The novel Diamedica technology enables the storage of oxygen which has been generated by a concentrator when electricity is available. Thus essential oxygen is always available, even during subsequent power cuts.

The system consists of two elements: a compressor and a storage vessel. The compressor pump takes oxygen produced by the concentrator and pressurises it to 5 bar. The compressed oxygen is then stored in an aluminium reservoir vessel. The reservoir vessel is on wheels so it is easily moved around the operating theatre and to the bedside.

Oxygen supply in anaesthesia

This versatile system is designed to store oxygen in vessels at a pressure of 5 bar which is adequate to drive a suitable ventilator (Diamedica Helix Ventilator) or anaesthesia machine (Glostavent Helix). The storage of oxygen at these lower pressures does not require sophisticated and complex technology, at the same time the lower pressures ensure the safety of the system for use in a hospital environment.

The stored oxygen can be used for both draw-over and continuous flow anaesthesia, but it should be recognised that a continuous flow machine is likely to use 6 to 8 times the flow rate required by a draw-over machine, and would therefore require the storage of much greater quantities of oxygen to give reasonable backup times. Work is ongoing to enable this. Oxygen stored in the reservoir vessels can also be used for direct supply to patients during power cuts or when all the oxygen concentrators are already in use with other patients.

The cost effectiveness of this approach can be illustrated by considering that oxygen per litre generated from concentrators may be as little as 1% of the cost of oxygen provided in cylinders. Generating oxygen at the point of use eliminates the problems of transport and, with the possibility of storing that oxygen in multiple vessels, the approach has great potential for cost savings as well as security of supply.

Feedback

This original concept and design of the oxygen reservoir system was first described in *Anaesthesia News* in 2015 [1], since when it has successfully transitioned into wider production and is now in use in 14 countries where supplies of medical oxygen are limited. Feedback has been very positive as the following examples illustrate.



Kenya

A reservoir system supplied with a low pressure/low flow Glostavent Helix anaesthesia machine has made a considerable impact at a low cost day care surgery centre in Nyeri, Kenya. According to surgeon Dr Mathenge Nduhiu, operations do not proceed without the reservoir vessels on standby and they are mainly used in recovery. Without the system the hospital would be making round trips to Nairobi of 400 km every fortnight to refill oxygen cylinders. In the long term this will translate into large savings for the hospital that will help to keep their costs lower.



Liberia

Two oxygen reservoir systems were supplied to hospitals in Liberia by Maternal and Childhealth Advocacy International (MCAI), one of the few charities that worked in the country during the Ebola epidemic. MCAI Medical Director, Professor David Southall, confirmed that the reservoir systems had been invaluable at both Phebe Hospital and C.B. Dunbar Maternity Hospital. An oxygen generating plant has now been installed at Phebe, although the reservoirs continue to be used on a daily basis, as a backup supply in theatre and for patients in intensive care. C.B. Dunbar Hospital has no oxygen generator and cylinders have to be transported from Monrovia, some 200 km away. The oxygen reservoir system at this hospital continues to provide an invaluable resource that ensures a supply of oxygen is always on hand when needed.

Mobile hospitals

The reservoir system is used not just in fixed locations but also in mobile hospital units. The Dutch organisation Hospitainer supplies fully-equipped mobile hospitals to the UN, MSF and other organisations in response to emergencies. They now include the Diamedica oxygen reservoir system in their mobile hospitals. CEO Rolof Mulder selected the reservoir system because its mobility, ruggedness, ease of use and independence of cylinders makes it a reliable and practical solution for the challenging conditions in emergency and disaster situations.

Future developments

A further application of the Diamedica reservoir system has been with SOLOX™, a system developed by Dr David Peel to harness solar power to drive an oxygen concentrator for low resource settings. SOLOX™ won a runner up prize at this year's innovation awards at AAGBI WSM London, where Dr Ylva Konsberg presented recent work on this application. The system has used multiple Diamedica oxygen reservoir vessels in tandem to store oxygen generated by SOLOX™, with the aim of developing a product suitable for use with a standard continuous flow anaesthesia machine. Field trials of this system are now being planned.

