RISK ALERT

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A Risk Management Newsletter for Hospital Authority Healthcare Professionals

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Risk Mitigation Strategy
Prescribing Parenteral Infusion

To achieve safety in prescribing parenteral medications, the following principles should be followed:

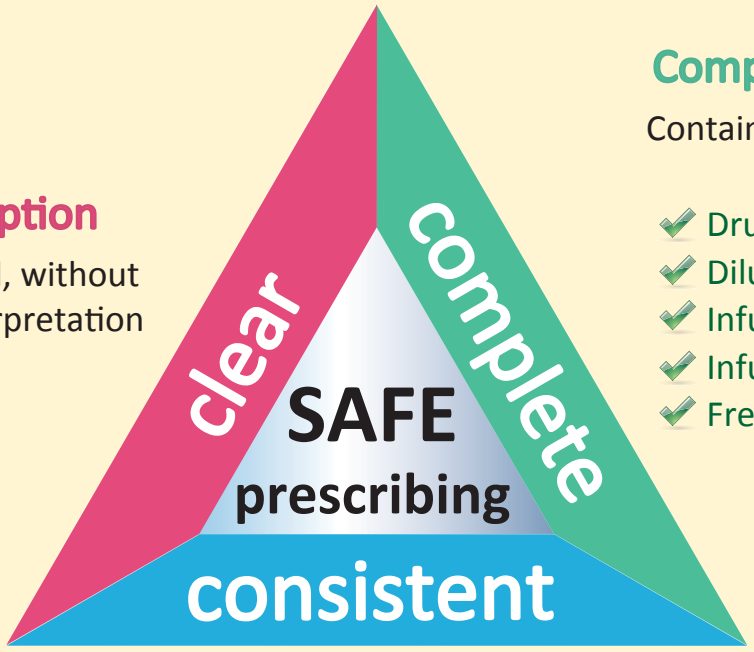
Spot the difference?

Azithromycin 500mg daily IV infusion in 500ml NS over 3h

Azithromycin 500mg IV infusion in 500ml NS q3h

Clear prescription

Easy to understand, without other possible interpretation



Complete prescription

Contain essential information for infusion

- ✔ Drug name and dose
- ✔ Diluent
- ✔ Infusion route
- ✔ Infusion rate
- ✔ Frequency

Consistent prescription

Develop standardised dilution table in hospital / cluster for reference

- ✔ Dilution method
- ✔ Compatible diluent(s)
- ✔ Common range of dosage
- ✔ Common range of infusion rate

From Response to Prevention

There were 12 SE cases reported in Q4 2016. Apart from responding by conducting root cause analysis and implementing improvement measures, SE cases are shared in this publication to raise alertness and promote mutual learning.

Despite the unique nature of many SE and SUE cases, they are often caused by multiple interplaying factors such as environment, system, equipment, knowledge, training and multi-disciplines. There are proven ways to address such causal factors. For example, we could reduce procedural risks by paying particular attention and care in following safety policies / protocols and adopting the principle of "**stop and think**" where applicable during every procedure. To prevent SE caused by miscommunication, the coherent effort of a multidisciplinary team in building up a speak up culture and effective handover is of paramount importance. We understand medical incidents (including SE and SUE) are not fully avoidable, however, the risk could be mitigated. It is our duty and goal to provide safe care to our patients and do no harms. Let's work towards the same patient safety goal.

