



# PATIENT SAFETY UPDATE

July – September 2016



# LEARNING POINTS FROM REPORTED INCIDENTS

## July 2016 – September 2016

This document aims to achieve the following:

- Outline the data received, the severity of reported patient harm and the timing and source of reports
- Provide feedback to reporters and encourage further reports
- Provide vignettes for clinicians to use to support learning in their own Trusts and Boards
- Provide expert comments on reported issues
- Encourage staff to contact SALG in order to share their own learning on any of the incidents mentioned below.

The SALG Patient Safety Updates contain important learning from incidents reported to the National Reporting and Learning System (NRLS). The Royal College of Anaesthetists (RCoA) and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) would like to bring these Safety Updates to the attention of as many anaesthetists and their teams as possible. We would like to encourage you to add this Update to the agenda of your next Morbidity and Mortality (M&M) meeting, and we would also like to hear your feedback on the learning points.

Feedback from M&M meetings on how the Patient Safety Update has informed action can be sent to the SALG administrator at [SALG@rcoa.ac.uk](mailto:SALG@rcoa.ac.uk)

## SURGICAL NEVER EVENTS – STILL HAPPENING

- *Patient being operated on in the prone position... despite the WHO checklist the patient was shaved and then underwent an incision on the wrong hip... once recognised the wound was closed and surgery was performed on the correct hip.*

The definition of a never event is: *a serious incident that is wholly preventable as guidance or safety recommendations that provide strong systemic protective barriers are available at a national level and should have been implemented by all healthcare providers*<sup>1</sup>. Prone surgery is a known risk factor for wrong side surgery. There are a number of safety barriers to wrong side surgery which include the WHO checklist (site marking in Sign In and what procedure, site and position in Time Out) as well as the team brief<sup>2</sup>.

The most common never events are surgical (wrong site, wrong implant/prosthesis and retained foreign object post procedure). Also of relevance to anaesthetists is wrong route medication. Whether they cause upset by the name, inference or subsequent sanctions, never events stir up controversy. The significance of such events may be debated, but there should be more learning from them. Quoting a member of the never events taskforce, "we need to look more closely at all the never events and learn the lessons".

NHS Improvement undertook a recent consultation on the never events framework. Both the RCoA and AAGBI have responded, along with over 500 other organisations and individuals.

1. Never Events, NHS England (<http://bit.ly/2iaswPF>)
2. How to guide to the five steps to safer surgery. NHS England ([www.nrls.npsa.nhs.uk/resources/?EntryId45=92901](http://www.nrls.npsa.nhs.uk/resources/?EntryId45=92901))
3. I K Moppett, and , S H Moppett. Surgical caseload and the risk of surgical Never Events in England. *Anaesthesia* 2016;71:17-30. doi:10.1111/anae.13290 (<http://bit.ly/2ei7V7E>)
4. J J Pandit. Deaths by horsekick in the Prussian army – and other 'Never Events' in large organisations. *Anaesthesia* 2016;71:7-11 <http://onlinelibrary.wiley.com/doi/10.1111/anae.13261/epdf>



## PATIENT SAFETY CONFERENCE 2016

The SALG Patient Safety Conference took place in Edinburgh on 30 November 2016. The event heard from Her Royal Highness, The Princess Royal, who commended anaesthesia for its commitment to promoting safety and learning from adverse incidents when they do occur. The conference was a wide-ranging and informative event showcasing the excellent work, reach and commitment of individuals and groups within SALG. It considered some of the obstacles to maintaining patient safety, possible solutions and the implementation of quality improvement initiatives, as well as research and audit activity. More information can be found [here](#).