There remains a huge unmet need for reliable oxygen supplies in low-resource settings, essential both for anaesthesia and for oxygen therapy. Our aim is to overcome this, even in the most remote locations. Diamedica supply anaesthesia equipment to more than 70 countries worldwide and now offers the oxygen reservoir system as a standard accompaniment to our Glostavent anaesthesia machines.

Robert Neighbour
Managing Director

Carol Newman
Charity Liaison Officer

Diamedica (UK), Ltd

Reference

1. Neighbour R, Eltringham RJ. An oxygen reservoir for use in difficult environments. *Anaesthesia News* 2015; **334**: 19–20.

ANAESTHESIA NEWS FROM THE PAST

Anaesthesia Cases

Evidence-based medicine guides practice, but case reports fill the gap where the evidence does not currently exist and are used as a platform to launch formal studies, to document trends in new patient management options and for educating clinicians.



Anaesthesia Cases was launched in January 2013 as an online library of case reports in anaesthesia, pain management and intensive care medicine. These are case reports that previously would have been considered for publication in *Anaesthesia*. Journals have reduced the number of case reports they publish, or even excluded them altogether. Anaesthesia Cases was created in order to ensure that informative, educational and important case reports continue to be published.

Each case report submission is reviewed by at least two Editorial Board members and the author of an accepted case report will see it published online, usually within a couple of weeks following submission. It will be given a unique digital object identifier (doi) and will soon be listed on PubMed. Exceptional case reports will be considered for publication in *Anaesthesia*.

Here are just a few reasons why you should submit a case report to Anaesthesia Cases:

- It is free to AAGBI members (and non-members can log onto the website free of charge)
- You are much more likely to have your case report published compared with an original research article
- There is a fast turnaround time – from submission to publication takes about two weeks
- No previous research experience is necessary
- It provides an opportunity for the author to develop writing skills, share information and learn from the experience of others
- It encourages improvement in an individual's personal understanding of a topic
- The comments functionality allows you to respond to published case reports and aims to stimulate debate, especially regarding controversial patient management

The types of case reports we publish include descriptions of new regional nerve blocks, novel oxygenation techniques, as well as unusual complications related to common conditions or drugs. Each case report will be considered on its individual merit; all we ask is that it provides an interesting and original learning point. We have already published more than 200 case reports since our launch, a rate of one each week.

Please submit your interesting case report today, or browse our website and comment on case reports that have already been published. The library of case reports and information regarding submissions can be accessed at www.anaesthesiacases.org.

Kariem El-Boghdady, *Trainee Fellow*

Helen Laycock, *Assistant Editor*

Serene Chang, *Assistant Editor*

Craig Bailey, *Editor*

ITEMS OF INTEREST

■ The College of Anaesthetists has secured the lease of premises in Russell Square, London WC1 for its permanent accommodation. The Association of Anaesthetists had previously agreed to assist the College in the financing of its new headquarters, and Council has therefore approved a loan of £500,000 to assist in the purchase of 48-49 Russell Square. Half of this will be interest-free and payable annually after three years. The remainder will also be payable after three years and will be interest-free for two years, but subsequently will bear interest on the balance at current bank base rate. A number of provisions to cover circumstances have been included. Members of the Association may obtain a copy of the memorandum of agreement between the College and the Association from the Honorary Treasurer of the Association.

each Department of Anaesthetics should have an agreed protocol for the management of failed intubation. The exact details of this would depend on local circumstances.

■ The Centre for Health Planning and Management at Keele University has introduced an extended Diploma in Management for doctors at both strategic and operational levels. Details are available from Dr Calum R. Paton, Senior Lecturer, Centre for Health Planning and Management, Science Park, University of Keele, Staffordshire ST5 5SP.

