

# Operating Services Critical Care and Anaesthesia research output for 2016/17

Research continues within OSCCA, with 3 BMedSci students supervised within the department being recognised for their performance at major meetings. Ellen Collingwood won the RCOA President's Prize at the BJA Research Forum/Anaesthetic Research Society April 2017 and Sarah Taylor was runner up. Former OSCCA trainee Ascanio Tridente, presented his work on prognosis in faecal peritonitis at the same meeting as part of a Sepsis Symposium alongside world renowned experts including Prof Charles Hinds, Julian Knight and Mervyn Singer.

Now at the Geneva meeting of the European Society of Anaesthesia, which begins on June 3<sup>rd</sup> 2017, Martin McBride has had his abstract selected by the ESA for Press Release as being newsworthy.

Two major books edited or authored from OSCCA have been released this month: Case Studies in Adult Intensive Care Medicine and the Oxford Textbook of Anaesthesia (see details below).

OSCCA continues to be the UK lead site for several international and national studies including BALANCED, PROTHOR, PROBESE, LUNG SAFAS and SALVO and SHARC continues to support major UK studies such as SNAP-2.

Two former OSCCA researchers who have recently moved to Consultant posts in other centres are about to sit their postgrad research exams In Sheffield: Ascanio Tridente taking his PhD: supervised by GH Mills and C Hinds and Iain Goodhart taking his MPhil supervised by S Radley, GH Mills and Andrzejowski, Good luck to them.

OSCCA continues to punch above its weight in research terms. Thanks go to Angela Pinder for her help in the Research Dept and an advert has gone out for a Research Coordinator, who should help to make life simpler for those leading studies in OSCCA. Any trainees or interested Consultants are welcome to attend the bimonthly research exec meetings.

Gary Mills (Research Lead)

## Ongoing and recently completed portfolio research studies (n = 15):

1. **CENTER TBI: Principle Investigator Stefan Jankowski (previously George Eapen).** Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury. European funded NIHR portfolio study. 70 centres in 20 European countries. Study in Sheffield started APRIL 2015. Publication due to come out in Lancet. **46 recruited in Sheffield so far.**
2. **BALANCED: Principle Investigator for Sheffield Ian Wrench. Professor Gary Mills Chief investigator for the UK.** Comparison of 2 levels of BIS to see if outcome is improved by a less deep anaesthesia in older patients undergoing major surgery. Multicentre study in UK, Australia, NZ, Hong Kong and USA. **20 patients recruited in Sheffield (target number = 20).**
3. **PREVENTT. Principle Investigator Sumayer Sanghera (Consultant Anaesthetist)** Preoperative intravenous iron to treat anaemia in major surgery. A randomised double-blind controlled phase III study to compare the efficacy and safety of intravenous ferric carboxymaltose with placebo in patients with anaemia undergoing major open abdominal surgery. **19 patients recruited (target 20).**

4. **SALVO** – A randomised trial of cell salvage in Obstetrics supported by a £2million plus grant from the HTA. **Matt Wilson and Ian Wrench** (Consultant Anaesthetists) were part of the team who prepared and submitted the grant application. Sheffield was the **second highest recruiter for this study with 277 women recruited**. This trial has now reached the target of 3050 recruits, data analysis has been completed and a paper submitted for publication.

5. **Randomised controlled trial of warming during elective caesarean section** – Bair Hugger/ Inditherm/ Normal care. **Chief Investigator Mel Woolnough** (Consultant Anaesthetist) Funded by £5000 grant from the Obstetric Anaesthetists Association.

All 132 women have been recruited for this study which was finished more quickly due to the efforts of **Ryad Cheboutt** a BmedSci student. Paper submitted and currently in sub-editing phase.

6. **How accurate is the landmark technique to identify spinal anaesthesia insertion level in the lumbar spine for obstetric patients with a BMI >30 using ultrasound to verify the lumbar interspace level? An observational study.** Chief investigator **Fleur Roberts**. An Obstetric Anaesthetists Association funded portfolio study. Thirty out of a target of 100 patients recruited so far.

7. **PROBESE**: UK lead for a study of protective ventilation, plus moderate v high PEEP in overweight patients undergoing major surgery. Pan European Study. **Professor GH Mills**

8. **HIT-AAA** (High Intensity Training in those with an Abdominal Aortic Aneurysm for intervention) has closed; July 2015. **Principle Investigator Karen Kerr (Consultant Anaesthetist)**. Recruitment targets for Sheffield have been exceeded. Two papers are currently in preparation.

9. **The Epidemiology of Acute Kidney Injury in ICU**. Multicentre study – **AJ Raithatha** – local lead. 27 out of a target of 140 patients recruited to April 2017.

