Introduction to Critical Care

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WELCOME

A brief overview to allow you to survive the first 2 weeks in Critical Care
JCUH critical care

- 16 ICU beds
- 16 HDU beds
- Approximately 720 ICU admissions and 1400 HDU admissions per year
- High occupancy rates >90%
- ICU mortality rate 20%
- HDU mortality rates <10%
Clinical cover

- ICU 2
- ICU 3
- General HDU
- Spinal high dependency unit
- Cardiac arrest calls
- Emergency calls from any area within JCUH
- Trauma calls as part of MTC
General HDU

- 17 beds with 5 side rooms
- Provision of invasive/non-invasive respiratory support, cardiovascular and intermittent haemodialysis
- Since April 2019, aim to use beds flexibly as L2/L3
- Scheduled increase in medical staffing overnight to facilitate this
General HDU

- 16 beds
- Provision of non-invasive respiratory support, cardiovascular and intermittent haemodialysis
- 1 assessment bed
- 24 hour medical cover
Nursing staff

- One nurse per patient on ICU
- One nurse per 2 patients on HDU
- Nurse in charge often has a patient
- Usually one HCA per unit
- Ward manager on each unit
- Matron – Lesley Taylor
- Nurse Consultant – Lindsay Garcia
- Service manager – Gemma Swann
ACCPs

- 4 qualified advanced critical care practitioners
- 2 more in training since March
- Many overlaps with medical role
- All have completed non-medical prescribing, clinical skills courses, can authorise blood administration and order CXRs
- Joined the junior medical rota in April 2012
- Team approach is essential
Additional staff

- Clinical nurse educators X3
- Systems analyst / clinical audit manager
- Organ donation specialist nurse x2
Secretarial staff

- Office manager - Anne
- Secretary – Jade, Clare
- Ward clerks – Lisa, Ali, Sam, Joanne and Julie
- Receptionists – Chris and Linsey
- Office hours are 08:00 – 16:00
Medical staff

- 20 full time NHS consultants
- 3 part-time army consultants
- 2 NCCG
- 2-4 advanced trainees in ICM
- 2-4 Anaesthetic ST trainees
- 2 CMT
- 2 ACCS
- 4 FY2
- 2-4 trust appointments
- Rotating FY1s
- 4 ACCPs and 2 in training
Day time medical staff

- One consultant per unit
- At least one middle grade per ICU
- One “resident” per unit working 12.5 hour shifts
Night time cover

- Duty intensivist
- Middle grade ICM bleep 1005
- 3rd call anaesthetist (senior StR) bleep 4598
- One resident per ICU and HDU
- Also take calls from Spinal HDU
Weekend cover

- 3 consultants
- 2 middle grades
- 1 resident per unit
- 2 residents on GHDO
Essential contact numbers

- ICU consultant via switch or on personal mobile
- ICU middle grade doctor bleep 1005
- ICU registrar mobile 07741616396
- HDU registrar mobile 07741616406
- Airway emergency bleep 2323
- Anaesthetic 3rd call bleep 4598
- Critical care outreach bleep 7000
- Critical care bed coordinator 07741616668
Critical Care Outreach

- 24/7 service on JCUH site
- Provide day time cover in FHN
- NEWS 2 system in use
- Vital-PAC system used on the wards
- Also involved in rehabilitation after critical illness and CC follow-up
Critical Care Outreach
Cardiac arrests

- ICU team is part of the primary response in all sectors
- Your responsibility is airway management
- You are assisted by a senior nurse who is ALS trained
- This is the responsibility of the ICU 3 resident
Cardiac arrests

• YOU MUST COMPLETE THE AUDIT FORM AT THE END OF THE ARREST
Cardiac Arrest Audit Forms

Please Place Completed forms in the Envelope Provided

COMPLETED CARDIAC ARREST FORMS

(Please ensure all white copies are filed in the patient's medical notes)

Arrest forms need to be completed for all 2222 calls.
Please ensure:

