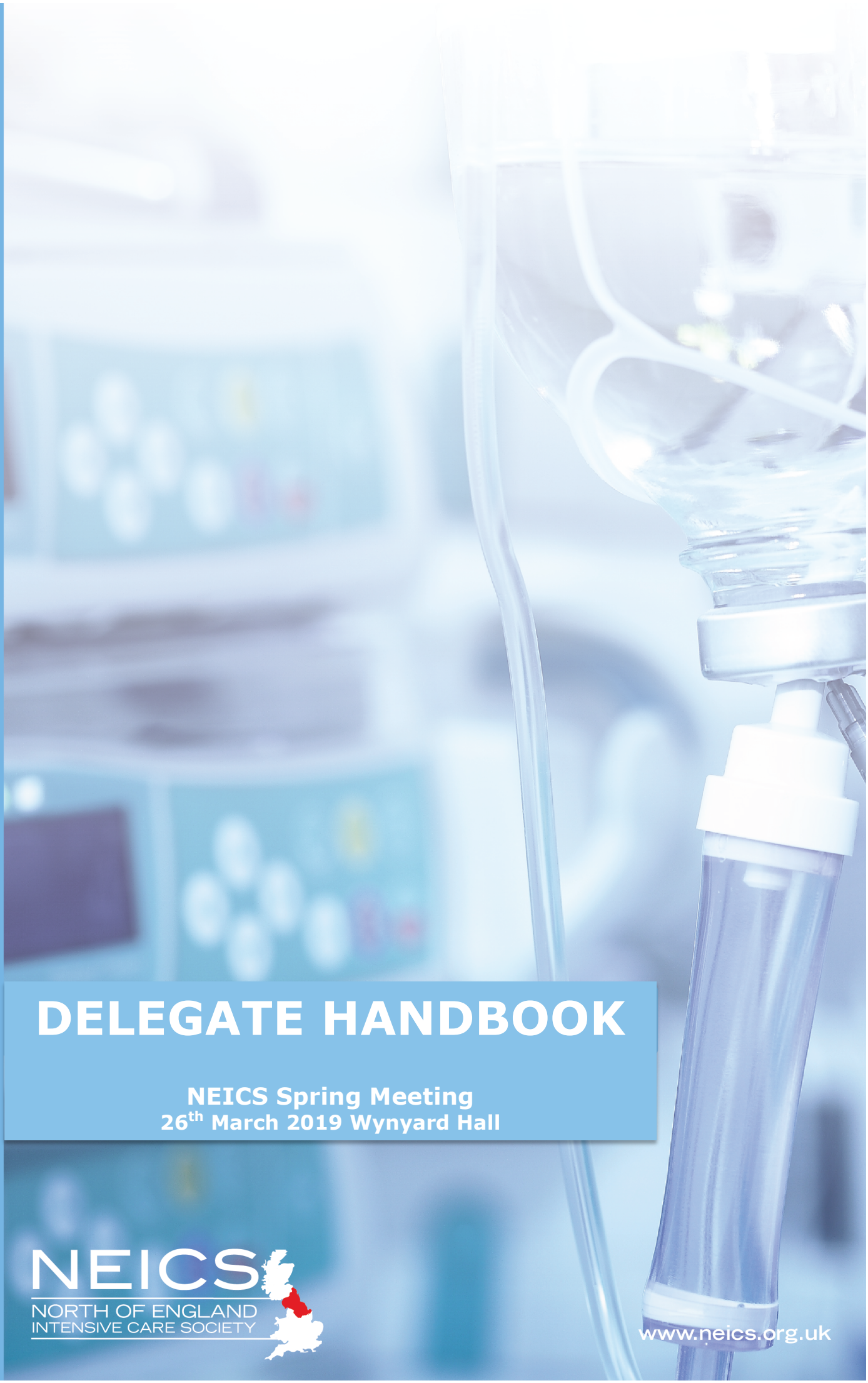
NORTH OF ENGLAND INTENSIVE CARE SOCIETY



DELEGATE HANDBOOK

NEICS Spring Meeting
26th March 2019 Wynyard Hall

NEICS
NORTH OF ENGLAND
INTENSIVE CARE SOCIETY

www.neics.org.uk

Welcome to the North of England Intensive Care Society Spring Meeting

We extend a warm welcome to all delegates joining us for our Spring Meeting at Wynyard Hall. As ever our society remains completely reliant on its members. Your continued support allows us to further develop the society as a platform for furthering high quality clinical practice and research in the North. The Spring and Winter Meetings are now well established events and the recent introduction of a Summer Evening Symposium at Lumley Castle.

This year's programme promises to be one of the most exciting to date. We are privileged to have some of the leading clinicians and academics in critical care sharing their latest work with us. Today we are also proud to exhibit the high caliber quality improvement and research achievements of our trainees and ACCPs here in the North East through the poster presentation competition. We continue to be strongly supported by our industry sponsors. Please take time to visit the trade stands during the breaks.