10. **GAINS and GENOSEPT**: member of UK management committee of genetic response to sepsis in UK and Europe. Now in analysis phase, with publication of world's largest series of faecal peritonitis patients on critical care. First epidemiology paper published in Intensive Care Medicine. Second paper on time sequence and prediction of outcome accepted by Critical Care. Paper 3 in preparation on outcomes algorithm. **Professor GH Mills**

11. **BREATHE**: Study of NIV as a method of weaning from invasive mechanical ventilation on ICU. 2014-17. Independent Steering Group member. **GH Mills**: recruitment now complete- will be presented at ESICM 2017

12. **LUNG SAFAS**: Evaluation of the microstructure and functional changes in the lung during recovery after major abdominal surgery, using functional hyperpolarized helium and xenon magnetic resonance imaging. **GH Mills, R Lee** In progress : 2 recruited so far

13.. **CPET**: Short and long term analysis of the CPET database. **Karen Kerr**.

14. **PROTHOR**: PROtective ventilation with higher versus lower PEEP during one-lung ventilation for THORacic surgery – PROTHOR: A randomized controlled trial.

**Prof Gary H Mills, Dr Ally Parnell, Dr Alastair Glossop**. Likely to start in the Autumn 2017

15 **AMINO 111**: Richard Bourne Likely to start late 2017.

# Portfolio studies with the trainee led network SHARC (South Yorkshire Hospitals Audit and Research Collaboration)

*SHARC is an open trainee-led network* that has been in existence for about 2 years. Currently the committee consists of Claire Hirst, Becky Morris, Dan Yarwood, Tim Orr, James Briscoe and Mark Prince. It continues to facilitate access to research for interested individuals, irrespective of their experience or seniority. SHARC has run several home-grown regional projects but is also providing access to national and international projects. For details please visit <http://www.sharcgroup.org.uk>

Furthermore, SHARC has been a founding member of RAFT (Research and Audit Federation of Trainees, <http://www.rafrainees.com>), a national umbrella research group facilitating collaboration between regional networks.

**SNAP-2** is a multicentre UK wide study from the National Institute of Academic Anaesthesia looking at patients undergoing surgery requiring an anaesthetic and at least an overnight stay afterwards. The main focus of the study is availability of Critical Care and HDU beds for patients who have had surgery. Another important aspect is the assessment of risk for surgery and clinicians were asked to complete questionnaires about this. This is a long term study and the cohort of patients who were recruited will be followed for the next ten years with respect to time of death. As many of you will remember this study was performed over a seven day period and required a huge amount of effort from trainees (co-ordinated by SHARC), many of whom came in in their own time. In total over 300 patients were recruited into the study and around 200 clinicians completed questionnaires. This is a tremendous result for Sheffield. **Principle Investigator I Wrench.**

## **MACA:**

### **The project:**

This region wide audit was carried out in August 2016 following the recent court ruling in the case of Montgomery v Lanarkshire Health Board. The audit investigated how the consent process across different hospitals in the South Yorkshire region correlates with the AAGBI guidelines. Data was collected from all anaesthetic charts during a specified half day at the six participating sites.

### **The results:**

Findings showed that most anaesthetists consent more often for common but less serious risks for general and neuraxial anaesthesia. However, there are a number of unusual but significant risks that are rarely discussed, despite these potentially being considered material risks about which a reasonable patient might want to know. In light of recent court rulings, many anaesthetists current practice regarding consent falls outside that which would be deemed acceptable if challenged in law.

### **Presentations:**

Rotherham audit meeting (Sept 2016)

Chesterfield audit meeting (November 2016)

YAT conference (October 2016)

## Successful grant applications (n = 3):

**PROBESE Randomized Controlled Trial (UK).** PROtective Ventilation with Higher versus Lower PEEP during General Anesthesia for Surgery in OBESSE Patients –NIAA/AAGBI  
£10,054 **Professor GH Mills**

**LUNG SAFAS:** Evaluation of the microstructure and functional changes in the lung during recovery after major abdominal surgery, using functional hyperpolarized helium and xenon magnetic resonance imaging. £19950 **GH Mills J Wild**

**PROTHOR:** PROtective ventilation with higher versus lower PEEP during one-lung ventilation for THORacic surgery – PROTHOR: A randomized controlled trial.  
£11,725 **Prof Gary H Mills, Dr Ally Parnell, Dr Alastair Glossop.**

## Grant applications in progress (n = 2):

**HTA 16/140/07 Effectiveness and cost-effectiveness of INSPIRatory muscLE training (IMT) for reducing postoperative pulmonary complications (PPC): a sham-controlled randomised controlled trial (RCT) (INSPIRE)** A joint application from Bristol, Southampton and Sheffield for £1,944,581 Applicants: Pufulete, Levett, Rogers, Grocott, Reeves, **Mills**, Creagh-Brown, Jack, Shah, Harris, Culliford, Wordsworth, Hinchliffe, Jepson, Griffiths, Nash, Mapson, Benton, Whyman, Richardson. Submitted June 2017

**AVATaR. ASSESSMENT OF VENTILATORY MANAGEMENT DURING GENERAL ANAESTHESIA FOR ROBOTIC SURGERY AND ITS EFFECTS ON POSTOPERATIVE PULMONARY COMPLICATIONS (AVATaR):** A prospective observational multicentre study **GH Mills, R Lee** submitted April 2017