# LEARNING POINTS FROM REPORTED INCIDENTS

## DRUG ERRORS – THEY KEEP HAPPENING TOO

- *An arterial line set was prepared by the ODP prior to induction of anaesthesia for a 5kg child undergoing neurosurgery... normally use a 500ml bag of Heparin Sodium 1000iu / L in 0.9% Sodium Chloride for arterial line infusions. The infusion was accidentally set up with a 500ml bag of 20% Mannitol. The infusion bag was placed in a clear pressure bag for the arterial line set and the error was not picked up by the consultant or trainee anaesthetist... a right radial arterial line sited, the arterial line set was attached and flushed. During surgery two arterial line samples were taken and the line flushed using the pressurised infusion set. On transfer the ODP noticed that the bag did not have the red 'Heparin' writing on the side and inspected the bag more closely. The error was then recognised and the infusion bag exchanged for Heparin / Saline. The patient continued to be closely monitored and no significant harm is thought to have occurred as a result of this drug error. It is important to note the similarity between the two IV fluid bags mentioned here.*
- *I am writing now because a complaint has been received from the patient due to new neurological symptoms since the operation. Just before knife to skin for a HeRO graft operation, I gave vancomycin intravenously over one minute instead of over 60 minutes as advised. It had been a year since I had last given vancomycin IV and I simply forgot that it could not be given as a bolus. The patient became red, hypotensive (40 / 20 initially responding to adrenaline). I knew immediately what I had done, corrected it, and surgery proceeded uneventfully. I explained everything and apologised to the patient as per duty of candour an hour or two postop. I thought there had been no sequelae as she was fine at the time.*
- *Whilst the Consultant Anaesthetist took a comfort break, a trainee anaesthetist changed the propofol syringe and forgot to restart the machine. The infusion pump failed to give an audible alarm and the present anaesthetic levels were not maintained, which was only discovered when the patient moved on the operating table. There is a high possibility of unplanned awareness during surgery.*
- *On arrival in recovery realisation that a 2nd 20G cannula (without any extensions) previously used for induction with remifentanyl and propofol at the start of a case may not have been flushed during the case. It was not flushed along with the other cannula during the WHO checklist... two anaesthetists involved in patient care. With an awareness of a risk of opiate sensitivity in this specific case the 20G cannula was flushed by the anaesthetist. The patient was observed and quickly stopped responding and required assisted ventilation for 30 seconds.*

Drug errors are one of the most common types of error reported to the NRLS and can arise for many reasons; they can be due to latent or active errors. They are estimated to occur in 1:133 anaesthetics and could be avoided if guidance was better implemented (quote from PSU PowerPoint June 2012<sup>1</sup>). Drug storage was implicated in the previous high profile death of a patient in ICU involving the arterial line flush solution. Following this death, the AAGBI published guidance<sup>2</sup>, supplementing the previous NRLS stage 2 alert<sup>3</sup>.

It is easy to forget to read the drug information leaflet prior to drug administration, particularly when we consider ourselves familiar with that drug. In addition, working in a time-pressured stressful environment often adds tiredness and distraction into the mix. Although not routinely favoured by anaesthetists, double-checking can offer a safety net for drug administration errors.

In the April – July 2016 edition of the Patient Safety Update, SALG reported a case of injection of residual anaesthesia drug in an intravenous cannula. A stage 1 warning was published by NHS Improvement Patient Safety highlighting the serious risk posed by inadvertent injection of residual anaesthesia drugs in intravenous cannulae<sup>4</sup>. The recommendation states that all cannulae and extensions should be flushed before leaving theatre and/or recovery. The risk of residual drugs being present is increased by having multiple cannulae in situ. Despite efforts to raise awareness of this type of drug error, reports, such as the one above, are still being received. NHS Improvement Patient Safety are considering their next steps; a stage 2 alert may be required.

1. SALG Patient Safety Update (<http://bit.ly/2j9vH8J>)
2. T E Woodcock et al. The Association of Anaesthetists of Great Britain and Ireland 2014; *Anaesthesia* (69): 380-385. (<http://bit.ly/2ivd7HH>)
3. Infusions and sampling from arterial lines Rapid Response Report. NHS England ([www.nrls.npsa.nhs.uk/resources/?entryid45=59891](http://www.nrls.npsa.nhs.uk/resources/?entryid45=59891)).
4. Stage One: Warning Residual anaesthetic drugs in cannulae and intravenous lines 14 April 2014 NHS England. (<http://bit.ly/114iOrh>).

## SAFETY IN THE MRI SUITE

- *An ODP following the anaesthetist and patient brought in a laryngoscope and Magill's forceps into the MRI suite.*

Section V of the AAGBI MRI guidelines highlights the need for all staff to be aware of the risks and to be trained in the delivery of sedation and anaesthesia within the MRI environment<sup>1</sup>. This guidance is being updated and will be out to consultation in the near future. SALG has participated in the update.

1. P Farling et al. Association of Anaesthetists of Great Britain and Ireland. Provision of anaesthetic services in magnetic resonance units 2002. ([www.aagbi.org/sites/default/files/mri02.pdf](http://www.aagbi.org/sites/default/files/mri02.pdf)).