During the meeting please feel free to tweet us (@NEICS14; #NEICSSM19) and also visit our growing website (www.neics.org). We will be using the app Slido again to help ask questions after the success previous meetings.

We hope you enjoy the meeting.

Spring Meeting Organising Committee:

Suzy O'Neill
Committee Member

Gavin Hardy
Trainee Committee Member

NEICS Spring Meeting 2019
Wynyard Hall
26th March 2019

0830 - 0915	**REGISTRATION** **Tea, Coffee and Trade Stands**	
0915 - 0930	**WELCOME AND INTRODUCTION**	Ballroom
	Session 1	
0930 - 1015	**Alcohol-related liver disease in the ICU: prognostic nihilism or pragmatism?**	Naz Lone
1015 – 1100	**Moral Balance: ethical decision making for anaesthesia and ICU**	Dale Gardiner
1100 - 1110	**Questions & Discussion**	
1110 - 1130	**REFRESHMENTS** **POSTER VIEWING**	Conservatory Mirror Room
	Session 2	
1130 - 1230	**Realistic medicine: a patient's journey**	Meg Kirby
1230 - 1300	**Emergency health care planning: a practical approach**	Andrew Breen
1300 - 1310	**Questions & Discussion**	
1310 - 1415	**LUNCH** **POSTER PRESENTATIONS**	Conservatory Mirror Room
	Session 3	
1415 – 1515	**Resilience in critical care**	Derek Mowbray
1515 – 1615	**Reflections on death and dying**	Kathryn Mannix
1615 – 1630	**Questions & Discussion**	
1630 - 1640	**Poster Prizegiving and Meeting Close**	

Complimentary Drinks in bar

Speaker Biographies & Abstracts

Naz Lone

Nazir Lone is a Senior Clinical Lecturer in Critical Care at the University of Edinburgh. He trained in Respiratory Medicine and Critical Care. His programme of research focuses on the longer term outcomes of patients surviving critical care and improving the quality of care for those who become critically ill. He has a particular research interest in epidemiological methods and using linked 'big' data. He is currently a member of the Scottish Intensive Care Society Audit Group steering group and a Deputy Director of Research for the Intensive Care Foundation.

He will be presenting on:

Alcohol-related liver disease in the ICU: prognostic nihilism or pragmatism?

Dale Gardiner

Dr Gardiner is a Consultant in Adult Intensive Care Medicine at Nottingham University Hospitals NHS Trust, UK.

Through an interest in ethics, the diagnosis of death and deceased organ donation he has been a local hospital Clinical Lead for Organ Donation, regional clinical lead, and was for five years, the UK Deputy National Clinical Lead for Organ Donation. In June 2018 he was appointed as national lead.

Dr Gardiner is chair of the Nottingham University Hospital's Ethics of Clinical Practice Committee, the longest continually running hospital clinical ethics committee in the UK (apparently). He is co-chair of the deceased donation working group for ELPAT (Ethical, Legal and Psychosocial Aspects of organ Transplantation as part of the European Society for Organ Transplantation) and he served for four years as a member of the UK Donation Ethics Committee until its closure in 2016.

Moral Balance: ethical decision making for anaesthesia and ICU

Moral distress is a cause of burnout and can occur when one feels unable to do 'the right thing' or when there is ethical uncertainty. It is therefore of no surprise that moral distress occurs frequently in anaesthesia and ICU.

Making defensible, time-critical ethical decisions is a core competency for critical care clinicians and all doctors who work in acute specialties. While advanced physiology is a core part of the anaesthesia and critical care syllabus – ethics is required to only a basic level!

Yet my job as an intensivist consists of 50% applied ethics and 50% communication; with a bit of nonsense about inotropes and modes of ventilation thrown in at the edges.

Ethics should be seen as science not art. My talk reflects a growing effort in intensive care medicine education and discourse to consider how ethical decision-making can be improved and taught. No, it is not enough to be able to spell 'non-maleficence' to pass.

I, and my colleague Dr Dan Harvey, think Beauchamp and Childress's four principles of medical ethics should be recognised as a skill-based competency. It is deeper and more nuanced than traditionally taught. We suggest 'MORAL Balance' is a useful mnemonic for applying the four principles at the bedside.

I'll demonstrate 'MORAL Balance' and how it can be used to aid medical decision-making in the clinical scenario of an Emergency Department patient with perceived devastating brain injury whose admission to ICU would fill the 'last bed'.

Many clinicians will already be undertaking parts of our proposed approach. I'll suggest that adopting a systematic and explicit analysis of ethical questions will help make better, justifiable and robust medical decisions. This can protect patients and families, as well as staff, and reduce your moral distress.

Bonus - Listening to my talk will also mean you won't have to read our BJA Education article on the topic.

Meg Kirby

Meg Kirby is a solicitor and founder of Legacare, a charity set up in 2011, which provides legal advice for patients with terminal or life-threatening diseases.

She will be discussing:

Realistic medicine: a patient's journey

Andrew Breen

Andrew Breen is a consultant in Anaesthesia and Intensive Care Medicine in Leeds Teaching Hospitals NHS Trust. He will be discussing:

Emergency health care planning: a practical approach

Derek Mowbray

Derek Mowbray is an Organisation Health Psychologist who specialises in the primary prevention of stress at work.