■ The World Federation of Societies of Anaesthesiology (WFSA) maintains a mailing list for recipients of publications of the WFSA and other organisations. The recipients are usually teaching departments in developing countries which find it financially difficult to subscribe to

"The dogs bark but the caravan moves on..."



Anaesthesia for GP Fundholders
The note in the last month's column seems to have had the right effect. A working party on the topic of anaesthesia and surgery for GP Fundholders has been set up by the Association in conjunction with our sister association in surgery and the Royal College of General Practitioners.

College Elections

1994 sees the rare event of an election for a seat on Council of the College in which there is no candidate seeking re-election. Despite enormous pressures the dog will not be seeking this post. He is curious to see what happens as he is certain that had he run as Professor Defer Dog (London) he would have been a shoe in. Those people that organised the write-in campaigns which have been such a significant feature of recent College and Association elections would immediately write to all their pals noting that there was a London candidate and everyone else would have voted for the Professor. Potential candidates (and those seeking re-election) can write to this column for expressions of support and advice on how to look sophisticated and academic (see photo). Address your requests to Professor Defer Dog (London), c/o Woodbine Ave. etc.

No. 54 January 1992

THE NEWSLETTER OF THE ASSOCIATION OF ANAESTHETISTS OF GREAT BRITAIN AND IRELAND

REPORT RECOMMENDS WIDESPREAD EXAMINATION OF ANAESTHETIC PRACTICE

J. N. Horton

A detailed and wide-ranging report has been published by the British Postgraduate Medical Federation on behalf of the Department of Health on patterns of anaesthetic staffing and the effect on the provision of anaesthetic services.¹ One of nine reports covering a wide range of medical specialties, it is based on a large volume of extremely detailed data collected from nine departments of anaesthesia in five health districts in England.

From the start the extreme complexity of the organisation of the departments is apparent. Few common patterns emerge and the service requirements are obviously dictated by geographical factors, the difficulty of the work to be covered, and the availability of staff of the appropriate grades. There are some common findings, though. Sunday preoperative ward visits, often lasting up to two hours, are commonplace, as are evening preoperative ward rounds regularly conducted after the day's theatre work has been completed. Anaesthetists sometimes had to travel to two or more distant hospitals to carry out their preoperative assessments. All this shows that most anaesthetists devote far more time to their clinical work than many of their colleagues in management and in other specialties realise.

Despite the recommendation of the Confidential Enquiry into Perioperative Deaths, it is clear that very junior trainees were, at least in 1987 when the data was collected, carrying out a large proportion of the out-of-hours emergency work. In many cases, the night-time work was necessitated by the unavailability of an emergency theatre during the day.

The Report makes five important recommendations:

■ It is pointed out that 18% of cases were night-time emergencies, usually anaesthetised by senior house officers. To reduce the risks, standards for out-of-hours availability of monitoring equipment and trained recovery staff should be agreed between the profession and the Department of Health. The Association of Anaesthetists has, of course, gone a long way towards this with its recommendations for minimum monitoring.

■ Although the Report found that 80% of inpatients were visited preoperatively by an anaesthetist, day cases were much less likely to be seen. The Report recommends that, in view of the Audit Commission's proposal that the proportion of day-stay surgery should be increased, a study should be made of the value

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On Other Pages

2-4 ■ NHS reforms—the Canadians have done it all before

'AAGBI PRESIDENT'S BLOG'

For those who are happy to get their AAGBI news via Twitter, the official President's Twitter account is @AAGBI_President and the blog is at www.aagbipresidentsblog.wordpress.com. I hope you will follow both.





