Documentation and streamlining the admission process in the COVID-19 age

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Context – why are we innovating?

The COVID-19 pandemic has introduced unprecedented demand on NHS services and has required significant internal adaptation to ensure patient safety and clinical effectiveness. Our team on critical care identified the ICU admissions process as a key bottleneck for operational efficiency when admission rates were rapidly rising.

Problem – What is the matter?

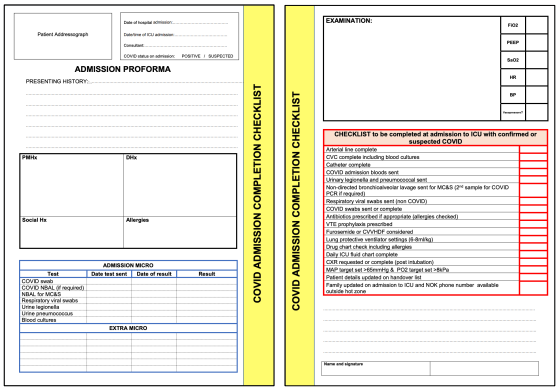
What: Critical care operational efficiency

Why: COVID has changed the pressures on ICU processes

- ICU footprint is now split into risk stratified areas
  - Teams are allocated (including consultant) to each area
- ICU SpRs now attend 2222 calls as designated airway support

Problem: Rapidly changing ICU environment during COVID-19

- Rapid use of resources requiring restocking and rechecking
- High frequency of admissions
- Changes in key information for COVID and non-COVID
- Restricted movement of equipment between areas



ADMISSION PROFORMA

PRESENTING HISTORY:

PMHx | DHx | Social Hx | Allergies

ADMISSION MICRO

Test	Date test sent	Date of result	Result
COVID swab			
COVID NBAL (if required)			
NBAL for MC&S			
Respiratory viral swabs			
Urine legionella			
Urine pneumococcus			
Blood cultures			

EXTRA MICRO

COVID ADMISSION COMPLETION CHECKLIST

EXAMINATION:

FiO2 | PEEP | SvO2 | HR | BP | Temperature

CHECKLIST to be completed at admission to ICU with confirmed or suspected COVID

- Arterial line complete
- CVC complete including blood cultures
- Catheter complete
- COVID admission bloods sent
- Urinary legionella and pneumococcal sent
- Non-directed bronchoalveolar lavage sent for MC&S (2nd sample for COVID PCR if required)
- Respiratory viral swabs sent (non COVID)
- COVID swabs sent or complete
- Antibiotics prescribed if appropriate (allergies checked)
- VTE prophylaxis prescribed
- Furosemide or CVVHDF considered
- Lung protective ventilator settings (6-8ml/kg)
- Drug chart check including allergies
- Daily ICU fluid chart complete
- CXR requested or complete (post intubation)
- MAP target set >65mmHg & PO2 target set >8kPa
- Patient details updated on handover list
- Family updated on admission to ICU and NOK phone number available outside hot zone

Name and signature

A. Streamlined COVID admission clerking and admission checklist

Aims – what are we trying to achieve?

Our primary aim was to streamline the admissions process in order to allow all documentation, admission investigations and clerking to be completed safely and efficiently as possible and allow consultant review with all available information present.

Drivers – who has buy-in?

Our primary drivers for the perceived bottleneck were identified including; rapidly changing recommended investigations on admission, detailed current admission clerking documentation, lack of awareness of available admission spaces and unclear identification of novel roles.

We also identified that COVID was a rapidly changing time creating concerns over a number of features of daily clinical life amongst trainees and our checklist ensured positives, wishlists and improvement points were collected and documented.

Methods – how did we do it?

We introduced and summarised multiple change ideas into a handover checklist including role and bleep/phone allocation, identification of next available bedspaces, awareness of emergency drug and equipment restocking, consultant area allocation, and other operational definitions (B). We also created a streamlined COVID admission proforma including all required admission investigations and their results (A).

Measurement – How will we know our change has shown an improvement?

What did you learn?

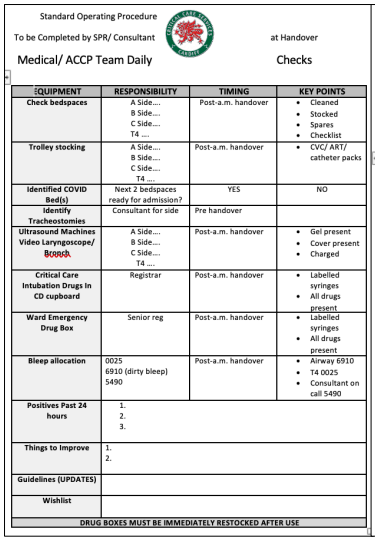
- Identification of prepared bedspaces was vital in times of high admission frequency
- Importance of positive and improvement/wishlist points

What have you done since?