His focus is on creating the working environment that provokes individuals to feel psychologically well, as this is the route to high level performance, and individuals feeling great about themselves.

Derek Mowbray's work involves transforming managers into leaders; introducing the cultural principles of psychological responsibility, sharing responsibility for success and values; and strengthening the resilience of individuals.

The framework for his work is The WellBeing and Performance Agenda.

Dr Mowbray combines his academic work with the practical experience he has gained over his working life, principally as a chief executive or equivalent of several organisations across all sectors, including in the NHS. He is currently a director of MAS, OrganisationHealth, The Resilience Training Company and the National Centre for Applied Psychology, and chairman of The WellBeing and Performance Group.

He is, also, an Independent Technical Expert to the European Commission on psychological wellbeing and performance, having been, in an earlier incarnation, a Technical Expert to the EC on Health. His current work with the EC is assessing major organisational cultural change projects.

The author of 9 Guides on aspects of the Wellbeing and Performance Agenda, he regularly features in journals, and presents at conferences.

A couple of years ago he relinquished his visiting professor roles at two UK Universities to concentrate more on helping his clients (and, of course, to spend more time with his family).

Kathryn Mannix

Kathryn Mannix trained and worked in palliative medicine for 30 years in the North of England, in hospices, patients' homes and in hospital palliative care teams. She trained in Cognitive Behaviour Therapy to satisfy her interest in patients' emotional coping, and established CBT 'First Aid' training for non-mental health practitioners. After waiting her whole career for the public understanding of dying and mortality to become more realistic and less terrifying, she was eventually driven to write a book about dying. 'With the End in Mind' unexpectedly became an award-winning, international best-seller. She's still recovering from her surprise.

Reflections on death and dying

The success of 20th Century medical developments changed death from a well-recognised, accident or acute-illness related, family-centred event at home to a dreaded and ill-understood, oft-postponed medical event, often associated with multi-morbidity, taking place in hospitals or ambulances. Public familiarity with dying was lost, and misunderstanding, myths and unrealistic expectations abound. The lack of public understanding of dying, and sometimes even lack of acknowledgement of human mortality, is a problem common across all areas of medical practice but perhaps comes into sharpest relief when patients 'sick enough to die' are referred for Intensive Care, or whose recovery in ICU does not proceed well.

In thinking about the public understanding of dying, I'll ask us to think about how we can restore the lost wisdom of the death-bed, and what our roles might be in 'narrating the dying' when death is inevitable.

POSTER ABSTRACTS FOR PRESENTATION AT THE NEICS SPRING MEETING 26th MARCH

1. POMS-defined morbidity amongst NELA patients

Browell C
ST7 Anaesthesia, RVI

Background:
Since the advent of the National Emergency Laparotomy Audit (NELA) in 2012, 30-day mortality in England and Wales has fallen from 11.8% to 9.5% in this high-risk group (1). Length of stay (LOS) has also fallen: from 19.2 days to 15.6 days. 53.3% of NELA patient in the North East and North Cumbria are predicted to have a mortality risk of 5% or greater, and 37.2% have a 10% mortality risk or greater. 47.5% of local NELA patients are admitted immediately to critical care post-operatively. (2)

As part of a clinical research study investigating the medium term quality of life and quality of recovery following emergency laparotomy, we have looked more closely at the POMS-defined morbidities that prevent discharge from hospital in the first 10 days after surgery.

POMS data is a simple score made up of nine domains, each with binary scoring, giving a score range from 0 – 9. (3)

Methods:
All patients who met the National Emergency Laparotomy Audit (NELA) inclusion criteria between March and October 2017 were approached to enrol in this observational study. Patients or their advocates were approached during the first 4 post-operative days.

Baseline data was collected on day 5 post-operatively, including Post-Operative Morbidity Scoring (POMS). On day 10 patients completed a second POMS if they remained an inpatient.

Results:
70 patients were recruited. The group followed up were closely matched out NELA patient demographic and outcomes.

59/70 (84.3%) and 35/70 (50%) patients remained in hospital at day 5 and day 10 respectively. POMS data from day 5 and day 10 reveal a high proportion of patients with on-going morbidity. At day 10, 63% score >1 on the POMS score, reflecting a high level of morbidity.

The most common POMS-defined causes of morbidity at day 5 and 10 were infectious (53% and 46% respectively); renal (34% and 34%); and pulmonary (22% and 20%).

Discussion:
This patient group closely matched our NELA population over the last 2 years at the RVI. A group of patients with a high level of input from critical care and outreach teams.

As a representative group, these patients show us; infectious, renal and pulmonary morbidity are most numerous following emergency laparotomy. Morbidity remains high even at day 10 preventing discharge from hospital.

This data may help us locally; focus on specific areas of improvement to prevent both prolonged hospital admission and morbidity.

