ANNUAL REPORT ON SENTINEL AND SERIOUS UNTOWARD EVENTS

October 2016 – September 2017

HOSPITAL AUTHORITY
HONG KONG

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醫院管理局
HOSPITAL AUTHORITY

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Acknowledgement

This 10th Annual Report on Sentinel and Serious Untoward Events manifests Hospital Authority's (HA) ongoing efforts in the improvement of patient safety and delivery of quality healthcare. Since the implementation of Advance Incident Reporting System (AIRS) twelve years ago, root causes of incidents were analysed and lessons learnt were shared for continuous learning. Our colleagues have also been striving at formulating patient safety precautions and enhancing staff awareness to minimize the happening of similar events. Their hard work and dedication is well-appreciated.

We are pleased to extend our sincere gratitude to all colleagues who have participated in reporting and investigating incidents as well as providing invaluable advice and recommendations on quality and safety for the betterment of our healthcare system in the best interest of our patients, staff and community.

Patient Safety and Risk Management Department
Quality and Safety Division

Contents

Executive Summary

1. This annual report summarised all Sentinel Events (SE) and Serious Untoward Events (SUE), comprising 40 SE and 69 SUE, reported between October 2016 and September 2017. Compared with the last reporting period, there was an increase in SE from 32 to 40 and a decrease in SUE from 86 to 69.

Sentinel Events

2. The 40 reported SE represented an incident rate of 1.9 per 1,000,000 episodes of patient attendances / discharges and deaths. Of these SE, 37 occurred in acute general hospitals with 24-hour Accident and Emergency (A&E) services.

3. The top three categories of SE were *retained instruments or other material after surgery / interventional procedure* (19 cases); *death of an inpatient from suicide (including home leave)* (8 cases) and *surgery / interventional procedure involving the wrong patient or body part* (6 cases).

4. Of the 19 *retained instruments or other material after surgery / interventional procedure* cases, 10 involved broken instruments / material and the other 9 were incorrect counting of instruments / material.

5. Of the 8 cases of *death of an inpatient from suicide (including home leave)*, 2 were inpatients, 3 were patients on home leave and 3 were missing patients. The overall assessment and management of these 8 cases was determined to be appropriate by investigation panel.

6. The 8 reported cases of *death of an inpatient from suicide (including home leave)* represented a suicide rate of 0.7 per 100,000 inpatient admissions. In comparison, the reported estimated inpatient suicide rates in general hospitals of the United States ranged from 5 to 15 per 100,000 admissions.

7. Of the 6 cases of *surgery / interventional procedure involving the wrong*

body part, 4 occurred in operating theatre and 2 occurred in interventional suite.

8. Other reported SE were *maternal death or serious morbidity associated with labour or delivery* (3 cases), *intravascular gas embolism resulting in death or neurological damage* (2 cases), *ABO incompatibility blood transfusion* (1 case) and *infant discharged to wrong family or infant abduction* (1 case).

9. Among the 40 SE, 11 (comprising 8 cases of *death of an inpatient from suicide (including home leave)* and 3 cases of *maternal death or serious morbidity associated with labour or delivery*) resulted in mortality.

10. Of the remaining SE, 1 had extreme consequence, 6 had major / moderate consequence and 22 had minor / insignificant consequence.

11. The major contributing factors of SE were grouped into communication, knowledge / skills, work environment / scheduling, use of equipment and policies / procedures / guidelines. Recommendations were made to address these factors.

Serious Untoward Events

12. Of the 69 SUE which could have led to death or permanent harm, 61 were *medication error* and 8 were *patient misidentification*.

13. The three most common *medication error cases* were prescription of *known drug allergen* (24 cases), involving *dangerous drug* (6 cases) and *insulin* (5 cases). Of all the *known drug allergen* cases, 8 were *related to Penicillin* which was the most commonly involved drug.

14. Of the 69 SUE, 7 had temporary major consequence, 8 had moderate consequence and 54 had minor / insignificant consequence.