- The white copy must be placed in the patient's notes. This is the only documentation to see the arrest team responded and action taken (even if no action required).
- The pink copy is placed in the arrest folder in the ICU lab for return to the resuscitation department.
- Yellow copy is for the physicians' portfolio and personal development record (no patient identifiable data included on this form).
Your 5 moments for HAND HYGIENE

1. Before patient contact
2. Before aseptic task
3. After body fluid exposure risk
4. After patient contact
5. After contact with patient surroundings
Control of infection

- Bare below the elbows
- No wrist watches
- A clean apron must be worn in the bed area
- Disposable gloves must be worn if you are touching patients
- Please wash your hands when you leave the bed area and apply gel
- Please ensure that you dispose of all sharps after procedures
STOP Please speak to the nurse in charge before entering this room or bed area.

Personal Protective Equipment (PPE) required in this bed area:

- Red apron
- Blue gowns
- N95 masks
- Standard mask
- VIZOR
- Others

Additional information for visitors to wear:
- Apron
- Yellow
- Terminal

Contact IPC on Ext. 54900 for further information.

Please ensure appropriate care plans are completed. Thank you.
CVC insertion

- Ensure that there is an acceptable CVP trace
- Please check a venous gas and record the result
- Order a CXR and comment on the line position in the notes
- Complete the CVC pathway
- Daily surveillance of skin entry site required
Microbiology

- 3 x weekly consultant ward rounds
- Please document the name of the consultant and the advice given
- Make sure that prescribed antimicrobials have the indication for use documented on the drug chart
- Consult the unit guidelines for advice about empirical antibiotics
SEPSIS
Empirical Antimicrobial Guidelines
Guidance for adult patients with normal renal function

BEFORE YOU PRESCRIBE
Check previous samples for antimicrobial resistance AND take new diagnostic samples

These guidelines should be used in preference to the antimicrobial guidelines currently available on the intranet

Meningitis
First line: Ceftriaxone 2g iv bd
AND Desmopressine 10mg iv qds
Start with first dose or shortly before:
→ ADD Amoxicillin 2g iv 4 hourly if >60 years or immunosuppressed
Non-severe penicillin allergy:
Ceftriaxone 2g iv bd
AND Desmopressine 10mg iv qds
Start with first dose or shortly before:
→ ADD Co-trimoxazole 120mg/kg iv per day (use BW) in 3-4 divided doses if >60 years or immunosuppressed
Severe type I penicillin allergy:
Cell microbiology or infectious diseases for advice
Encephalitis
Aciclovir 10mg/kg (use BW) iv tds

GASTROINTESTINAL
Intra-abdominal infection and SEPSIS
First line: Piperacillin-tazobactam 4.5g iv tds
AND Gentamicin 5mg/kg BW iv STAT
If Creatinine Clearance >30 ml/min:
Amoxicillin 1g iv tds
AND Foscarnet 1q iv od for CrCl <30
AND *Metronidazole 500mg iv tds
Penicillin allergy:
Teicoplanin 10mg/kg iv bd 3 doses then od
AND *Ciprofloxacin 400mg iv bd and
AND *Metronidazole 500mg iv tds
C. difficile infection
First line: Vancomycin 125mg po qds 10 days
If no oral route: Metronidazole 500mg iv tds

SKIN AND SOFT TISSUE INFECTION
Cellulitis or non-GU/non-GU wound infection
First line: Fluoloxacin 2g iv ads
If recent IVDU: ADD Clindamycin 900mg iv qds
Penicillin allergy or previous MRSA:
Teicoplanin 10mg/kg iv bd for 3 doses then od
Post op GU/GU wound infection
First line: Piperacillin-tazobactam 4.5g iv tds
If previous MRSA:
ADD Teicoplanin 10mg/kg iv bd 3 doses then od
AND *Ciprofloxacin 400mg iv bd
AND *Metronidazole 500mg iv tds
Necrotizing fasciitis
Refer all patients for urgent surgical intervention
First line: Meropenem 1g iv tds
First line: Ceftriaxone 2g iv ad
AND Clindamycin 1.2g iv qds
Severe type I penicillin allergy:
Refer to infectious disease for advice

