Safety Incidents in Critical Care

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The Faculty of
Intensive
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Introduction

This is the fifth of a series of safety bulletins, taken from NHSE/I sourced data on 600 critical care incidents classified as moderate or severe in patients above the age of two. Once again it cannot be regarded as a precise quantitative account of all incidents because it relies on reporting by individuals, but it does give a strong indication of the type of episodes which are occurring and importantly the lessons that can be learnt.

The aim of the bulletin is to try to present these incidents in a digestible way, because the raw data is very difficult to take in. A limitation and also a strength of the data, is that it is anonymous. It is therefore not normally possible for the editors of this safety bulletin to ask for more information.

A learning point is that when writing an incident report or completing a datix, it is important to describe the event in such a way that an independent person can understand what is being reported, why, what was involved and the outcome. This is often not the case, so some incidents have to be omitted or included in a very brief form in this summary, because a basic description of the event is lacking or important circumstances surrounding the episode are not clear, including the consequences of the incident or corrective measures taken.

Perhaps the most important learning point is that similar incidents have occurred over the five safety bulletins published so far. Therefore, our future aim is to look more closely at the pattern of episodes and to campaign to highlight those which are recurring, so critical care staff can avoid them.

Airway, Respiratory Support, Ventilation and Oxygen

Nine episodes involving the airway were reported. Six required reintubation in difficult circumstances. Two demonstrated the need for the provision of adequate oxygen facilities. One showed the need to establish if the airway is potentially patent with a leak test prior to extubation after a relatively prolonged period of intubation. Three were related to tracheostomies, including two incidents during or soon after tracheostomy insertion; two involved haemorrhage and two resulted in occlusion. Emphasising the need for rapid access to equipment and personnel to deal with these life-threatening issues.

A patient was changed from NIV to High Flow Nasal Oxygen (HFNO) to facilitate a nebuliser in an ICU escalation area (created because of lack of ICU bed spaces). However, because only one oxygen port was available, there was a delay between the NIV being stopped and HFNO being commenced, resulting in desaturation. Additional oxygen ports have now been installed to provide more than one oxygen supply at a time.

In a similar incident a patient was swapped from HFNO to CPAP. However, the swap over of oxygen supply between the two systems was slow resulting in desaturation and a hypoxic cardiac arrest. Only one oxygen port was available per bed space in this surge ward taken over for critical care.

A patient beathing on a T-piece became hypoxic, hypotensive and lost consciousness. Manual ventilation proved difficult, but large amounts of plugs and blood-stained secretions were suctioned from the chest with improvement in saturations, however boluses of metaraminol were needed to maintain blood pressure. It became apparent that the expiratory limb of the T-piece had been removed and therefore the route to exhalation was occluded. This immediately preceded the deterioration. A subsequent CxR chest Xray (CxR) revealed a large pneumothorax, which was decompressed, and a chest drain inserted with resulting improvement.

A critically ill patient required emergency intubation. However, they proved very unstable and suffered a cardiac arrest during the intubation, resulting in death.

Following elective neurosurgery upper airway obstruction occurred requiring reintubation.

A patient who had been ventilated with encephalopathy for 12 days was extubated on ICU. Soon afterwards the patient developed respiratory distress and desaturated. Oral intubation was attempted, but this was not possible due to severe laryngeal oedema. Ventilation via an i-Gel was not

successful, but front of neck access was achieved using a Melker cricothyroidotomy kit. The airway was briefly lost again as the Melker was displaced during surgery, but was rapidly replaced by a repeat surgical tracheostomy, with a good outcome and the patient survived.

During insertion of a percutaneous tracheostomy an aberrant innominate artery was punctured by the dilator, resulting in haemorrhage. An urgent thoracotomy was performed, and the artery repaired.

A critical care patient had undergone a surgical tracheostomy earlier in the day. However, the airway became obstructed and ventilation via the tracheostomy was not possible. The patient was reintubated via the larynx, but the ET tube would not pass beyond the tracheostomy site, therefore the wound was extended and the patient intubated over a bougie into the stoma. This was successful on the second occasion. A possible cause for the airway obstruction was bleeding. However, the patient suffered a hypoxic cardiac arrest, which did not respond to treatment.