# LEARNING POINTS FROM REPORTED INCIDENTS

## POWER FAILURE – BE PREPARED

- Complete power failure throughout the hospital. Patient was totally dependent on BIPAP ventilation which does not work without power, patient cyanosed, assisted breathing with bag / valve mask initiated. Patient deteriorated rapidly.
- Patient on table and towards the end of a laparoscopic appendectomy. Alarm on the anaesthetic machine to say that it was now functioning on battery, then battery use alarm on desflurane vaporiser also alarming. monitor also running on battery at this point. all the plugs were plugged into main pendant so plugs moved over to wall sockets, one of which was also not working despite the orange indicator light being on. Reported to hospital maintenance.

The critically ill patient with reduced physiological reserve and need for system support is particularly vulnerable when there is complete power failure in ICU. It is recommended that anaesthetists and intensivists are aware of the possibility of power failure and of their organisation's guidelines to deal with such an event<sup>1</sup>. Regular training should be available.

1. L Miles et al. Environmental emergencies in theatre and critical care areas: power failure, fire, and explosion. CEACCP 2014 (<http://bit.ly/2iVteRR>)

## AIRWAY COMPLICATIONS – THE LESSONS FROM NAP3 ARE TIMELESS

- Suspected inadvertent and unrecognised oesophageal intubation for about 20-30 mins. Patient arrested in PEA, CPR commenced. Return of spontaneous circulation after reinsertion of endotracheal tube.
- Elective maxillo-facial surgical patient following neck dissection and forearm free flap... no tracheostomy in situ, nasally intubated post operatively, extubated some time later with minimal neck swelling and good cuff leak on deflation test. The next day the patient suddenly deteriorated with stridor and hypoxia - medical staff for ICU immediately summoned. PEA arrest, very swollen neck with hard haematoma palpable. x2 ICU registrars in attendance and 2nd on call registrar for anaesthesia and max fac registrar summoned to ICU via 2222 system... arrived rapidly. x2 attempts to intubate using difficult airway kit and c-mac device - unable to intubate or ventilated during CPR. surgical wound to front of neck opened up and haematoma evacuated to then enable successfully rapid intubation and treatment of hypoxia. continuous chest compressions throughout lasting 2 cycles ( 2 minutes ) before ROSC obtained with intubation and ventilation on 100% FiO<sub>2</sub> via Waters bag.
- Patient in ICU Day 15 post 2 laparotomies (SBO, ischaemic bowel) with broncho and lobar pneumonia. Two days after insertion, the tracheostomy was leaking

(evidence aspiration NG feed / bile; worsening CXR). Whilst changing trache tube for bigger size (8) with bougie, easy insertion but immediate hemorrhage from tracheostomy site with aspiration, desaturation and intermittent ET<sub>CO</sub><sub>2</sub> from new tracheostomy tube.

## Invasive procedures are not without risks and some of the risks can lead to significant morbidity or even death.

- Central line inadvertently placed in right carotid artery. Patient developed left hemiparesis.
- Patient on ICU following sigmoid perforation and faecal peritonitis. Condition improving. Sudden deterioration with shortness of breath, cardiovascular collapse (tachycardia and hypotension) and desaturation, requiring 100% O<sub>2</sub>. On examination, port on CVC found to be open without bionnector connected, probably entraining air... had been open for upwards of 15 minutes...
- Patient had a spinal anaesthetic but unable to proceed for brachytherapy because of a polyp that was removed in theatre. Returned 2 days later for brachytherapy. Had a repeat spinal anaesthetic... discharged later that day. In early hours of the morning rushed to A&E - ended up in ITU, intubated with suspected sepsis. Discharged 13 days later. Reason stated for collapse was cerebromeningoencephalitis with *Strep.salivarius* bacteraemia from the spinal anaesthetic.

Central venous catheter (CVC) complications often feature in the Patient Safety Updates. The AAGBI guidance on safe vascular access states that carotid cannulation carries the highest risk of morbidity (1%) because of the risk of stroke. Arterial cannulation can be reduced by the use of ultrasound at time of insertion<sup>1</sup>.

In the same publication, the incidence of venous air embolism is quoted as 0.8%. Safe handling of the catheters is a priority for safe use. Monitoring, sampling and drug administration should only be undertaken by healthcare professionals competent in the use of CVCs.