COMMUNITY-ACQUIRED PNEUMONIA
CURB 3 or CURB <3 and triggering for sepsis
First line: Co-amoxiclav 1.2g iv tds
AND Clarithromycin 500mg iv bd
Penicillin allergy: Levofloxacin 500mg iv bd

HOSPITAL-ACQUIRED PNEUMONIA
First line: Co-amoxiclav 1.2g iv tds
Recent Pseudomonas sp. or acinetobacter resistant organism in sputum culture:
Piperacillin-tazobactam 4.5g iv tds
(or agent tailored to sputum culture results)
Penicillin allergy (+ / - Pseudomonas sp.):
*Ciprofloxacin 400mg iv bd
If recent MRSA:
ADD Teicoplanin 10mg/kg iv bd 3 doses then od

URINARY TRACT INFECTION WITH SEPSIS
First line: Piperacillin-tazobactam 4.5g iv tds
AND Gentamicin 5mg/kg BW iv STAT
If Creatinine Clearance <30 ml/min:
Teicoplanin 1g iv od (CrCl <30)
AND Teicoplanin 10mg/kg iv bd 3 doses then od
Penicillin allergy: *Ciprofloxacin 400mg iv bd

BONE AND JOINT INFECTIONS
Native joint septic arthritis
First line: Fluoloxacin 2g iv ads
Non-severe penicillin allergy OR Gram negative in culture: Ceftriaxone 2g iv od
Severe type I penicillin allergy OR history of MRSA:
Teicoplanin 10mg/kg iv bd 3 doses then od
Diabetic foot infection and sepsis
First line: Piperacillin-tazobactam 4.5g iv tds
Recent MRSA:
ADD Teicoplanin 10mg/kg iv bd 3 doses then od
Penicillin allergy:
Cell microbiology or infectious diseases for advice

*These agents have excellent bioavailability; oral switch is recommended once patient is haemodynamically stable
¥ Please note: Gentamicin mg/Kg BW (Ideal Body Weight calculated dose)

South Tees Hospital
NHS Foundation Trust
ANTIBIOTIC WORKING GROUP
MRSA screening and eradication therapy in critical care

**Screening on admission**

All patients admitted to a critical care area should have an MRSA screen sent on admission. This consists of:
- Nasal and groin swabs
- Urine sample if catheterised
- Sputum sample if intubated or if the patient has a productive cough

**Exclusion:**
If a patient transferred between units is currently on a course of eradication therapy new screening does not need to be sent.

There is no requirement to rescreen long term critical care patients unless clinically indicated.

**Universal Decolonisation**

All patients admitted to critical care should be prescribed:
- **Octenidine body wash once daily for 5 days**
- **Bactroban nasal preparation 3 times daily for 5 days**

Please ensure all eradication therapy is signed for when administered.

If a patient screens **negative** for MRSA, please complete a full 5 day course of eradication therapy.

If a patient screens **positive** for MRSA, please refer to current MRSA positive treatment pathway

**On discharge**

**To another critical care area**

If a patient transferred between units and is currently receiving a 5 day course of eradication therapy, this should be completed. If the course has been completed, please rescreen and eradicate for a further 5 days.

**To the ward**

If full 5 day course of eradication therapy has not been completed, the discharging doctor should continue this on the ward drug kardex until course completed.
NG tube insertion

- Check pH of aspirate
- If no aspirate or pH >5.5 order a CXR
- Please document procedure and radiological findings on the appropriate sticker
- If in doubt, please ask a senior
- If there is a change in position or problem feeding, please reassess position
Equipment training

- Included in in-house teaching programme
- Frequent multi-disciplinary teaching sessions on non-invasive ventilators, dialysis machines
- If you need training a particular piece of equipment, please make this known to your ES
- Clinical educator will help to identify teaching sessions available
Ultrasound machines