A conscious patient displaced her tracheostomy. Manual ventilation was attempted, resulting in rapidly developing surgical emphysema of the chest and face and desaturation. Oral endotracheal reintubation was successful, despite a hypoxic cardiac arrest lasting for two minutes, followed by stabilisation.

The ventilator alarm indicated the expiratory cassette had malfunctioned. Peak pressures rose above 40 cmH2O and the patient desaturated. Hand ventilation via a Waters circuit was commenced and saturations gradually recovered over the next 15 minutes.

Comment

Preparation is vital before airway or respiratory support manoeuvres (1). Use of a guidance and regular practice and immediately available difficult airway and resuscitation equipment is vital (2). Cardiac arrest during intubation in the critically ill occur in around 3% of cases (3).

Anticipation of the need for equipment to allow rapid and smooth transition from one type of support to another or to provide separate sources of oxygen is essential. This need is particularly important in overflow areas during times of emergency critical care expansion. Similarly cuff down leak tests or other methods to ensure safe extubation are an important part of assessment after prolonged intubation.

Pre procedure ultrasound examination of the neck may identify aberrant vessels impinging on the site. Avoidance of too low an insertion may reduce the risk of vessel damage. This may also reduce delayed bleeding due to erosion of innominate vessels.

ATS Guidance is perform cuff leak test in high-risk patients (> 6 days intubation) prior to extubation and give steroids if no leak (4).

Arterial, central venous (CVC), CRRT and peripheral lines

Fifteen incidents were reported, particularly focussing on loss of Seldinger wires into the patient, including one for a CRRT vascath, which went unrecognised until after discharge home. Hand ischaemia following insertion of an ulnar arterial line was reported.

Pressure transduction was not performed on CVC lines, including at time of insertion and over subsequent hours and even days, nor was this documented. As a result, arterial placement was missed and vasoconstrictors and TPN were infused intra-arterially. CVCs were inserted late in patients with faecal peritonitis, who were very likely to need central access and inotropic/vasoconstrictor support and could potentially be done early especially in theatre. Chest X-rays were not organised after insertion in a prompt manner, and as a result pneumothoraces were missed in patients, particularly where the differential diagnosis of hypotension could be difficult or even multifactorial. Another case was reported of a CVC line which had lost its needle-free connection/access device (bionector, in this case) and had the three way tap in the open position leading to air embolism. Close attention to this possibility is especially important when sitting a patient out.

A chest drain was passed into the liver and subsequent thoracotomy/laparotomy revealed an unrecognised cardiac tamponade. Two extravasation injuries were described, including one when 10 ml of calcium chloride was injected via a

peripheral cannula, resulting in injury to the dorsum of the hand.

An arterial line was inserted into the left radial artery. During insertion the guidewire was lost into the artery.

A left ulnar arterial line was inserted into a patient with poor flow through the left radial artery. The left hand became pale and dusky.

Ischaemia occurred in the tip of the index and middle finger of the hand which corresponded to the side of an arterial line, which was removed. Circulation was poor intermittently and then deteriorated after proning. In another incident ischaemia of the hand occurred in the right hand at an undisclosed time after insertion of a radial arterial line.

A CVC line was inserted intra-arterially and not transduced until arterial placement was suspected three days later.

> **"Equipment should be checked at insertion, and immediately following the procedure, to ensure guidewires have not inadvertently been left in place.**

A subclavian CVC line had been in use for three days for high dose vasopressor and TPN administration. A blood gas was then taken from the line, which matched arterial blood gases. At this point the line pressure was transduced, which confirmed arterial placement, with the tip subsequently thought to lie in the aortic arch.

Inadvertent catheterisation of the right vertebral artery occurred during central venous cannulation of the right internal jugular vein. In another incident an accidental left carotid artery placement was made.

A patient developed respiratory distress and chest pain whilst sitting out in a chair, with a rapid fall in GCS from 15 to 3, which subsequently was diagnosed as due to an air embolism. A lumen of the CVC was found with the three-way tap in the open position and the related connector was found on the floor.