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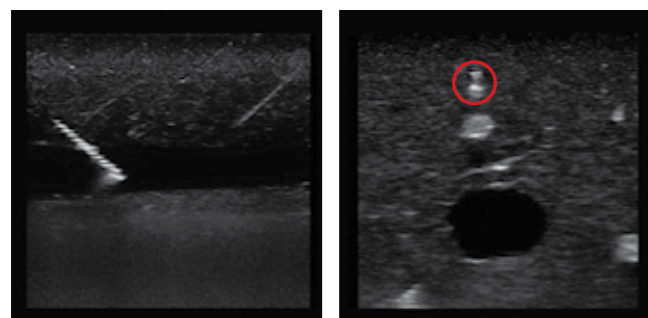
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Datta D, Foley RJ, Wu R, Grady J, Scalise P

Renal function, weaning, and survival in patients with ventilator-dependent respiratory failure

Journal of Intensive Care Medicine 2017. Epub ahead of print 1 January

Introduction

Patients with acute kidney injury have been shown to demonstrate poor weaning from mechanical ventilation [1]. However despite this, research on the relation of kidney function measured as creatinine clearance (CrCl) with weaning off prolonged mechanical ventilation (PMV) has been limited. This study reviewed cases of ICU patients to monitor the association of renal function (CrCl) with success of PMV weaning and patient survival.

Methodology

A total of 167 PMV cases admitted into a long-term acute care centre for weaning were included in retrospective fashion for this study. Cases were from data over a 3-year period and were each on a PMV weaning programme. For all cases, CrCl calculated based on 24-hour urine correction/serum creatinine was obtained. Renal function was classified as normal (CrCl > 90 ml/min), mildly abnormal (CrCl 60–90 ml/min), moderately abnormal (CrCl 30–59 ml/min), and severely abnormal (CrCl < 30 ml/min).

Successful weaning off PMV (off ventilator for > 7 days) was classified as the primary outcome. Secondary outcomes included survival (being alive at discharge), time to wean, and time to discharge alive. Statistical methods including 2-sample t test, χ^2 test, Cochran-Armitage trend test and the Kaplan Meier method were used to analyse the data.

Results

Based on CrCl, 16% had normal renal function (CrCl > 90 ml/min), 28% had mild renal impairment (CrCl 60–90 ml/min), 42.5% had moderate renal impairment (CrCl 30–59 ml/min), and 12.5% had severe renal impairment (CrCl < 30 ml/min). Weaning success was 96% for the CrCl > 90 ml/min group, 64% for CrCl 60–90 ml/min group, 55% for CrCl 30–59 ml/min group and 52% for the CrCl < 30 ml/min group. In regards to survival (being alive at time at discharge), survival rate was 93% in CrCl > 90 ml/min, 60% in CrCl 60–90 ml/min group, 61% in CrCl 30–59 ml/min group and 62% in the CrCl < 30 ml/min group. Time to wean had a median time of 31 days for those with CrCl \leq 90 ml/min compared to 18 days for CrCl > 90 ml/min. Time for discharge alive had a median time of 42 days for those with CrCl \leq 90 ml/min compared to 34 days for CrCl > 90 ml/min.

Discussion

The study demonstrated an apparent association of improved weaning outcome off PMV and survival rates for patients with better renal function as per CrCl. Authors of this paper have claimed that correlations between successful weaning of PMV and CrCl had not been assessed prior to this study.

Conclusion

The paper is relatively specific in its scope, however it does potentially highlight a useful marker to assess a patient's outcome or possible response to management in a critical care setting. Twenty-four hour urine collection (used to calculate CrCl in this study) is not a routine investigation, so feasibility regarding exact replication in wider practice may be debatable. However, it has been postulated by the authors that creatinine clearance can be of benefit as a potential prognostic tool to direct further management of similar cases used to this study, noting further studies would be required to validate their results.

Shawki El-Ghazali

CMT 2, Leicester Royal Infirmary

Reference

1. Vieira JM, Castro J, Curvello-neto A, et al. Effect of acute kidney injury on weaning from mechanical ventilation in critically ill patients. *Critical Care Medicine* 2007; **35**: 184–91.

Kumari S, Agrawal N, Usha G, Talwar V, Gupta P.