Introduction

15. The Sentinel Event (SE) Policy was implemented in 2007, while the element of Serious Untoward Event (SUE) was incorporated later in 2010. After implementation of Sentinel and Serious Untoward Event Policy (The Policy) in 2010, the Policy was updated in July 2015 (Annex I) with inclusion of supplementary notes on definitions and qualification criteria of SE as well as new Chinese translations of SE and SUE.

16. The Policy dictates hospitals to report SE and SUE and set up root cause analysis (RCA) panels. The RCA panels are tasked to review and identify the root cause(s) and to make recommendations for hospital and Hospital Authority Head Office (HAHO) management to improve patient safety.

17. This tenth annual report summarised and analysed the SE and SUE reported via the Advance Incident Reporting System (AIRS) between October 2016 and September 2017 (4Q16 - 3Q17). The aim of publishing this Annual Report is to share the lessons learnt from SE and SUE with a view to improving quality patient-centred care through teamwork.

18. To facilitate understanding on the scope and definition of SE and SUE, the following abbreviated captions for various SE and SUE categories, highlighted in blue, will be used in this report:

Sentinel Events (9 Categories)

Category 1	Surgery / interventional procedure involving the wrong patient or body part [Wrong patient / part]
Category 2	Retained instruments or other material after surgery / interventional procedure [Retained instruments / material]
Category 3	ABO incompatibility blood transfusion [Blood incompatibility]

Category 4 Medication error resulting in major permanent loss of function or death
[Medication error]

Category 5 Intravascular gas embolism resulting in death or neurological damage
[Gas embolism]

Category 6 Death of an inpatient from suicide (including home leave)
[Inpatient suicide]

Category 7 Maternal death or serious morbidity associated with labour or delivery
[Maternal morbidity]

Category 8 Infant discharged to wrong family or infant abduction
[Wrong infant / abduction]

Category 9 Other adverse events resulting in permanent loss of function or death (excluding complications)
[Others]

Serious Untoward Events (2 Categories)

Category 1 Medication error which could have led to death or permanent harm
[Medication error]

Category 2 Patient misidentification which could have led to death or permanent harm
[Patient misidentification]

Sentinel Events Statistics

Yearly Trend

19. Since the implementation of the Policy in October 2007, there were 381 SE reported to date. Figure 1 shows the yearly distribution of SE by category, with the total number of cases for each year and for the top three / two categories of the year indicated.