- Always clean ultrasound machine after use.
- Do not use without a probe cover
- If you use a machine outside critical care, please ensure that you return it to the department
IPC issues

- Ongoing vigilance regarding cases of MDR Pseudomonas
- Please make sure you apply gel after washing your hands
- Microbiology team may advise on use of temocillin and amoxicillin as a substitute for Piperacillin - tazobactam
Patient privacy

- Please close the curtains whilst examining patients.
- You are encouraged to use a chaperone during patient examination.
- If the curtains are closed, please do not enter the bed area unless specifically requested to do so.
Death certification
ME /coroner

- Please do not issue a death certificate without discussion with an ICU consultant.
- Please make sure you make an appointment with the ME as soon as possible after the death of a patient.
- Once the cause of death has been agreed, please make sure you complete the cause of death proforma and file in the notes.
- If there is discussion with the Coroner’s office, please document the outcome of conversation recorded in the case notes.
Reasons to refer to the coroner

• The cause of death is unknown
• The death may have been caused by violence, trauma or physical injury
• The death may have been caused by poisoning
• The death may be a result of intentional self-harm
• The death may be a result of neglect or failure of care
• The death may be related to a medical procedure or treatment
• The death may be due to an injury or disease received in the course of employment
• Other unnatural causes of death
• The death occurred whilst the deceased was in custody or state detention
• The death involves any suspicion of criminal activity
South Tees Medical Examiner Service
Process for Death Certification and Referral to Coroner

Office hours 08:00 to 16:00 Monday to Friday
Telephone extension ICU 56384/56385 in FHN, the ME can be contacted directly by switchboard

Medical practitioner verifies death and discusses cause of death with consultant
Faxed referral to Bereavement Office by ward clerk
Please include certifying doctor’s contact details

Urgent body release required

YES
See flow chart for urgent release

NO

Certifying doctor meets with ME and discusses cause of death
Health care records must be available
Does the case need to be referred to the Coroner?

NO

Agreement on Cause of Death reached

YES

MCCD issued

Concerns raised or further advice required

NO

Certifying doctor completes the first part of the cremation form and passes notes to ME

Medical examiner

- Reviews health care records
- Agrees cause of death
- Speaks with relatives
- Examines the deceased
- Completes part 2 of the cremation form
- Completes first level mortality review
- Decides if detailed mortality review required

Registration of death

Referral made to the Coroner by certifying doctor

Medical examiner disagrees with cause of death. MCCD reissued by certifying doctor
South Tees Medical Examiner Service

Need for urgent body release identified during normal office hours

YES

Follow usual reporting procedure but ensure that the Bereavement team, ME and the Coroner are aware of the urgency.

IF A CORONER'S INVESTIGATION IS REQUIRED, URGENT RELEASE CANNOT BE APPROVED.

NO

CONTACT on call ME in the following circumstances:
1. Urgent release for organ donation purposes
2. Urgent release for cultural reasons before 9pm

If urgent body release is requested for cultural reasons after 9pm - WAIT UNTIL THE NEXT DAY to discuss with bereavement team, ME and Coroner.

IF A CORONER'S INVESTIGATION IS REQUIRED, URGENT RELEASE CANNOT BE APPROVED.
Handovers

- Marked room for improvement
- Use a simple ABCDE approach
- You must know the patients on the unit you are covering
- It is unacceptable to declare no input
- Ward watcher, the active bed register, is useful to guide handover
- Please dispose of any paperwork at the end of your shift
Major trauma handover

- email before 07.30 with the pertinent details of the case to allow ortho / ED teams to review images and plan management in the meeting in ward 33 seminar room
- The trauma team will then attend ICU at the end of the meeting around 09:00
- stees.majortrauma.team@nhs.net
- Mr XYZ, ICU 3 bed X
- D1234567 28 yo male, RTA
- Open # tib fib : operative plan and timing?
- Liver lac - conservative mx (need to check any restrictions in rolling etc?)
- Complex facial fractures: op plan and timing?
- Any ICU issues e.g CVS instability, sepsis, ARDS
Data Protection