References:
1.NELA project team. Fourth Patient Report of the National Emergency Laparotomy Audit. *RCOA London* 2018
2.NELA project team. Year5 Quarter4 AHSN Quarterly Report for North East and North Cumbria. *RCOA London*. 2018
Grocott M P W, Browne J P, Van Der Meulen J, Matejowsky C. The 3.Postoperative Morbidity Survey was validated and used to describe morbidity after major surgery. *Journal of Clinical Epidemiology* 2007; 60

Email: cmbrowell@googlemail.com

2. Outcomes for over 80's on ICU.

E Debenham[1], R Lynn[2], J Sturman[3]
[1] ICU Doctor; [2] ACCS Medicine; Clinical Director Cumberland Infirmary ICU

Background:
With an increasingly elderly population and greater expectations of longevity in society we are seeing an increase in ICU admissions for those aged over 80. These patients have poorer outcomes than younger patients. We sought to examine our own elderly population to give us some local statistics to aid communication and help manage expectations of patients and their relatives.

Methods:
Data was collected over a 12 months period using the ICU clinical information system (metavision) and the ward watcher programme. ICNARC score, type of admission, length of stay, organ support and mortality data were recorded.

Results:
Of the 728 patients admitted to ICU in 2016, 126 (17%) were over 80 years old (range 80-97). Mortality and ICNARC score data are presented in table 1 for the over 80's overall, by type of admission, and for younger patients.
Elderly patients have a higher ICU and hospital mortality than younger patients, although results did not reach statistical significance. Mortality rates for emergency admissions (surgery and medicine) were significantly higher than those for elective admissions.
Patients requiring 3-level organ support had a higher mortality earlier in admission, those who required renal replacement therapy had a very poor outcome.

Discussion:
We found higher mortality rates in those aged over 80, particularly in emergency admissions, which is consistent with previously published data[1,2,3]. Mortality after ICU is also high with 12 month figures being ahead of the general population survival curve, indicating any admission ICU category is associated with reduced longevity at least in the short term.
The high mortality rates early in admission of patients requiring 3 level organ support may reflect earlier decision making amongst clinicians because they felt able to make decisions regarding withdrawal within the first few days.
This is purely an observational study reflective of current practice. Further work is required on identifying predictive factors of survival and quality of life of those survivors.

Acknowledgements:
Thank you to the ICU team at Cumberland Infirmary.

References:
1. Bagshaw S, Webb S, Delaney A et al. Very old patients admitted to intensive care in Australia
and New Zealand: a multi-centre cohort analysis. Critical Care 2009; 13(2): R45.
2. Anderson F, Flaatten H, Klepstad P et al. Long-term survival and quality of life after intensive
care for patients 80 year of age or older. Annals of Intensive Care 2015; 5: 13.
3. Roch A, Wiramus S, Pauly V et al. Long-term outcome in medical patients aged 80 or over
following admission to an intensive care unit. Critical Care 2011; 5: R36

Email: ed1394@my.bristol.ac.uk

Table 1:

	No of patients	Average ICNARC score	Average Length of stay (Days)	Died in ICU	Died in Hospital	Died at 12 months
Admissions >80 yrs	126	21	3.3	24%	39%	52%
Elective Surgery (>80)	24	14	2.5	4%	8%	21%
Emergency Surgery (>80)	62	21	3.2	24%	35%	55%
Emergency Medical (>80)	40	25	4.1	35%	57%	65%
Age Less than 80	602	18.5	2.6	19%	25.3%	unavailable

3. Assessing adherence to a neuroimaging protocol at James Cook University Hospital.

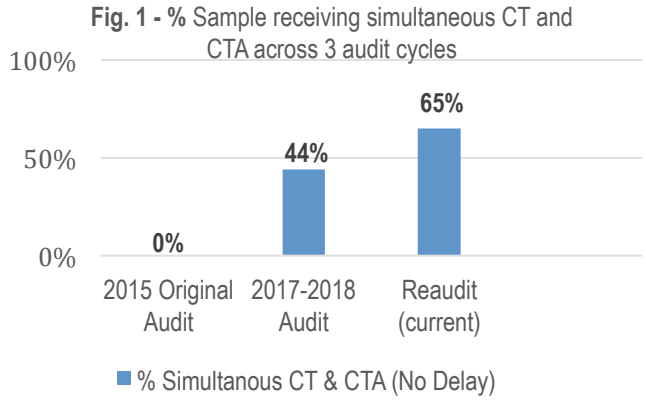
F Dewar[1], U Franke[2], N Marshall[3], S Norman[1]
[1] Medical Student Newcastle University; [2]Consultant Anaesthesia & ICM, James Cook University Hospital;
[3]Foundation Doctor year 2, James Cook University Hospital

Background:
CT angiography helps identify a cause in patients presenting with an unexplained reduction in consciousness. Patients admitted to James Cook Hospital Intensive Care Unit via A&E, requiring intubation and ventilation but with no clear reason for reduced consciousness, should have an initial non-contrast CT head followed immediately by CT angiography 'arch to vertex'. This protocol reduces the requirement for transfer of intubated patients, which carries up to a 45.8% risk of adverse events[1].