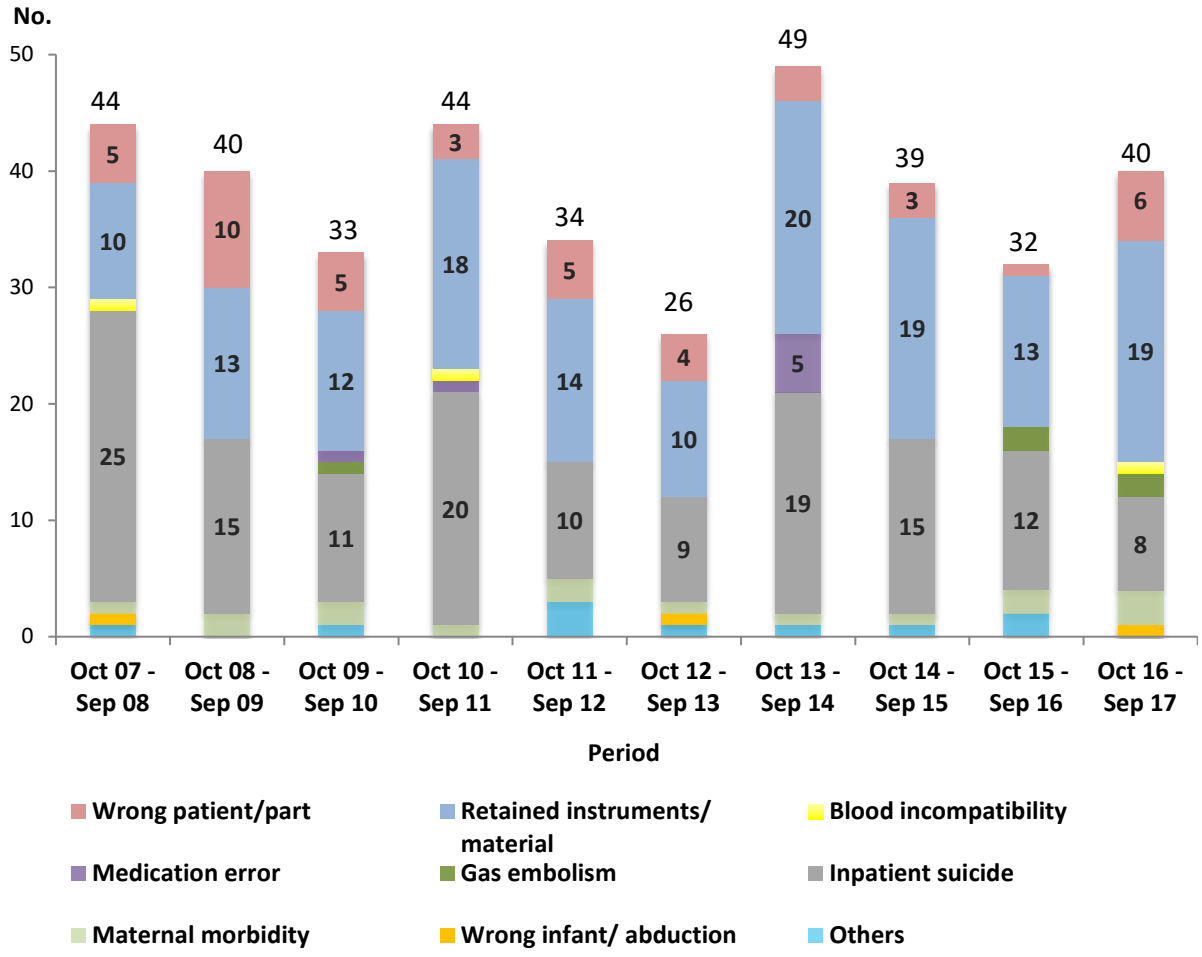


Figure 1: Yearly distribution of SE by category

20. From 2007 to 2017, the annual number of episodes of patient attendances / discharges and deaths had increased from approximately 16 million to 21

million. The SE incident rate per 1,000,000 episodes of patient attendances / discharges and deaths was 1.9 (Figure 2).