Comparison of oral clonidine, oral dexmedetomidine, and oral midazolam for premedication in pediatric patients undergoing elective surgery

Anesthesia, Essays and Researches 2017; **11**: 185–91

Introduction

Peri-operative anxiety can result in challenging management for adults and children alike. Utilisation of premedication, especially in paediatric cases, can help alleviate this issue to promote smooth induction. Oral midazolam is prominently used in the role of premedication of such cases [1]; however, alpha-2 agonists such as clonidine and dexmedetomidine in this role have provided a potential alternatives [2,3]. This study reviewed the efficacy of oral midazolam, clonidine, and dexmedetomidine for premedication in children undergoing surgery. Effectiveness of pre-operative sedation, anxiolysis, parent separation, mask acceptance, and pre-operative haemodynamic parameters were assessed.

Methodology

A prospective, randomised, double-blind study was conducted. A sample of 90 children aged 4–12 years with ASA physical status 1 undergoing ophthalmic surgery was utilised. Patients were randomly split into 3 groups of 30, a group receiving oral midazolam, a group receiving oral dexmedetomidine and a group receiving oral clonidine.

Different aspects including taste/tolerance of medication, degree of sedation and anxiety levels were each assessed using a scale system, with different levels of each category being allocated a score. Scoring systems including a Likert scale and a parental separation anxiety scale were used to assess mask acceptance and parental separation, respectively [3,4]. The clinician who monitored the patient, scored patient's behaviour, and collected the data was blind to the study drug administered.

Primary outcomes were patient numbers showing acceptable separation from parents and satisfactory mask acceptance. Secondary outcomes included sedation onset time, mean sedation score and mean anxiety score.

Results

All cases were deemed to demonstrate satisfactory acceptance/tolerance of premedication based on scoring system used.

Onset of sedation occurred at 15 min from administration for midazolam, compared to 30 min for clonidine and dexmedetomidine. Mean sedation score was additionally deemed more significant with midazolam at 30, 45, and 60 min as compared to clonidine and dexmedetomidine. Mean anxiety score was calculated as being significantly less with midazolam than the other two medications at 60 min.

Acceptable parent separation scores were achieved in 100% of children receiving dexmedetomidine, 90% of those receiving midazolam, and 80% of patients receiving clonidine. All three medications were deemed to be comparable regarding satisfactory mask compliance. No significant side effects were identified relating to all three medications, such as hypotension, bradycardia, respiratory depression, oxygen desaturation, or apnoea.

Discussion

All three medications were deemed safe and effective for premedication via oral administration. Midazolam was identified as having faster and higher sedation scores. It additionally demonstrated lower anxiety scores than the other two medications. In regards to the primary outcome of this study, dexmedetomidine was described as having comparable results regarding parent separation.

Conclusion

I found this study to be relevant and of good scope. The authors covered multiple aspects to review effectiveness of the medications in question from different perspectives. Completion of a randomised double-blind study help to reduce bias, but reliance of a scale system may potentially invite a degree of subjectivity – although I imagine this would be difficult to avoid due to the nature of the study. The report states dexmedetomidine is currently not approved for use in children; however, the authors have noted studies/case reports of its use. The authors recognise that additional studies would be warranted for further evaluation of this medication in children.

Sally El-Ghazali

ST5 Anaesthetics, Royal Marsden

References

1. Feld LH, Negus JB, White PF. Oral midazolam preanesthetic medication in pediatric outpatients. *Anesthesiology* 1990; **73**: 831–4.
2. Wright PM, Carabine UA, McClune S, Orr DA, Moore J. Preanaesthetic medication with clonidine. *British Journal of Anaesthesia* 1990; **65**: 628–32.
3. Mountain BW, Smithson L, Cramolini M, Wyatt TH, Newman M. Dexmedetomidine as a pediatric anesthetic premedication to reduce anxiety and to deter emergence delirium. *AANA Journal* 2011; **79**: 219–24.
4. Dashiff CJ, Weaver M. Development and testing of a scale to measure separation anxiety of parents of adolescents. *Journal of Nursing Measurement* 2008; **16**: 61–80.

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