A patient was transferred to critical care after surgery for faecal peritonitis, requiring peripheral IV metaraminol support at the limits of normal dosage. A CVC had been inserted relatively late intraoperatively and no CxR had been requested. Sedation drugs were being given via the CVC, but no vasoconstrictor infusion. The patient remained ventilated and gradually deteriorated in terms of blood pressure, oxygenation and tidal volume. Transfer to ICU was delayed and no CxR was requested for several hours. Noradrenaline was not started because of the lack of CxR. When the CxR was eventually done in the early hours on the ICU because of further deterioration, a large tension pneumothorax was detected and immediate decompression and chest drain performed.

A CVC was inadvertently pulled out. Only one suture was present on the device gripping the line. There were no sutures in place on the CVC line itself.

A pneumothorax developed immediately after a left sided CVC insertion, requiring a chest drain.

A vascath was inserted for CRRT for acute renal failure on ICU. The patient was discharged home 16 days later. On returning to outpatients 5 weeks post discharge, CT scans were reviewed and a femoral guide wire was seen. This was removed radiologically the following day.

Comment

Failure to transduce and document pressure readings from CVC lines at insertion and during subsequent care is a recurring theme resulting in late diagnosis of intra-arterial misplacement, which may be further complicated by infusion of vasoconstrictor drugs or TPN. Good practice is that venous placement is confirmed multiple times: at cannulation, after insertion of guidewire (before dilation) and before use. Units should have clear policy linked to LocSSIP. ASA have published guidelines and surveys (5).

Equipment should be checked at insertion, and immediately following the procedure, to ensure guidewires have not inadvertently been left in place.

Click here to view previous issues of the Safety Bulletin along with other safety reports and the ViRUS COVID-19 reports.

Nasogastric (NG) and flexiseal tubes

Eight incidents were reported. These highlighted the problems of looking at a CxR in a patient with an earlier CxR which had been done to check placement of a previous NG tube. Some patients have a fine bore feeding NG tube inserted as well as a wider NG tube for gastric drainage. The presence of two tubes, including a fine tube caused identification problems.

An NG tube was inserted, then an earlier Xray examined resulting in erroneous confirmation of positioning and commencement of feeding. Unfortunately, no up to date CxR had been done and the new NG tube was in the left lower lobe of the lung.

Confusion arose when more than one NG tube had been passed through the nose. The second of these was a fine bore NG tube, which was accidentally passed into the lung. It was confused on the CxR with the correctly placed standard NG tube being used for gastric drainage. Both the ICM registrar and radiologist checking the CxR were unaware that there were now two NG tubes in place. A narrow line over the lung (the fine bore tube) was confused with an ECG lead present in that area and so the misplacement was not initially detected. Subsequently the drainage NG tube was also displaced and pulled out and then replaced and a further CxR taken. This new tube then was also accidentally pulled out. The following morning the incorrectly placed fine bore feeding tube was removed after its position was questioned overnight and NG feeding stopped.

An NG tube which had been misplaced into the lung was discovered during a fibre optic bronchoscopy, which was being performed to clear the lungs after a respiratory deterioration in a ventilated patient.

An NG tube was misplaced into the lung, then removed. This was immediately followed by a respiratory deterioration, surgical emphysema and a pneumothorax which required drainage.

Flexiseal

A flexiseal had been inserted to manage profuse loose stools. The duration of use was unclear, but was complicated by a large bowel perforation. In another instance pressure ulceration occurred around the anus during flexiseal usage.

Comment

The repeated need to replace NG tubes makes errors more likely and in some cases the means of securing promotes pressure ulcers. Consideration could be given to the best means of securing NG tubes, which might reduce the opportunities for errors during reinsertion, as well as the better use of guidelines to confirm positioning.

In most situations, when replacing a conventional NG tube with a feeding tube, the old NG tube should be removed first to prevent confusion.

It is vital to know the date and time of insertion of an NG tube and compare this to the date and time of a check CxR and to know how many tubes or other lines are present.