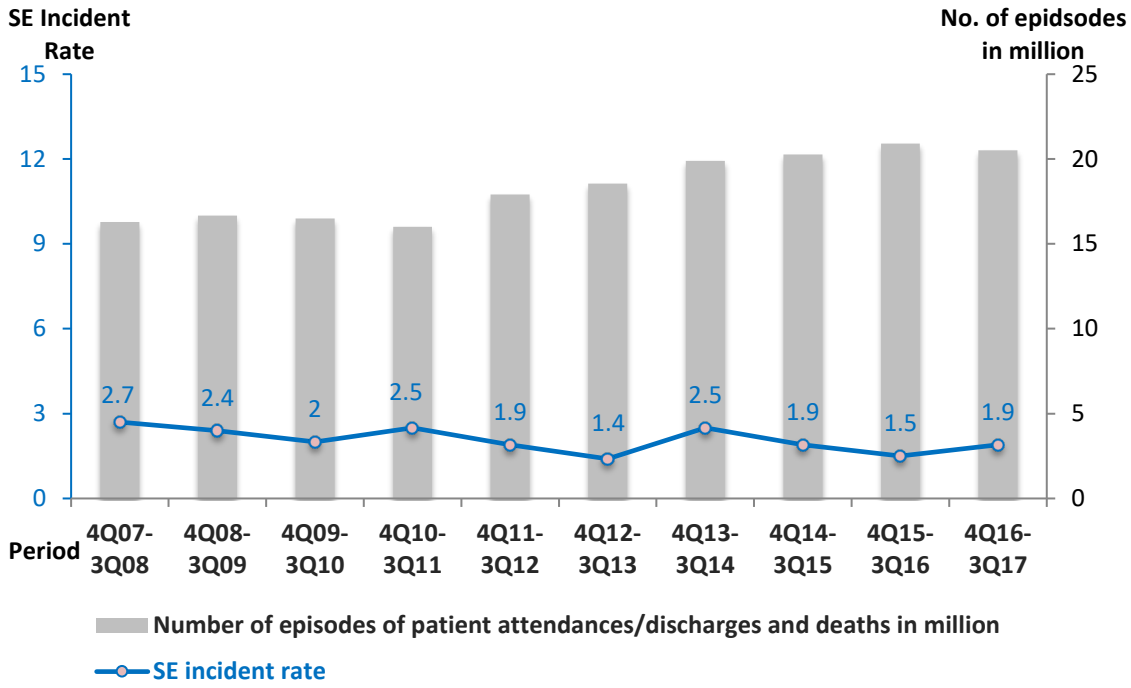


Figure 2: Yearly SE incident rates per million episodes of patient attendances/ discharges and deaths

21. The yearly trend of top three SE and their accumulated figures are depicted in Figure 3 and Table 1 respectively. *Retained instruments / material* (148 cases), *inpatient suicide* (144 cases) and *wrong patient / part* (45 cases) constituted most of the SE reported.

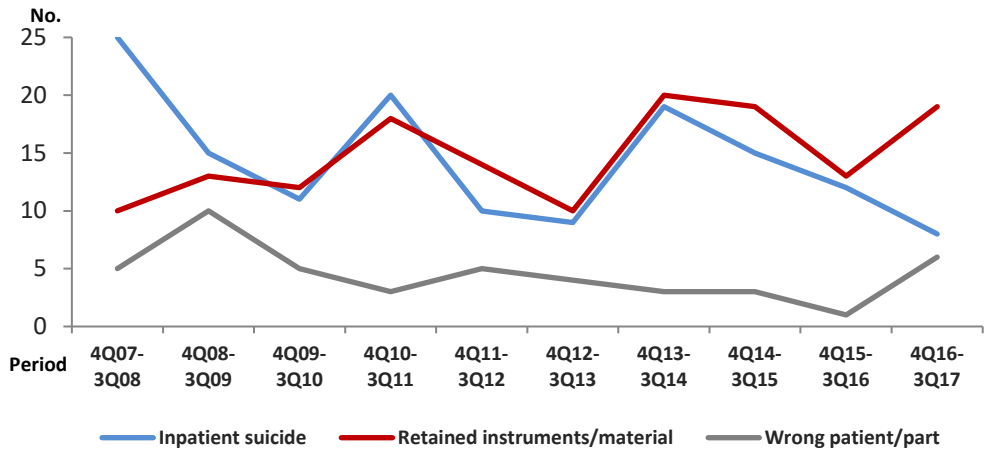


Figure 3: Yearly trend of top three SE

Category	4Q07-3Q08	4Q08-3Q09	4Q09-3Q10	4Q10-3Q11	4Q11-3Q12	4Q12-3Q13	4Q13-3Q14	4Q14-3Q15	4Q15-3Q16	4Q16-3Q17	Total
Retained instruments/ material	10	13	12	18	14	10	20	19	13	19	**148**
Inpatient suicide	25	15	11	20	10	9	19	15	12	8	**144**
Wrong patient/part	5	10	5	3	5	4	3	3	1	6	**45**
Maternal morbidity	1	2	2	1	2	1	1	1	2	3	**16**
Medication error	0	0	1	1	0	0	5	0	0	0	**7**
Gas embolism	0	0	1	0	0	0	0	0	2	2	**5**
Wrong infant/ abduction	1	0	0	0	0	1	0	0	0	1	**3**
Blood incompatibility	1	0	0	1	0	0	0	0	0	1	**3**
Others	1	0	1	0	3	1	1	1	2	0	**10**
Total	**44**	**40**	**33**	**44**	**34**	**26**	**49**	**39**	**32**	**40**	**381**