Chapter 9 of the NAP3 report summarises the risks of spinal anaesthesia - related meningitis (1:50,000)<sup>2</sup>. The pathogenesis of this very rare complication can often be explained by the causal infective agent. For *Strep. salivarius*, this is droplet spread from the operator's airway<sup>3</sup>. Full aseptic technique which includes wearing a face mask should be used for preparation and siting of central neuraxial blockade.

1. A Bodenham et al. Association of Anaesthetists of Great Britain and Ireland: safe vascular access 2016. *Anaesthesia* 2016; 71(5): 573–585 (<http://bit.ly/28XDSTu>)
2. Major complications of central neuraxial blockade in the United Kingdom. The 3rd National Audit Project of the Royal College of Anaesthetists January 2009 (<http://bit.ly/1VBcxb9>)
3. M Wilson et al. Clinical and Laboratory Features of *Streptococcus salivarius* Meningitis: A Case Report and Literature Review. *Clin Med Res* 2012; 10(1): 15–25. (<http://bit.ly/2iVclD>)

# INCIDENT DATA SUMMARY

July–September 2016

## APPENDIX: INCIDENT DATA SUMMARY

A total of 8,599 anaesthesia-related incidents were reported during the specified time period. 7 incidents were reported using the anaesthetic eForm; 3 (43%) of these incidents were reported to the National Reporting and Learning System (NRLS) within one day of occurrence. 0 (0%) of the incidents reported to the eForm were reported as 'near miss' (harm was prevented from reaching the patient). 8592 incidents were reported using Local Risk Management Systems (LRMS); 20 (0.2%) of these incidents were reported within one day and 4415 (51%) were reported more than 30 days after they had occurred. Of the incidents reported via LRMS, 943 (11%) were reported as near miss.

All incidents reported via the eForm, and all those reported to the LRMS graded as 'death' or 'severe harm', were reviewed by the Patient Safety Team, now part of the Patient Safety Function within NHS Improvement. Consultant anaesthetists from the RCoA or AAGBI reviewed incidents identified as having potential cause for concern. No information about the Trust was disclosed in this review; only information about the incident. Most incidents reported via the eForm were completed by consultant anaesthetists, although the eForm is available to all members of the perioperative team.

As with any voluntary reporting system, interpretation of data should be undertaken with caution as the data are subject to bias. Many incidents are not reported, and those that are reported may be incomplete having been reported immediately and before the patient outcome is known. Clarity of 'degree of harm' to patients who experience a patient safety incident is an important aspect of data quality.

## ANAESTHETIC EFORM

The anaesthetic eForm was designed to allow specific clinical information relating to anaesthetic incidents to be reported by anaesthetists and other members of the anaesthetic team, and can be found at: [www.eforms.nrls.nhs.uk/asbreport](http://www.eforms.nrls.nhs.uk/asbreport).

The RCoA and AAGBI continue to work with the NRLS team at Imperial and the patient safety function of NHS Improvement. SALG would like to reinforce that processes for sharing and learning incidents remain firmly in place. Staff are urged to continue to use the eForm (or your local reporting systems) to report patient safety incidents so that trends and incidents can be acted upon and learning maximised. The eForm is particularly useful as it provides a mechanism by which high quality information can be reported rapidly by members of the anaesthesia team and disseminated nationally.

## A CALL FOR SAFETY PROJECTS

The SALG website features a [Safety Project of the Month](#). This is space for members of the network and others to share projects that have contributed to patient safety or promoted the patient safety agenda in their hospitals. If you would like to submit a project for the website, please email [SALG@rcoa.ac.uk](mailto:SALG@rcoa.ac.uk)

Figure 1 – Degree of Harm (actual incidents)