If a respiratory deterioration occurs always consider whether the NG tube is correctly placed and whether a pneumothorax could have been caused by NG misplacement (even after NG removal) (6).

Documentation of flexiseal use and awareness of potential complications is important.

Chest drains

Over one litre of blood passed into the drain soon after insertion of a Seldinger-guided chest drain. A laparotomy and thoracotomy were performed, which revealed a 700ml of haemoserous fluid in the pleura, a large amount of dark and probably old blood in the pericardium under pressure, which was released, and femoral bypass was commenced. Further exploration demonstrated that the drain had been inserted into the liver, which was then repaired. The patient came off bypass and improved.

Suction pressure settings on a chest drain were reduced from -4KPa to -0.8KPa for no documented reason and the pressure settings were not being recorded. Fluid had collected in the pleura.

Comment

Regular documentation of chest drain pressures is required. Ultrasound guidance is important during insertion of Seldinger chest drains.

Medication

Drug problems were reported involving anticoagulation, particularly related to dose. Mistakes also occurred due to lack of knowledge of drugs and treatment of diseases. The difficulties of dealing with different computerised prescribing systems on the ward following discharge also led to errors.

Incidents involving dose, regime and timing of anticoagulant drugs:

A patient was prescribed and received 10000 units/hr of heparin via an arterial sheath instead of 500 units/hr. A high APTT of 180 secs was recorded seven hours later and the error was detected.

A heparin infusion was started following a brachial embolectomy. The infusion was stopped and replaced with regular treatment dose low molecular weight heparin (LMWH). Unfortunately, the LMWH was not given at the specified time. Brachial, radial and ulna arteries then became occluded, requiring surgical exploration.

CVVHD was commenced. A systemic heparin infusion was commenced. After one hour 15000 units had been delivered, which was a much higher rate than had been prescribed. CVVHD running using citrate, but no calcium commenced.

A haemophilia patient was prescribed 5000 units dalteparin as thromboprophylaxis. After administration the patient questioned the use of the drug.

A patient with sickle cell disease did not receive prescribed enoxaparin or mechanical thromboprophylaxis.

Mistaken concentrations, errors due to incompatible computer systems, mechanical errors in administration, lack of knowledge of drugs, diseases and related therapies:

During an emergency reintubation a 10mg IV bolus of metaraminol was given rather than 0.5mg. When a patient was readmitted to ICU it was found that on the previous discharge from ICU, levothyroxine, bendroflumethiazide, cinacalcet and atorvastatin had not been transcribed to the different ward electronic prescribing system.

A patient with pre-eclampsia was found to have a BP of 173/96 after labetolol and nifedipine. Therefore, a magnesium sulphate prescription was prescribed, but not given until two hours after the prescription time. Soon after the magnesium was commenced the patient had a seizure, which was thought at first to be an allergic reaction by the administering staff and so the infusion was stopped, even though the hypertension was persisting.

Cisatracurium was accidentally administered to a spontaneously breathing patients, rather than caspofungin by a nurse in full PPE who was not familiar with the drug and had checked the drug through a window with a colleague. Soon after administering the drug the patient's saturation, heart rate and blood pressure fell. However, the patient recovered after manual ventilation.

Two infusions of propofol were left running after a syringe change resulting in hypotension and hypercapnoea.

A noradrenaline pump alarmed high pressure. The infusion stopped and hypotension resulted. The pump and the infusion were subsequently found to alarm even when not connected to patient due to a tubing blockage. Fresh connecting tubing had not been tried.

A patient transferred for an MR scan had received rocuronium. On return from the scan on ICU the patient could hear nurses talking, but was unable to move. Sedation had been running.

A patient with a reduced conscious level and a sodium which was unrecordably low, but <100 mmoles/litre received a too rapid increase of sodium to 117 within 24 hours and 121 by 48 hours. Subsequently the patient developed a tremor, generalised mild weakness, horizontal nystagmus, dysarthria and dysphagia. MRI showed central pontine demyelination.