- Handover sheets should not leave the unit
- We advise that handover sheets should not be printed
- Please shred any lists or patient identifiable material at the end of your shift
- No patient identifiable material should leave the hospital
- Do not include any patient identifiable material in your portfolio
Rota

- The rota maker is Janet Pugh for residents and Alaa Dakak for middle grades
- Please contact them early if you require leave of any description
- If you require leave of absence at short notice, please contact any of the consultant team on duty
Food and drinks

 £5 per month to be paid to the secretarial team
 Please help to keep the coffee room clean and tidy
 Canteen, coffee shop and M+S in the main hospital
 No canteen service for evening meal
 After 10pm no facilities other than the trolley service (or local takeaway restaurants)
Scrub suits

- Are available if you wish to wear them
- Cost £10 per scrub suit
- Non-refundable...you keep the scrubs
- Please leave a cheque/cash with Anne or Clare
- Please do not enter or leave the hospital in scrub suits
Sleep and wellbeing

• If you are too tired to drive after a shift, make sure you rest
• Consider accommodation on site during longer stretches of clinical duty
• Take your meal breaks
• Make sure you have had your flu vaccination
• Look after yourself!
Teaching in ICU

- Every Wednesday in the ICU seminar room 13:30 – 15:30 for residents
- Please be ready for a prompt start
- You are paid to attend
- Attendance is mandatory if you are rostered for teaching
- Separate middle grade teaching programme also available
- Simulation training also available
- Trainee feedback is encouraged – please highlight any concerns you have early
Additional Meetings

- **Weekly M+M**
  - Tuesday, Wednesday or Thursday @ 1pm in ICU seminar room
  - You are expected to present at least 2 cases

- **Radiology meeting**
  - Every Monday 1pm HDU seminar room

- **Journal club**
  - Wednesday 08:00 ICU seminar room monthly
  - Please sign up!

- **Feedback is available**
Other educational resources

- Intranet
  - Website https://www.ccs-sth.org
  - Access to library services
  - Map of Medicine
  - Medusa
- ICU evidence based guidelines
- Handbook of knowledge
- Books in the unit
- LRI library
Educational supervision

- You should make an appointment with your supervisor in the first 2 weeks of your placement
- Think about areas you need to improve and projects you may like to explore
- Discuss and agree an educational contract
- Subsequent meetings are your responsibility to arrange
- Your paperwork is your responsibility
Post graduate education meetings

- Every Thursday 13:00 to 14:00
- Lunch available from 12:30
- Varied topics
- Liaise with your base specialty to continue education during your ICU stay
JCUH Courses

- Many taught by the ICU team
- IMPACT, AIM, CCORC, ALS, ATLS, APLS, T4T, Survive Sepsis
- Regional ICM teaching
- NEICS
- Ask your clinical supervisor for advice or details
When you are sick...

- Please contact the ICU office as soon as you know that you are too ill to work
- You also need to inform the person who holds your sickness record card
- Sick notes are required for periods of absence of > 7 days
- THIS IS PART OF YOUR CONTRACT
- Expect a return to work interview with your ES
Bullying

- We operate a zero tolerance policy
- If you are subject to bullying, please speak to a consultant as a matter of urgency
- It will be dealt with confidentially
If you are struggling...

- Let someone senior know
- Seek advice from your GP
- Further advice available from.....
  - Educational/clinical supervisors
  - Faculty/college tutors
  - Programme directors
  - HENE Human resources
  - House concern (0191) 2300043
Top Tips in ICU

- If in doubt, ask
- If you don’t understand, ask again
- Wash your hands between patients
- Look after your colleagues
- Remember to work as a team
- Welcome visiting teams to the unit
- Enjoy your time and learn lots!
You should never feel...

- Unsupported
- Disrespected
- Undervalued
- Ignored
- Isolated
It is your responsibility to...

- Maintain high standards of care
- Seek senior support in a timely manner
- Develop as a professional
- Become a reliable, effective team member
Thank you for your attention