We aimed to evaluate adherence to this protocol in the year 2018 with 100% internal target. We compared the results from this analysis cohort to two previous audits with similar aims.

Methods:
The sample group were identified using the Intensive Care National Audit Research Centre database. Patients with clear non-neurological reasons for reduced consciousness were excluded from the sample.
Scans of the analysis cohort were reviewed using IMPAX®. We classed a 'delayed CT' as more than 30 minutes between CT/CTA.

Results:



-100% (n=95) of the analysis cohort received an initial CT.
-36% of the sample (n=34) received CT and CTA.
-Of the above, 7 had an 'arch to vertex' scan and 27 had a 'Circle of Willis' scan.
-65% of CT/CTA pairs were done within the 30-minute target.
-The average time delay between scans was 182 minutes.

Discussion:
CTA use rose across all 3 audit cycles (2015, 2017 and 2018) demonstrating that the simplified protocol is being increasingly followed. However, the Circle of Willis is often imaged in place of the 'arch the vertex'. Distributing evidence based guidance to target groups (radiology staff, especially out of hours) on why 'arch to vertex' is a superior modality may encourage its use.

Time delay between scans improved across the three audit cycles, ameliorating patient safety by reducing the need for secondary transfers.

Limitations were; inclusion/exclusion of patients was subjective, retrospective and reliant upon admission notes. Furthermore, clinical reasoning regarding the cause of decreased GCS was often incomplete.

The results continue to fall short of the internal standard set. Our recommendations for progress include circulating inclusion criteria to improve entry into the protocol and communicate the simplified protocol more proactively to ensure continued positive results.

Acknowledgements:
We would like to thank Dr Franke, Dr Norman and the Critical Care staff for their help during this audit process.

References:
1.Knight, P.H., Maheshwari, N., Hussain, J., et al. (2015) 'Complications during intrahospital transport of critically ill patients: Focus on risk identification and prevention', *International Journal of Critical Illness & injury Science* , 5(4), pp. 256-264.

Email: F.Dewar1@newcastle.ac.uk

4. An audit in the prescription of electrolytes in critical care

J Dinsmore
Foundation Doctor Year 2, Queen Elizabeth Hospital Gateshead

Background:
Patients in critical care units often have electrolyte disturbances, and need intravenous electrolyte replacement[1]. I aimed to audit whether these electrolytes were being prescribed correctly and safely.

Methods:
Data was taken from inpatients' paper kardexes over a one week period in the Critical Care Unit of a district general hospital (Queen Elizabeth Hospital, Gateshead), in November 2018.
I audited whether there were any limits, intervals or target ranges for the prescribed electrolytes, and the prescription was deemed to be 'incorrect' if it did not have any of these. For example, potassium prescribed with a dose of '40-80mmol', but with no time interval or target range specified would be deemed incorrect.
NICE guidance on prescription writing states that these are necessary for all 'as required' prescriptions[2], and so I audited against the standard that 100% of prescriptions should have this information.

Results:
A total of 21 patients were included, with 36 electrolytes being prescribed. The electrolytes were prescribed on the 'as required' section of the kardex, and contained varying amounts of clinical information. The electrolytes prescribed were potassium (12), magnesium (12), phosphate (9) and calcium (3). Of these 36 prescriptions, 78% (N=28) were prescribed correctly, clearly not meeting the standard of 100%.

Discussion:
All of the prescriptions deemed incorrect were because they lacked sufficient clinical information; i.e. there was no target range or minimum dose interval stated. These prescriptions are illegal and unsafe, as it places the responsibility on nursing staff to decide when and what dose to administer.
I recommend that specific paper kardexes should be used, which have commonly prescribed electrolytes pre-printed with adequate clinical information. This would not only save doctors' time; but also improve patient safety, by ensuring that each prescription is legal and correct. The audit should be repeated after this change is made, to complete the audit loop.

Acknowledgements:
Limitations of this audit include the small sample size, and not looking at other documentation eg medical notes. This audit did not consider if the electrolytes were administered incorrectly.

References:
1.Lee JW. Fluid and electrolyte disturbances in critically ill patients. Electrolyte Blood Press. 2010;8(2):72-81.
2.https://bnf.nice.org.uk/guidance/prescription-writing.html

Email: jonathan.dinsmore@nhs.net

5. Injury Severity Score as an Indicator of Outcome in Trauma

J Dye
Foundation Doctor, RVI

Background:
We looked at 586 trauma patients attending The Newcastle Upon Tyne Hospitals over the period April 17th 2017 to April 18th 2018, who had an Injury Severity Score (ISS) of 15 or greater. The ISS is an '*anatomical score that measures the overall severity of patients*' (The Trauma Audit & Research Network, 2005). Data was collected from The Trauma Audit & Research Network (TARN) and used to analyse outcomes of 30 day survival, time spent in level 3 care and Glasgow Outcome Scale, based on ISS to determine any correlation. Additionally, we looked at length of hospital stay based on ISS for those who survived 30 days.