Comment

Errors with anticoagulation, especially when prescribed in other environments or for unfamiliar purposes are an important issue requiring exact communication and special consideration during handover of patients especially from theatre, but also at shift hand-overs. Use of a standardised concentration of heparin for infusion (1000 units/ml) may reduce confusion.

Patients who have undergone transportation whilst intubated and ventilated may have received neuromuscular blocking drugs to reduce the chance of accidental extubation and to promote adequately controlled ventilation. Reversal drugs may well have not been considered appropriate in this setting. This should always be considered and adequate sedation continued until the effects have worn off. The presence of neuromuscular blockade can always be checked with nerve stimulation. Knowledge and management of the anticipated correct rate of correction of sodium disorders is vital. It is vital to understand the diseases that drugs are prescribed for and the need for timely administration. Medicines reconciliation for all transfers of care is an important task.

Organisation and Staffing

A number of incidents were reported, including failure to check other results and not just the primary reason for the test on the same blood sample. Other incidents suggest a high load on a reduced number of staff, who are trying to make admission and treatment compromises to cope with bed and staff pressures.

Some incidents suggest the need for early discussion with the consultants involved with the patients care from a very early stage, including the referring team, to ensure the patient receives the appropriate treatment quickly in the right location and the referral is appropriate.

Delayed or inaccurate reports, revised results or delayed actions

A patient fell and hit their head during a broad complex tachycardia. The CT scan was initially reported as no intracranial pathology. The patient was treated with medical therapy and anticoagulated. Then developed a right sided subdural haematoma with mass effect, so was intubated and ventilated and anticoagulation reversed. The neurosurgeons did not feel surgery would be helpful. Review of initial CT suggested a subdural was present prior to deterioration. Comment from radiologists that small subdurals can be hard but vital to spot and special blood windows or 3 plane reconstruction may be important in diagnosis.

A 40 year old patient presented to the ED with abdominal pain, followed by a cardiac arrest. After ROSC the patient was very unstable and the cause of the cardiac arrest was unknown. A CT abdomen was performed and then the patient was transferred to ICU. No report was available after one hour, so the intensive care registrar called the radiologist to reinforce the precariousness of the situation. The report was completed three and a half hours after the CT scan had been carried out, revealing a sigmoid perforation. The patient was then taken to theatre soon afterwards.

A major trauma patient was admitted with multiple fractures. An addendum to the initial CT scan report was added three hours later, indicating a left anterior shoulder dislocation. The addendum was missed by all the attending teams, until Xrays taken 20 days later identified the injury.

The CxR on hospital admission was reported later as showing a prominent right hilum. However, this delayed report recommending a chest CT was missed and not seen until the patient was readmitted with a CVA and underwent a CT angiogram of the aorta, which revealed a lung malignancy (7).

The intensive care registrar was called to insert an arterial line in a patient with a recent Hb of 45 g/l yesterday and 39g/l today, which were not thought to be reliable by the referring team. The patient had a PMH of COPD and obesity and had had four days of melaena as well as a bleed from a leg ulcer. One unit of red cells and one unit of platelets had been ordered by the referring team. The ICU team contacted the gastro consultant regarding endoscopy, the general surgeons to suture the ulcer and the referring team's medical consultant, who was unaware of the patient.

Arterial and venous blood gas samples in theatre showed a glucose of 2.5 mmols/l, then 2.1 mmols/litre just over an hour later and then two hours later still 2.7 mmols/l. No glucose supplementation occurred until more than five hours after the original sample.

A severely septic patient with renal failure was treated medically for a potassium of 6.0 mmols/litre. They were thought too unstable for HD via their existing fistula. A vascath was not sited for another 4.5 hours because of other severely ill patients occupying consultants, and the trainees lacked the skills to site the line. At 5 hours cardiac arrest occurred with a potassium of 8.4 mmols/litre.

Confusion arose after a X-match sample was ticked as "taken" in ED, but none had been sent in a patient with melaena. An Hb of 59 g/litre was followed by hypotension, which recurred intermittently over seven hours. Nurses had later attempted to take samples and failed, but medical staff remained unaware until hypotension occurred. Staff were distracted by another very sick patient.