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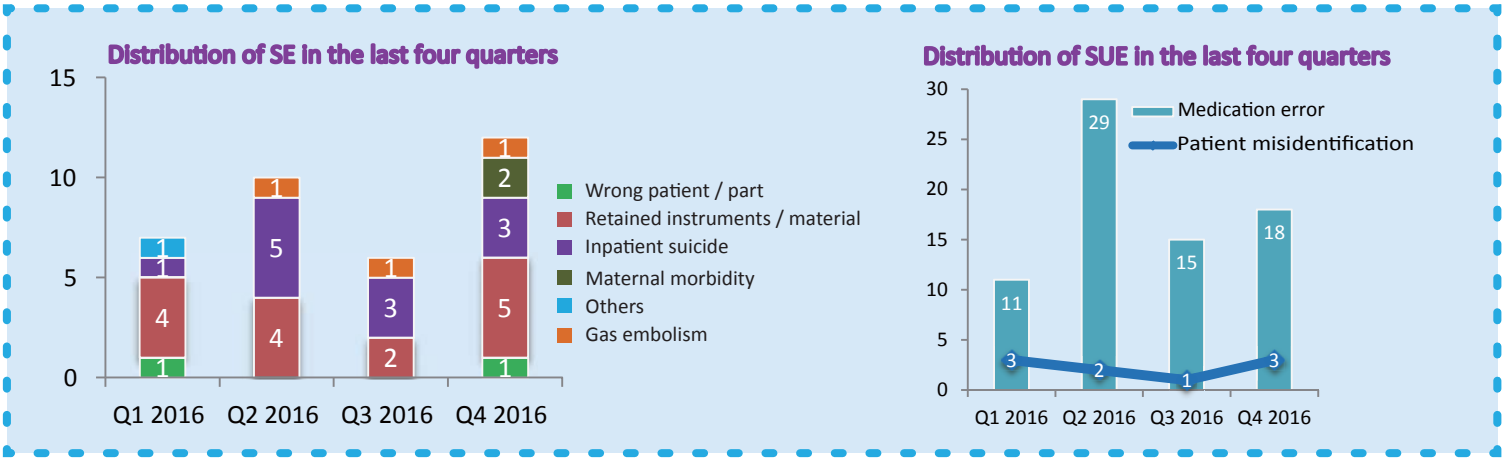
Deputizing Director (Quality & Safety)



Retained Instruments / Material

Guide wire

- A newborn baby was admitted for management of congenital cardiac abnormality.
- Doctor inserted a central venous catheter (CVC) at femoral vein with the assistance of 2 nurses.
- The procedure was uneventful. The CVC line could be flushed without resistance.
- After the procedure, doctor completed the safety checklist for guide wire.
- Post procedural X-ray revealed the retained guide wire in vein which was immediately removed at bedside.

Contributing factors:

1. Failure to follow guidelines for procedural safety.
2. Suboptimal communication among staff.

Recommendations:

1. Perform the procedure properly in accordance with standard practice.
2. Implement the procedural safety checklist strictly.
3. Conduct handover properly.

Sterilization indicator in vagina

- A patient underwent RIGHT salpingo-oophorectomy.
- Urinary catheterization and vaginal washing were performed preoperatively. The operation was uneventful.
- One day after discharge, patient removed a piece of "paper foil" from her vagina.
- Surgeon examined the foreign body which was most likely to be the sterilization indicator.
- Vaginal and ultrasound examination revealed no abnormality.

Contributing factors:

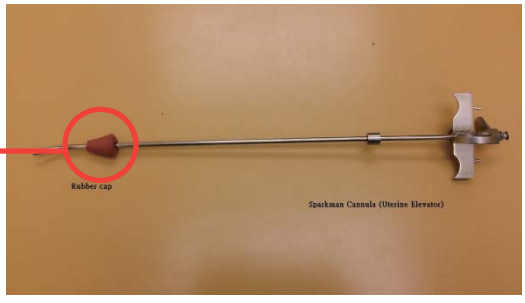
1. Unclear role delineation among nurses in checking and discarding the sterilization indicator.
2. The indicator, being small in size, could easily adhere to a pile of gauze without being noticed.

Recommendations:

1. Clarify the role delineation of nurses in checking instruments and sterilization indicator.
2. Ensure that scrub nurse and circulating nurse should be responsible to check the sterility of instruments and remove the sterilization indicator from all sterile fields after checking.

Rubber cap of intra-uterine cannula

- A patient was admitted for a gynaecological operation. Separate instrument trays for abdominal and vaginal procedures were prepared by scrub nurse.
- During final instrument counting, count for abdominal part was completed first. For vaginal part, "intra-uterine cannula" was still placed inside patient's vagina.
- The circulating nurse then handled the patient's specimen after counting the instruments for abdominal part. The cannula was subsequently removed by doctor after finishing the operation.
- Patient's anaesthesia was reversed before completion of final instrument counting.
- Scrub nurse found a rubber cap of "intra-uterine cannula" missing during final checking of instruments for vaginal part immediately after the patient was transferred to recovery room.
- The rubber cap was retrieved from patient's vagina by surgeon in the recovery room.