Methods:
We took data originally gathered by TARN on 586 patients with an ISS of 15 or greater who presented to the Newcastle Upon Tyne Hospitals between April 17th 2017 and April 18th 2018. We correlated the ISS with a range of outcomes, predominantly based around level 3 care and survival. In some cases, data was incomplete and hence the patient was discounted from analysis. We plotted graphs using computing software to demonstrate these outcomes.

Results:
We found that 30-day survival decreased with a higher ISS score, and the length of stay in level 3 care was higher also. Glasgow Outcome Scales were poorer with higher ISS though average ISS between those categorised as 'moderate disability' and 'severe disability' was negligible. Only 1 patient was categorised as 'persistent vegetative state' though the average ISS was also similar to other disability categories. We found that average hospital stay also correlated with ISS.

Discussion
We found that higher Injury Severity Scores predicted worse outcomes for both 30 day survival and Glasgow Outcome Scale when correlated, for those with an ISS of 15 or greater. The average ISS between those defined as 'moderate' and 'severe disability' was negligible, potentially as a result of difficulty or uncertainty in differentiating the two definitions, though we did not investigate this. Time spent in level 3 care correlated with higher ISS, also.

Acknowledgements:
The Trauma Audit & Research Network for providing data and Dr Christopher Johnson (Consultant Intensivist) for supervision

References:
1. The Trauma Audit & Research Network. The Injury Severity Score.[Online]2005. https://www.tarn.ac.uk/Content.aspx?c=3117.

Email: jack.dye32@gmail.com

6. An Audit of Consent for Transfusion in Critical Care

E Gray[1], S Bunn[1], N Edgar[1]
[1] Medical Student Newcastle University

Background:
Patients in critical care (CC) commonly receive blood transfusions.[1] It was suspected that not all patients had documented consent in their notes prior to or immediately after transfusion, despite national recommendations (NICE NG 24).[2] To preserve autonomy and avoid litigation patients should give informed consent when possible.

Methods:
- Retrospective notes review by three medical students across two hospitals: Freeman Hospital (FH) and Royal Victoria Infirmary (RVI).
- Data collected between 15/1/19-12/2/19.
- Standard defined by NICE NG24 Patient Information – all patients should be aware of the risks involved and appropriate consent should be given from the patient or family before or immediately after transfusion.[2]
- Recorded:
    - Location of transfusion
    - Presence of valid consent in the notes (given within 12 months)
    - Presence of orange consent sticker in the notes
    - Location of consent process
- Cross reference CC transfusion data against laboratory transfusion records provided by the transfusion staff.
- Data was stored securely in a Trust location and anonymised for processing.

Results:
- 103 patients were admitted to ward 18 (RVI) and 87 to ward 37 (FH) over the audited 4 weeks, a total of 190 patients.
- 85/190 of admitted patients were transfused.
- 56/85 were transfused without an orange consent sticker present in the notes.
- 44/85 were transfused without recorded consent.

Discussion:
- The majority of transfused patients didn't have an orange consent sticker or documented consent for transfusion in their notes (66% and 52% respectively).
- Multiple different consent forms exist depending on where the patient is admitted from.
- Even when present, valid consent is often hard to locate in the notes.

We recommend the following actions:
- Standardise a single transfusion consent form and decide on a formal location for consent to be placed in the notes.
- Consent all patients coming into CC.
- Re-audit using quality improvement methodology to see if implementing changes has an impact on consent documentation.

Acknowledgements:
I would like to thank Samuel Bunn and Naomi Edgar for their help with the audit, and Dr M. Faulds, Dr I. Nesbitt and Dr C. Johnson for their support and guidance.

References:
1. Joint United Kingdom Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee. *Transfusion Handbook.* [online]. Available at: https://www.transfusionguidelines.org/transfusion-handbook [Accessed 12/02/2019]
2. National Institute for Health and Care Excellence. (2015). *Blood Transfusion Patient Information.* [online] Available at: https://www.nice.org.uk/guidance/ng24/chapter/Recommendations#patient-information-2 [Accessed 1/2/2019]

Email: E.Gray1@newcastle.ac.uk

7. Airway assistance in intensive care

C McAdam[1], C Smith[2], T Robb[3]
[1] ST5 Anaesthesia & ICM; [2]Consultant Anaesthesia & ICM; [3]Core Trainee Year 1 Anaesthesia,
James Cook University Hospital

Background:
Out-of-theatre intubations are associated with increased mortality and morbidity [1]. Numerous factors contribute and are cited in recent Difficult Airway Society (DAS) guidance for intubation in the critically ill [2]. One issue is the skill of those assisting the anaesthetist. Often, staff assisting in intubation in the intensive care unit have minimal training. Using baseline surveys and latest DAS guidance [2], we created a course to allow nursing staff to acheive key competencies of airway assistants [3].