A CTPA was performed 8 days after original request. The patient had been anticoagulated empirically, but then developed a retroperitoneal haematoma, which became infected. This was then drained surgically, but ultimately the patient died.

A patient was intubated and ventilated during treatment of a cardiac arrest by a consultant anaesthetist and a consultant intensivist. The patient was accepted for PCI in another hospital. However no middle grade anaesthetist or intensivist available, so the transfer was delayed by two hours. Phone and then online referral were made to the neurosurgical team after a head CT scan showed a significant intracranial bleed. No response with a treatment plan until two and a quarter hours after on-line referral.

A patient with necrotising fasciitis was referred to an

orthopaedic consultant, who said the patient would need transferring to another hospital under plastics. The patient died soon afterwards. However, this would have become an important issue if they had been too unwell for transfer but were still continuing potential treatment.

Delay in admission

A fractured neck of femur patient who normally lived alone, was scheduled for surgery three days after admission, but this was cancelled because of infection. He had chronic renal failure requiring haemodialysis (HD). HD resulted in hypotension and abandonment of dialysis due to sepsis. A delay in admission for ICU treatment occurred because of covid admissions and lack of staff. Unable to discharge patients including three patients waiting for ward beds for 5 days.

Delay in admission of a septic patient on noradrenaline and acute renal failure with anuria on a coronary care ward, who had been stepped down from ICU.

A Covid patient on oxygen was not transferred to a nearby larger hospital because they were judged not unwell enough to justify transfer. Over time further deterioration occurred, but no ambulance was available. The patient was started on HFNO, but then transfer did not occur because hiflow equipment was not available for ambulance transfer and would have caused sustainability issues due to very high gas consumption.

A complex patient was referred to ICU with bowel obstruction and acute abdominal pain and a history of leukaemia and breast cancer currently under the care of oncologists, who were not available for discussion of oncological prognosis. The ICU team did not want to accept without a consultant surgical plan and information on patient's treatment or palliative status from oncologists. After 15 hours in the emergency department the patient was taken to theatre for laparotomy after a consultant surgical review.

Delay in admission to ICU of a patient in ED with an Na of 103. The patient subsequently suffered a cardiac arrest.

A 33-week pregnant patient admitted with abdominal pain and Covid, suddenly deteriorated 5 days later requiring an emergency C-section. Intra-uterine death had occurred. This was complicated by bleeding, requiring a subtotal hysterectomy. Admitted post-op to ICU, where signs of bleeding continued, leading to a CT angiogram later in the day. No bleeding point was identified. The following day imaging showed a large pelvic haematoma, which was removed and packed at laparotomy. Postop returned to ICU with renal failure requiring CRRT and severe respiratory failure treated with prone ventilation. Subsequently, multi-organ failure became overwhelming, and the patient died.

No ICU bed available on four occasions over three and a half months for an elective hemicolectomy patient. Then presented with worsening symptoms and inoperable disease.

No ICU bed available on repeated days at regional cardiac centre initially on CCU and then ICU for transfer from another CCU and then ICU for treatment of recurrent cardiac arrests.

Fitting child received lorazepam, kepra and phenytoin, recurred overnight. When reviewed by the ICU team they were not fitting and CVS/RS stable. PICU Consultant did not feel ICU admission warranted and asked for paediatric consultant to review diagnosis. Paediatric consultant suggested EEG in the morning, which was done at 9am and confirmed seizure activity. Then admitted to PICU.

Comment

When a patient is referred to ICU, the referring team's consultant and other consultants directly involved in specialised aspects of the urgent care should be aware of the patient's condition and able to promptly formulate their plans including that of timely surgery and treatment.

Some of these incidents highlight the importance of reviewing reports and having an alert system in place for serious and unexpected findings requiring further action. A draft update on radiology reporting by The Royal College of Radiologists is currently out for comment (7).

Ward design

The ambient temperature on the ward was 29.7 degrees C. The ICU was very hot for more than three days. Patients and staff, especially those in PPE were suffering. Estates permitted portable air-conditioners in non-patient areas. The building was sprayed with water to encourage evaporative losses.