- Rationalise the original "COVID"-centric checklist (C).

What do you plan to do next?

- Formalise and audit the checklist's use



Standard Operating Procedure

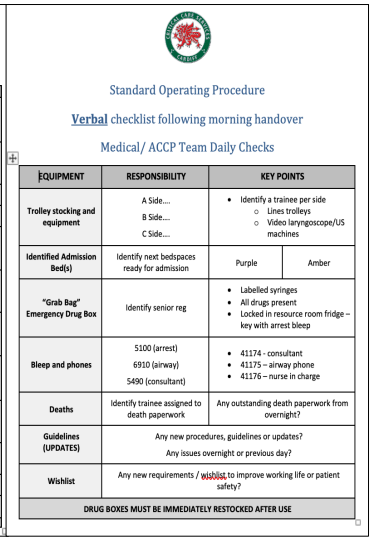
To be Completed by SPR/ Consultant at Handover

Medical/ ACCP Team Daily Checks

EQUIPMENT	RESPONSIBILITY	TIMING	KEY POINTS
Check bedspaces	A Side.... B Side.... C Side.... T4	Post-a.m. handover	• Cleaned • Stocked • Spares • Checklist
Trolley stocking	A Side.... B Side.... C Side.... T4	Post-a.m. handover	• CVC/ ART/ catheter packs
Identified COVID Bed(s)	Next 2 bedspaces ready for admission?	YES	NO
Identify Tracheostomies	Consultant for side	Pre handover	
Ultrasound Machines Video Laryngoscope/ Bronch	A Side.... B Side.... C Side.... T4	Post-a.m. handover	• Gel present • Cover present • Charged
Critical Care Intubation Drugs In CD cupboard	Registrar	Post-a.m. handover	• Labelled syringes • All drugs present
Ward Emergency Drug Box	Senior reg	Post-a.m. handover	• Labelled syringes • All drugs present
Bleep allocation	0025 6910 (dirty bleep) 5490	Post-a.m. handover	• Airway 6910 • T4 0025 • Consultant on call 5490
Positives Past 24 hours	1. 2. 3.		
Things to Improve	1. 2.		
Guidelines (UPDATES)			
Wishlist			

DRUG BOXES MUST BE IMMEDIATELY RESTOCKED AFTER USE

B. COVID daily handover checklist



Standard Operating Procedure

Verbal checklist following morning handover

Medical/ ACCP Team Daily Checks

EQUIPMENT	RESPONSIBILITY	KEY POINTS
Trolley stocking and equipment	A Side.... B Side.... C Side....	• Identify a trainee per side ○ Lines trolleys ○ Video laryngoscope/US machines
Identified Admission Bed(s)	Identify next bedspaces ready for admission	Purple / Amber
"Grab Bag" Emergency Drug Box	Identify senior reg	• Labelled syringes • All drugs present • Locked in resource room fridge – key with arrest bleep
Bleep and phones	5100 (arrest) 6910 (airway) 5490 (consultant)	• 41174 - consultant • 41175 – airway phone • 41176 – nurse in charge
Deaths	Identify trainee assigned to death paperwork	Any outstanding death paperwork from overnight?
Guidelines (UPDATES)	Any new procedures, guidelines or updates? Any issues overnight or previous day?	
Wishlist	Any new requirements / wishlist to improve working life or patient safety?	

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C. Streamlined handover checklist

Take home message

The COVID-19 pandemic stimulated a dynamic, agile, clinician-led innovation process with repeated, rapid informal feedback across a unified team of junior doctors, consultant and senior nursing staff to guide our PDSA cycles. Our innovations improved the operational efficiency of daily life on critical care and this provides a model for future use on the unit to sustain change going forwards.

Strengths	Weaknesses
1. Improved safety 2. Improved admissions efficiency 3. Protocolised safety tasks to reduce omission of key points 4. Documented trainee wishlist 5. Guideline updates	1. Requires team buy-in for continuity 2. Additional job creation
Ongoing work	**Threats**
1. Further refinements as the environment changes 2. Encouraged sustainability	1. Rotating SHOs 2. Lead authors moving trusts 3. Consultant awareness/participation

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