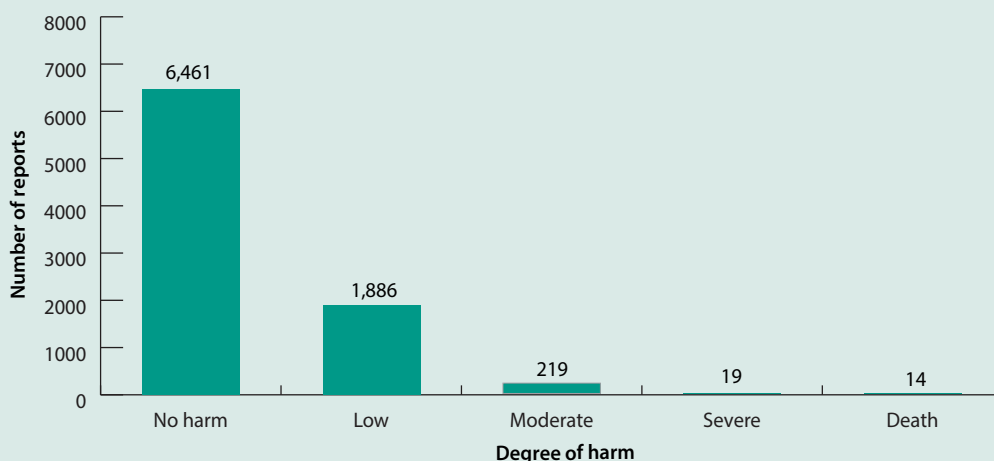


Figure 1 shows the degree of harm incurred by patients within the anaesthetic speciality during the period July–September 2016. 14 deaths were reported though LRMS and none via the anaesthetic eForm.

# INCIDENT DATA SUMMARY

July–September 2016

Figure 2 – Incident types

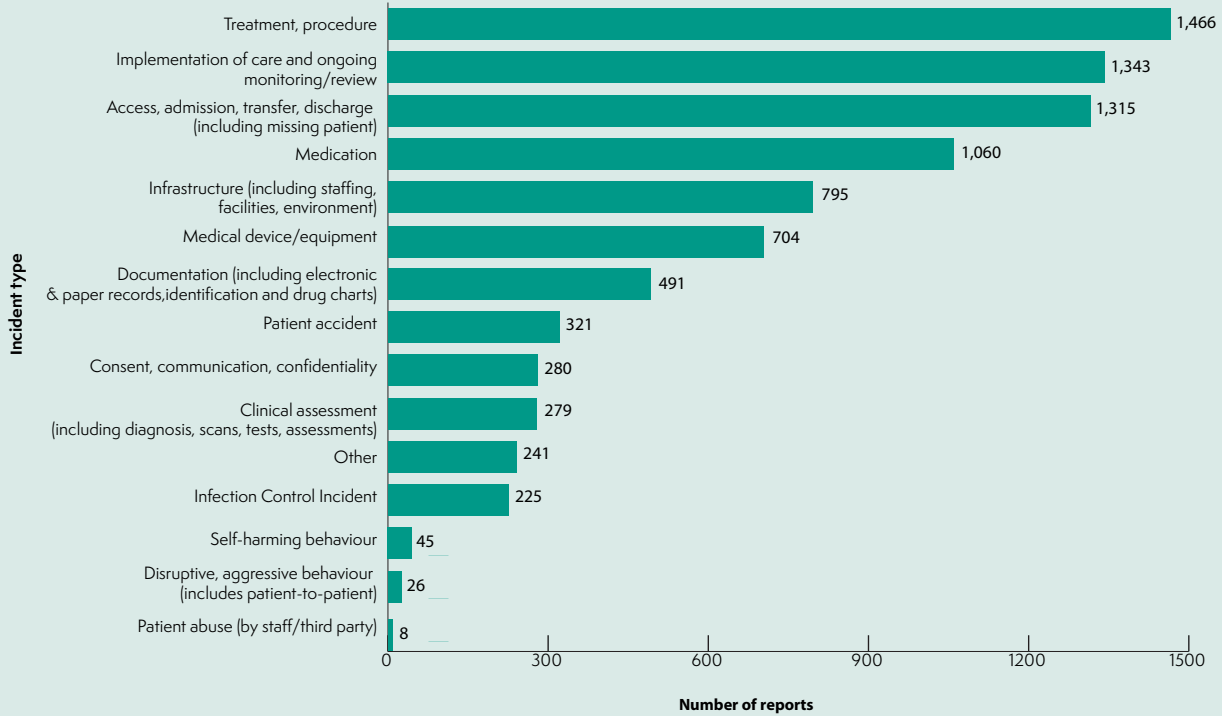


Figure 2 shows the type of incidents that occurred within the anaesthetic specialty that were reported using LRMS or the anaesthetic eForm for the period July– September 2016. The categories were determined at local level.