Lack of specific AHPs

In many centres, some of the roles of AHPs have traditionally been performed by other groups with an interest in that area, including nurses and doctors. As the move towards GPICS-2 standards and more specialisation occurs, there is often a lack of specific AHPs with critical care expertise leading to delays or

absence of certain techniques or services and so delays in patient care or potential recovery.

A patient was very keen to resume eating and drinking after 45 days on ICU. No definite date could be given for an appointment with the speech and language therapist, which led to uncertainty and distress on the part of the patient.

Lack of nursing staff

A patient with learning difficulties who had undergone a renal transplant couldn't be transferred to the ward, because of ward staffing problems, which increased their anxiety levels.

Nine ICU patients with six nurses, including a ventilated patient for proning.

12 nurses needed on ICU, but only nine available due to sickness. Two patients unable to be discharged due to lack of ward staff.

Lack of continuous renal replacement therapy (CRRT) trained ICU nurses led to patient discharge to renal ward. However, on arrival patient was too unwell for haemodialysis and needed to be returned to ICU for renal replacement therapy.

> **"Protocols of how to deal with the violent or aggresively delirious patient are needed and there is a duty to protect staff from harm.**

Three level 3 patients on general ICU and one on the Covid area of the ICU needed to be looked after by nurses who already had another patient each. No agency staff or nursing staff from the local private hospital were available to assist.

ICU nursing staff on general ICU were depleted by five nurses. No room to admit emergency cases and a lack of capacity for proning.

Five nurses were not available at short notice, including two off with Covid. This caused difficulties as three patients were proned, one bariatric patient required six nurses for "manual handling" and two were on CRRT.

A patient with a DNACPR in place and decision not to return to ICU, was discharged to the ward. The ICU nurse involved in the transfer was not fully briefed on the patient and the discharge notes were missing, resulting in confusion regarding further management as the patient began to deteriorate.

On general ICU there was one level two and one level three patient looked after by one nurse and two level three patients with one nurse. Eight patients in total, with only three members of staff who had completed the ICU course.

Injuries to staff

A delirious patient punched a staff member.

A delirious agitated patient climbed out of bed, pulling out his arterial line and cannula. He was given 5mg of IV haloperidol. The patient wanted to go to the toilet, then sat at the nurses station. He then walked down unit and fell, but was able to get up unaided. From here he entered the sisters' office and flung the ACCP to the floor, striking her head against a desk. During this time security and a senior nurse arrived, but felt unable to assist because the patient had not received a DOLS. Further 10mg iv haloperidol given and patient assisted back to their bed space.

Unwitnessed incidents

A level 2 patient pulled off an NIV mask whilst the supervising nurse was with the patient next door who needed frequent attention to prevent him pulling on lines and tracheostomy, with the monitor showing both patients. However, the nurse did not hear the alarms and the door through to the patient in question was closed due to infection risk. The nurse in charge noticed asystole on the main desk monitor on returning from a safety huddle and called for help.

An unwitnessed fall in an alcoholic patient with liver failure and consequent thrombocytopaenia and clotting disturbance, resulted in a small subdural and small subarachnoid haemorrhage.

A child on PICU climbed out of bed and then fell, snapping his urinary catheter, which required removal from the bladder by the urologists. A local decision was taken to reinforce guidance to remove catheters unless essential from children once extubated.

Patient found on the floor at foot of the bed covered in blood and faeces. The central line was pulled out of the vessel, but was very taught and still attached to the patient by the sutures.

Patient sitting out, requesting a cup of tea. The staff member left the room to get the tea and the patient got up and fell, hitting her head. CT showed 6mm subdural overlying left cerebral hemisphere, resulting from the fall.

Comment

Delayed plans occurred during the use of both telephone and online referrals. A common factor in delays was the need for sufficient experienced staff to be available to deal with the situation.

Action to deal with violent patients who had in some cases injured staff became confused with DOLS legislation. Protocols of how to deal with the violent or aggressively delirious patient are needed and there is a duty to protect staff from harm.