Methods:
Nursing staff working in departments where out-of-theatre intubation commonly occurs, were invited to complete a survey exploring their airway skill set. In total, 111 surveys were returned. Responses showed lack of confidence in ability, infrequent participation and little formal training. From this, we devised a 1-day course based on aspects of NHS Scotland's Competencies for Anaesthetic Assistants. We included lectures and practical stations covering topics, including front of neck access, rapid sequence preparation and management of tracheostomy emergencies. Participants completed pre- and post-course questionnaires to evaluate learning.

Results:
Of responders, 86/111 assisted in fewer than five intubations in 3 months. Only 69 of 111 had received formal airway training. However, 13 of 69 felt that courses such as Advanced Life Support and Immediate Life Support courses gave them the skills to assist. Formal training in 51 of 69 was > 2 years ago. Confidence to provide airway assistance showed a mean score of 3.2 (out of 5), with 21 of 111 stating maximal confidence (5/5). Following the pilot 1-day course in April 2018, participants were assessed pre- and post-course. Pre-course objective scores showed a mean score of 2.2 (out of 8) and post-course a mean of 7.5. Subjectively, mean pre-course comfort in assisting with intubation was 3.7 (out of 5). Post-course score was 5. Confidence setting up for a standard rapid sequence induction showed a mean pre-course score of 3.5 (out of 5) increasing to 4.9 post-course.

Discussion:
The most skilled staff assisting the intubation of a critically ill patient should be the gold standard. Up-skilling our nursing staff appears a sensible option to standardise out-of-theatre assistance where expert help may be unavailable. Ideally, NHS England should formulate a set of competencies that airway assistants could work towards. It is clear the pilot increased confidence and knowledge of nursing staff who attended. The next step is to reinforce the skills gained.

Acknowledgements:
We would like to thank our colleagues at JCUH for their help in running the course.

References:
1. Cook TM, Woodall N, Harper J, et al; Fourth National Audit Project. Major complications of airway management in the UK, Part 2: intensive care and emergency departments. *BJA* 2011; **106**: 632–42.
2. Higgs A, McGrath B.A, Goddard C, et al. Guidelines for the management of tracheal intubation in critically ill adults. *BJA* 2018; **120**: 323–52.
3. NHS Scotland. Core Competencies for Anaesthetic Assistants 2011.

Email: colin.mcadam@nhs.net

8. Routine daily blood sampling and testing in critical care- is it really necessary?

S Patterson
Senior Staff Nurse, Integrated Critical Care Unit Sunderland

Background:
It is routine practice in critical care to take daily blood samples from all patients for testing. On the integrated critical care unit (ICCU) at City Hospitals Sunderland Foundation Trust this was dictated by order sets on the computer system rather than being tailored to meet the individual patient's condition. Unnecessary blood sampling has significant implications for our patients. It can interrupt sleep, cause discomfort, increase the risk of infection and contribute to anaemia without improving patient outcome. Furthermore, it comes at a financial cost for the organisation in terms of equipment, time and testing. A prospective audit carried out on ICCU in 2015 indicated that 23% of FBC and 15% U&E were taken with no clinical indication. The Choosing Wisely initiative highlights that practice driven by routine or habit is outdated and wasteful. Clinical tests should be justified and support decision making.

Methods:
- Discontinuation of our blood sampling schedule.
- The multi-disciplinary critical care team to consider and document what blood tests are required for the following day on the afternoon ward round.
- Education of staff on the implications of unnecessary blood sampling.
- Enable staff to adopt patient blood conservation - e.g. if a test is requested throughout the day to consider the use of blood that is stored in the laboratory rather drawing another specimen.
- The number of blood samples (urea and electrolytes, full blood count, coagulation screen, liver function tests and bone panel) was compared over a 12 month period (6 months prior to our intervention and 6 months after).

Results:

	Samples before intervention	Costs before intervention	Samples after intervention	Costs after intervention	Saving
U&E	2318	£3865	1192	£1895	£1790
FBC	2371	£6046	1365	£3480	£2566
Coag screen	1924	£6195	571	£1838	£4357
LFT	2265	£3578**4**	981	£1569	£2009
Bone panel	1609	£2156	1175	£1574	£582
Total	**10487**	**£21660**	**5284**	**£10356**	**£1130**

Our intervention led to a substantial change in blood sampling and testing, with a 49.6% reduction in blood samples taken. The largest single cost saving came from a reduction in coagulation screens.

Discussion
The Realistic Medicine initiative aims to reduce harmful and wasteful care, and ensure that a personalised approach to care is adopted. The reduction in sampling that we observed exceeded our expectations from our initial audit. Challenging conventional practice and introducing a simple, multimodal intervention has had a positive impact on both patient safety and organisational cost.

Acknowledgements:
- Nicola Powley- Medical Student
- Ian Todd - ICCU Co-ordinator, City Hospitals Sunderland Foundation Trust
- Anthony Rostron – Consultant in Intensive Care Medicine, City Hospitals Sunderland Foundation Trust
- Laboratory Staff, Queen Elizabeth Hospital, Gateshead.
- Andrew Berrington - Consultant Microbiologist, City Hospitals Sunderland Foundation Trust
- Mark Carpenter - Consultant in Intensive Care Medicine, City Hospitals Sunderland Foundation Trust
- All Staff on ICCU, City Hospitals Sunderland Foundation Trust.