Contributing factor:

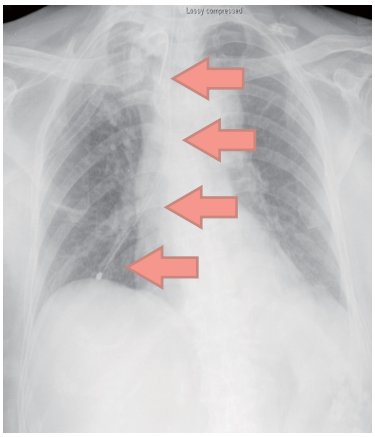
Suboptimal communication among team members in verifying completeness of instrument counting.

Recommendations:

1. Enhance communication and speak up culture among team members, including completion of final instrument count before reversal of anaesthesia.
2. Share the incident among team members and raise their alertness to instruments with potential risk of loosening during operation.

Sentinel Events

Broken nasogastric (NG) tube



- A patient had a temporary tracheostomy and was on long term NG tube feeding. During the insertion of a new NG tube, the patient had choking and shortness of breath and the tube was removed without checking its integrity immediately.
- Urgent chest X-ray (CXR) revealed that a tube was suspected to be retained in the RIGHT bronchus.
- Doctor was informed, who ordered to keep observing the patient overnight in view of stable condition.
- In the next morning, a nurse examined the NG tube and suspected it to be broken.
- Emergency rigid bronchoscopy was performed. A 23cm long NG tube segment was retrieved completely.

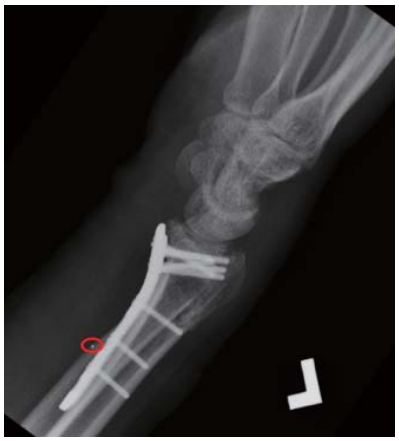
Contributing factors:

1. Failure to check the integrity of the NG tube immediately after the failed NG tube insertion attempt.
2. Low alertness to the risk of broken and retained NG tube in patient's airway.
3. Improper practice of medical documentation.
4. Failure to escalate communication to senior staff about the patient's problem.
5. Ineffective transfer of critical information during handover.

Recommendations:

1. Ensure strict compliance with checking the integrity of NG tube before insertion and after removal.
2. Increase staff alertness on the risk of broken and retained NG tube in patient's airway to ensure timely management of possible retention.
3. Reinforce proper practice of clinical documentation to facilitate patient management and transfer of clinical information.
4. Reinforce the transfer of critical information during handover among nurses and doctors and timely escalation of communication to senior staff when in doubt or problems occur.

Radiopaque fragment in LEFT wrist



- A patient had fracture radius and underwent an uneventful operation.
- Intraoperative fluoroscopy before wound closure did not reveal any foreign body.
- Patient was discharged. Follow up X-ray 7 weeks later found a tiny (0.6mm) metallic foreign body.
- Patient preferred no further operation.

Contributing factor:

Failure to check for completeness of used accountable items.

Recommendations:

1. Enhance awareness on the potential risk of breakage of surgical instruments.
2. Develop measures to alert and facilitate staff to perform integrity check of surgical instruments during counting process.

Wrong Patient / Part

Removal of wrong side double J (JJ) stent

- A patient who had obstructive uropathy with bilateral JJ stent inserted was scheduled for removal of **LEFT** JJ stent.
- On the day of procedure, doctor C explained the procedure to the patient. The patient signed on the consent form without the procedure name "removal of **LEFT** JJ stent".
- Pre-procedural safety check was performed by nurse and doctor A independently. Doctor A checked and signed on the consent form.
- During cystoscopy, doctor A removed the **RIGHT** JJ stent instead of **LEFT** JJ stent.
- The incident was discovered 2 months later while patient underwent cystoscopy intended for removal of **RIGHT** JJ stent.