More specific design of units to reduce unwitnessed events is essential and to aid action when alarms are triggered. Episodes of intolerably high temperature on wards were reported again, with a lack of design features to prevent or control.

Staffing deficits had direct impact on patient events, including discharge and readmission.

Pressure Ulcers

Although this is not a numerically precise report, pressure ulcers consistently form the largest section so are listed by anatomical area. These result in much suffering, often in patients who are sedated or having difficulty communicating and the effects may be long-lasting. Proning is mentioned in some reports and where it is these are listed separately. Some in the supine group, could have been proned without it being mentioned.

Supine

- Head: inside mouth/tongue 2, lips 3, Anchorfast application 5, ears 6, back of head 6 (including 2 with spinal collars), neck related to ET tube ties 2. Nose 7 related to NG tubes.
- Tracheostomy site: 2
- Limbs: Heels 17, toes 4, finger 1, antecubital fossa cannula site 2, splint/plaster lower leg 2.
- Sacrum: 39 including 3 too unstable to move or position and 1 restricted by ENT surgeons following surgery and 1 due to spinal injury.
- Buttocks: 15, including 2 diarrhoea related.
- Flexiseal bypassed in severely septic patient with diarrhoea. Barrier cream to pressure areas and ulcer left open to air. Flexiseal system ulcer 1.
- Urinary catheter producing a penile tissue injury in a spinal injury patient.

Prone

- Head: Facial 8, including one patient who was too unstable to place supine; nose 3 plus 1 NG tube related injury; inside mouth 2; corners of mouth related to endotracheal ties 12; lip injury related to endotracheal tube 3; lip related to Anchor Fast 1; ear 1.
- Limbs: arm 1; knees 1, pressure ulcers to dorsum of toes 4.
- Chest 5.
- Urinary catheter producing a penile tissue injury 2.
- Pressure ulcers related to HFNO, CPAP and NIV.
- CPAP/NIV bridge of nose 6, chin 1, ear 2.
- HFNO cannula injury to nose 1.

Comment

Pressure injury due to poorly secured NG tubes continue to be an issue, as well as tension on NG tubes and urinary catheters causing injury. Common pressure points remain a serious problem impairing NIV/CPAP and even HFNO cannulae. Endotracheal securing techniques including ties and even Anchorfast (which are not recommended for use when prone) continue to be a problem in search of a solution. Care of the lips, mouth and tongue when intubated can be problematic, especially when the lips are trapped or compressed by endotracheal tubes, this requires frequent attention and repositioning. Traditional pressure points of heels, buttocks and most of all the sacrum are common problems in need of great care, and frequent nursing/positional attention.

Infection

Infections are commonly reported as incidents, mainly those that are related to C difficile or spread of infections from patients or staff to other patients, or infections that are thought to be unusual.

Ward closed due to Covid outbreak resulting in one patient and one staff member positive, with remainder of patients thought to be contacts.

Nine cases of hospital acquired Covid 19 were reported including one death.

Nine specific VRE cases were reported, some resulting in further spread: Seven patients with VRE, thought to originate through earlier ward contact were admitted in one episode. In another, a patient with VRE was discharged to the ward, but their infection status was not realised and further ward spread occurred.

Eight cases of ICU acquired Clostridium difficile were reported.

Cross infection of Acinetobacter baumanii NDM/OXA23 was thought to have occurred in 11 ICU patients.

Corynebacterium striatum cross infection was reported on ICU.

Individual cases reported included Pseudomonas isolated in blood cultures x1, E coli bacteraemia x 3, Klebsiella pneumonia blood culture positive x 2, MSSA blood culture positive in 6, MRSA x 1. Rhino and enterovirus x1.

Comment

Cross infection is a continued threat, sometimes in multiple patients. Some patients may be transferred without an appreciation of their infection status leading to further spread. Investigations should take place as to the cause of the outbreak (e.g. equipment transfer/use). Communication and an understanding of risks, with sufficient suitable ward spaces, precautions including PPE and staff to reduce cross infection are important.

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