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Email: Sophie.Patterson@chsft.nhs.uk

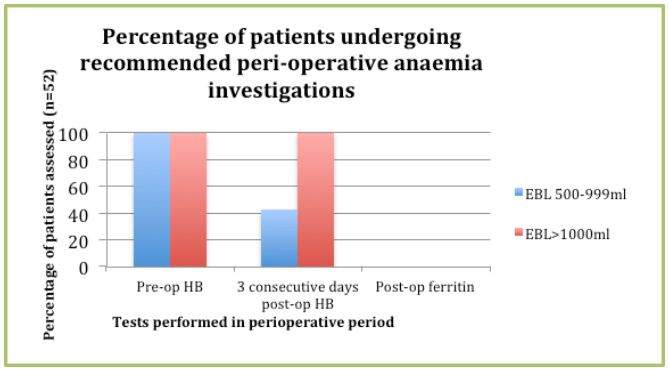
9. Audit of post-operative anaemia investigation in NUTH patients enrolled in the National Emergency Laparotomy Audit (NELA)

L Reid
Medical Student, Newcastle University

Background:
- NUTH is currently taking part in the National Emergency Laparotomy Audit (NELA), with the aim of improving care and outcomes for patients undergoing emergency laparotomies nationwide.
- Post-operative anaemia is a significant issue after emergency laparotomies
- Munoz et al.'s paper on management of postoperative anaemia after major surgical procedures sets out several recommendations for perioperative anaemia investigations, including haemoglobin (Hb) and ferritin.
- Major surgical procedure is defined as estimated blood loss of >500ml, or surgery lasting more than 2 hours

Methods:
- A retrospective audit
- The sample assessed came from the NUTH NELA dataset, and includes all patients from 2014-present who had an estimated blood loss (EBL) > 500ml intra-operatively.
- 52 patients were determined suitable for auditing out of a total database of 1244. Three patients were ruled out due to having incorrect MRNs, which meant their medical records could not be found.
- Patient numbers (MRNs) were taken from the NELA dataset and crosschecked with medical records to determine which blood tests had been run during their hospital stay.

Results:



Discussion:
-Only one recommendation from the Munoz paper- that a preoperative Hb level be taken- was followed with 100% success
-Patients with a heavier blood loss (EBL>1000ml) had the recommended 3 days of postoperative Hb levels; it is possible that this is an association between heavier intraoperative blood loss and increased likelihood of an intensive care stay, where Hb monitoring can be done more frequently.

Acknowledgements:
I would like to thank Chris Johnson and Dave Saunders for their help in completing this project.

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Email: L.A.Reid2@newcastle.ac.uk

10. An audit on bowel management in a tertiary centre critical care unit

A Szuman[1], G Yong[2], H McConnell[3]
[1] Foundation Doctor Year 1; [2]Foundation Doctor Year 2; [3]Consultant Anaesthesia & ICM, RVI

Background:
Bowel management within the intensive care environment is often haphazard. Loose stools and non-defecation are common in critical illness with few having formed stools (1).
Diarrhoea is defined by loose stools of >3 episodes per day (2). In this audit we define constipation as bowels not opening for greater than or equal to 3 days. Diarrhoea and constipation are associated with poorer patient outcomes including increased mortality and length of stay (3)(4).

Methods:
Data was collected over two 6-week periods: 23rd April 2018 to 4th June 2018 and 19th October 2018 to 4th December 2018 at a critical care unit at the Royal Victoria Infirmary, Newcastle Upon Tyne. Data were collected from a sticker on the daily observations chart completed by nursing staff on the previous 24 hours bowel movements. Compliance of the current protocol was also recorded over a 7 day period.
In between the 2 data collection periods the sticker was simplified to aid with compliance with sticker completion.

Results:
Loose stools and constipation were common on the unit. Data were collected for a total of 693 patient bed days. 23% of days were spent with loose stools. 30% of days were spent with constipation. 4.5% of days were spent with a bowel management system in place and 6.2% of days were spent with no bowel movements for ≥ 6 days.
50% of patients were not started on any aperients on admission despite current protocol advising prescription of senna on admission. Under half of patients had a rectal exam done at an appropriate time as described in the current protocol.

Discussion:
There is suboptimal bowel care within the unit reflected by the high rates of loose stools and constipation, and poor compliance with the current bowel management protocol. Moving forward, we aim to reduce the rates of loose stools and constipation by the introduction of a refined bowel management protocol (5). The refined protocol aims to be easy to follow and widely accessible. We aim to re-audit after the introduction and education surrounding the new protocol. Our new bowel management protocol aims to decrease the rates of loose stools and constipation and, therefore, improve patient outcomes.

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Email: amyszuman@gmail.com

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M: 07525 100362
Email: DBrown@hamilton-medical.com

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D: 0118 9656 461
Email: kma@intersurgical.co.uk

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