Contributing factors:

1. Failure to comply with the Standard Operating Procedure on "Obtaining Written Informed Consent for Medical Treatment / Procedure".
2. Non-compliance with the Hospital Authority Interventional Procedure Safety Policy.

Recommendations:

1. Revise the workflow of obtaining informed consent.
2. Ensure the side is correct upon removal of stent.
3. Ensure the pre-interventional safety check is done properly.

Gas Embolism

Air embolism after percutaneous coronary intervention (PCI)

- A patient had past history of stroke was admitted for acute myocardial infarction. Urgent PCI was performed.
- The procedure was complicated by air embolism of RIGHT coronary artery and the patient developed cardiac arrest soon afterwards. The patient regained spontaneous circulation after 20 minutes of resuscitation. PCI was completed and coronary angiogram at the end of the procedure showed no residual gas in coronary arteries.
- Patient's blood pressure was persistently low. The patient received Extracorporeal Membrane Oxygenation (ECMO) for life support and was transferred to Intensive Care Unit (ICU) for further management.
- Cardiothoracic team inserted a Left Ventricular Assist Device (LVAD) to support his heart function. Computed tomography scan of the brain showed evidence of stroke.

The RCA panel identified the following:

1. Before the PCI procedure, the aortic pressure waveform tracing could not be displayed on the monitor as usual. As the patient was in critical situation, the problem was not verified before the contrast injection.
2. Source of air embolism could not be identified and there was no evidence of equipment failure.

Recommendation:

Disengage the whole procedure if no pressure tracing is noted and clarify the problem before proceeding with PCI.

Inpatient Suicide

In Q4 2016, a total of 3 patients with history of psychiatric illness (2 male and 1 female aged between 27 and 83) committed suicide. Of the two inpatients, one committed suicide by suffocation with a plastic bag and the other by hanging in patient's toilet. The home leave patient jumped from height.

Outlines of the 2 inpatient suicide cases are as follow:-

Suffocation with a plastic bag

- A patient with history of alcoholic hallucinosis was admitted because of confusion.
- After treatment, patient was transferred to convalescent hospital due to placement problem.
- Patient committed suicide by suffocating himself with a plastic bag early next morning.

Hanging in patient's toilet

- A patient with history of anxiety neurosis and abnormal CXR shadow attended Accident and Emergency Department for unstable emotion and suicidal ideation.
- A psychiatric liaison nurse (PLN) interviewed the patient and psychiatric admission was suggested.
- The patient was admitted to Emergency Medical Ward and was assigned to an observation bed near to the nursing station.
- The patient attempted to escape from the ward early next morning.
- During visiting hour, relatives visited the patient and agreed with the psychiatric assessment. Psychiatric team was consulted.
- Later, the patient was found hanging in the toilet on the cross rail. The patient was rescued and resuscitated.
- The patient was transferred to ICU but died 8 days later.

Key contributing factors:

1. Unclear classification on different levels of suicidal risk, leading to difficulty in applying corresponding interventions and precautions effectively.
2. The message of a prompt follow up action was not communicated to the frontline clearly.
3. Enhancement work to eliminate the environmental risk of inpatient suicide was not completed timely.
4. Difficulty in detection of suicidal risk through patient's presentation.

Recommendations:

1. Consider stratifying patients with suicidal risk into categories and apply appropriate interventions and precautions.
2. Consider seeking early Psychiatrist's input once a "high suicidal risk" patient is identified by PLN.
3. Consider using emotion assessment record to assess and record patient's emotional status.
4. Speed up the process of eliminating identified environmental inpatient suicide risk.
5. Implement suicidal precaution measures upon detection of suicidal ideation regardless of the time frame.
6. Reinforce verbal handover and speak up of suicidal risk between parties involved in the patient care in addition to documentation of such risk.

Maternal Morbidity

Case 1

- The patient was admitted for induction of labour at 37-week pregnancy due to suspected pre-eclampsia.
- Shortly after delivery, the patient developed post-partum haemorrhage (PPH) which was complicated by Disseminated Intravascular Coagulation (DIC), resulting in uncontrolled bleeding.
- The placenta was visually checked and believed to be "complete". Further ultrasound examination did not reveal retained product of gestation.
- Patient's condition further deteriorated and patient required resuscitation at the same night.
- Doctor arranged blood transfusion, multiple doses of coagulant medications and insertion of intra-uterine balloon. Patient underwent several emergency procedures to control bleeding.
- Patient suffered from multiple organ failure and succumbed 3 days later.

The RCA panel identified the following:

1. The early signs of shock due to PPH were not recognized promptly.
2. The initial response to various uterotonics (agents used to induce contraction of the uterus) and intra-uterine balloon gave false assurance to the clinical team that the PPH was under control.
3. The initial findings of "complete" placenta after delivery led the clinical team into focusing on the management of uterine atony above other diagnosis.

Recommendations:

1. Review and revise the management protocol for PPH, including timely reassessment of patients after placement of intra-uterine balloon and timely revisit of differential diagnoses of PPH if the response to treatment is not optimal.
2. Reinforce staff training on the early recognition and management of PPH.
3. Monitor team performance on PPH management by conducting regular drills with debriefings.

Case 2

- The patient was admitted for show at 38-week pregnancy.
- Fetal deceleration was diagnosed and induction of labour was initiated.
- Shortly after delivery, the patient had PPH and low blood pressure. Doctors conducted emergency treatment including blood transfusion and emergency hysterectomy.
- Patient's PPH was complicated by DIC. Patient suffered from cardiac arrest during operation.
- Patient's condition further deteriorated and she passed away 2 days later.

The RCA panel identified the following:

1. Patient might have suffered not only from blood loss but also some other co-existing diseases.
2. The clinical team provided a thorough and appropriate management for the working diagnosis to rule out other causes of PPH. They did not involve the senior doctors and other specialties early when the patient became critically ill.
3. Retrospectively, in view of the seriousness and rapidly deteriorating medical condition, the outcome of the patient might not be different irrespective of medical treatment given.

Recommendations:

1. Share the lesson learned with involved departments to facilitate multidisciplinary management of critically ill patients.
2. Reinforce staff training on identification and management of critically ill patients.
3. Review and revise the protocol on emergency management of critically ill patients.
4. Evaluate and monitor team performance by conducting regular drills with debriefings.

Serious Untoward Events

Of the 21 SUE cases reported in Q4 2016, 18 were medication error and 3 were patient misidentification. The medication error cases involved giving known drug allergen to patients (5), dangerous drug (3), inotropes (2), oral hypoglycaemic agent (2), anticoagulant (1), electrolyte (1), sedative drugs (1), and others (3).

Of the 5 known drug allergen cases, 2 developed mild symptoms which subsided after treatment. The other had no allergic reaction.

Known allergy	Allergen prescribed
NSAID	Aspirin
Chloramphenicol	Chloramphenicol eye drop
Gabapentin	Gabapentin
Paracetamol	Paracetamol
Tramadol	Tramadol

Medication Error

Wrong dose of fetanyl patch (Durogesic®) was given

- Fentanyl patch 12mcg/hour every 3 days was prescribed for management of cancer pain.
- The fentanyl patch was due for change and nurses checked the drug from dangerous drug cupboard.
- Nurse inadvertently checked out fentanyl patch 25mcg/hour and administered to patient.
- The incident was discovered due to discrepancy between ledger and actual quantity.

Separate the storage of "look-alike, sound-alike" drugs

Patient Misidentification

Mixing up patients' sample during preparation of smears in laboratory

- Pleural fluid specimen of patient X was sent to laboratory for preparation of Smear A and Cell Block B.
- 6 days later, pleural fluid specimen of patient X was collected again for cytology examination. Smear C was prepared.
- Discrepancy in results was found: Malignant cells were **present** in Smear A but **negative** in Cell Block B and Smear C.
- Mixing up of specimen during preparation in the laboratory was confirmed by microsatellite tests. Smear A came from another patient's peritoneal fluid.
- Clinical management of both patients was not affected.

Reinforce compliance with the "Smear Preparation of Standard Operation Procedure", especially on procedure of specimen identification

Suggestions or feedback are most welcome. Please email us through HA intranet at address: HO Patient Safety & Risk Management