Table 1: Number of SE by category

22. Throughout the years, *retained instruments / material; inpatient suicide (including home leave)* and *wrong patient / part* had remained the three top most frequently reported SE. According to the Policy, incidents of home leave patients committed suicide are classified as SE.

23. Of all 381 SE reported since October 2007, 134 cases had minor or insignificant consequences (i.e. no injury sustained / minor injury), 68 sustained major / moderate consequences (i.e. temporary / significant morbidity) and 179 led to extreme consequences (i.e. major permanent loss of function / disability or

death) (Figure 4). Out of the 179 cases leading to extreme consequences, 144 were due to *inpatient suicide*. A description of the consequences is illustrated in Annex II.

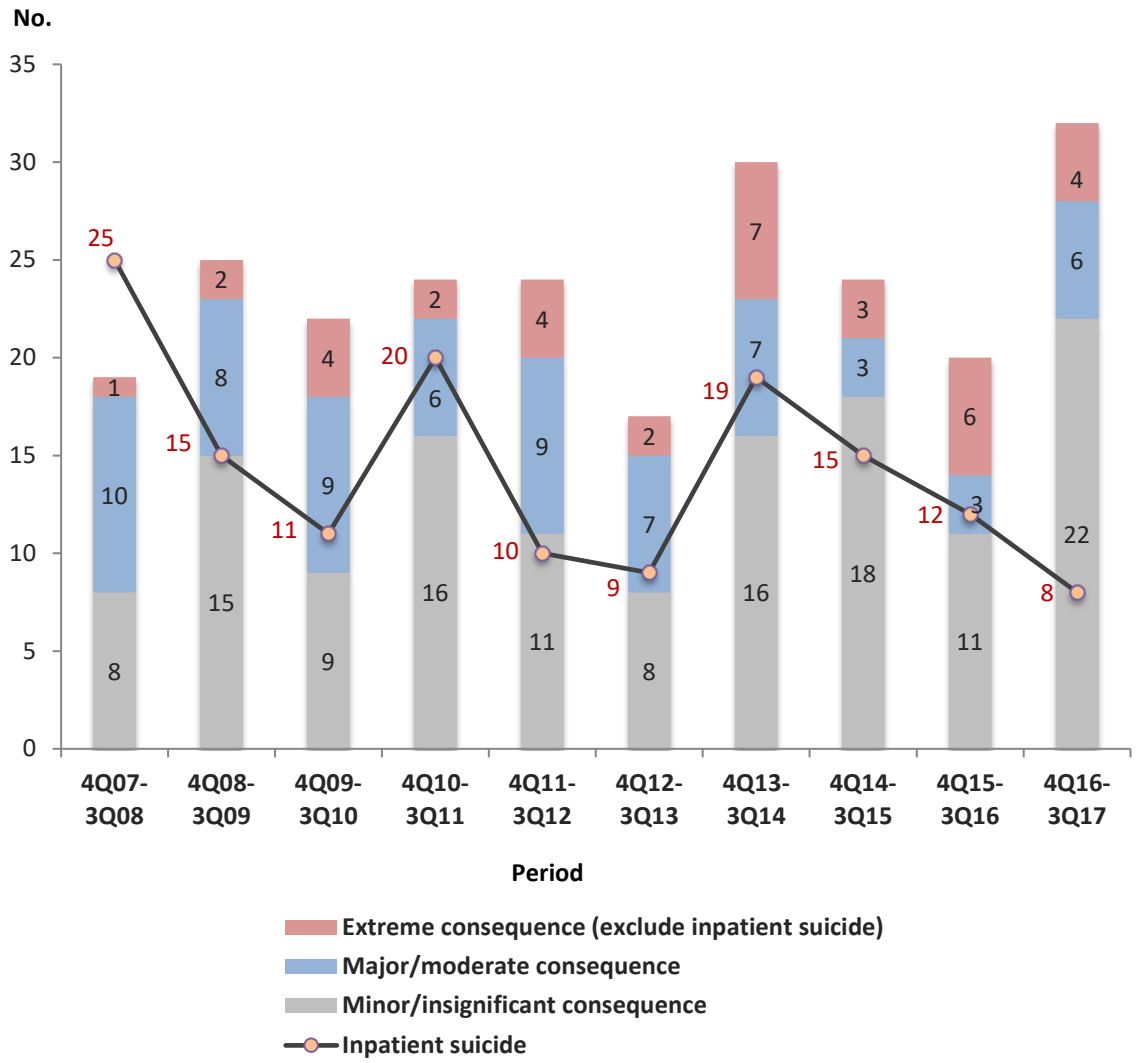


Figure 4: Yearly outcome of SE

SE Reported in 4Q16 – 3Q17

24. The distribution of the 40 reported SE in 4Q16 – 3Q17 by category is shown in Figure 5. The three most commonly reported categories were *retained instruments / material* (19 cases); *inpatient suicide* (8 cases) and *wrong patient / part* (6 cases).

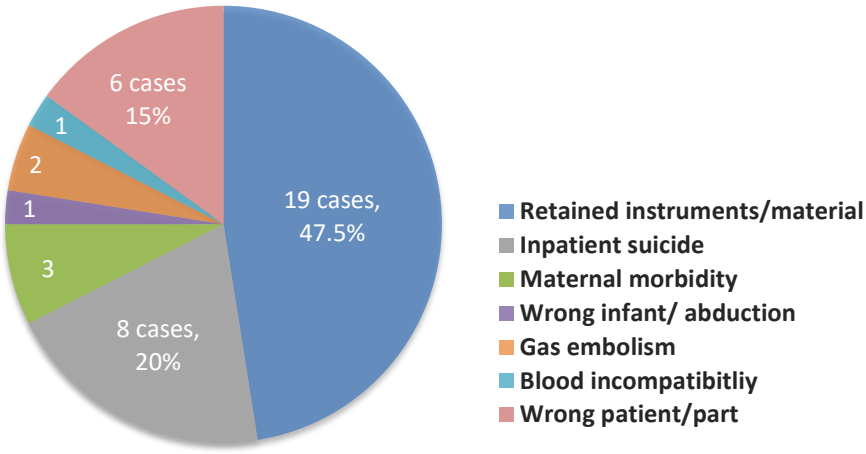


Figure 5: Distribution of SE by category

25. There was no substantial variation in the number of SE amongst the quarters except for 1Q17 of the reporting period. The quarterly distribution of 40 reported SE is illustrated in Figure 6.

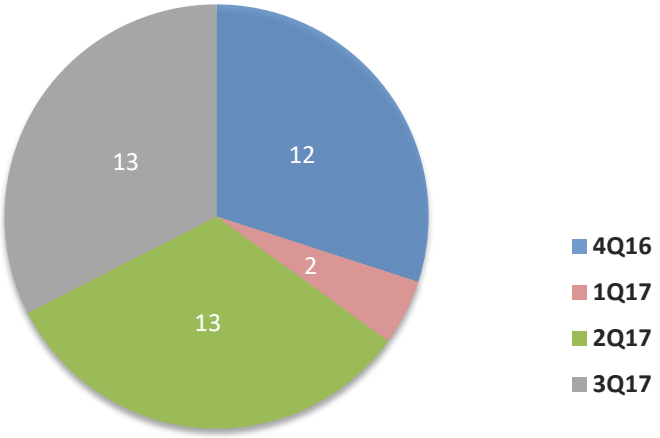


Figure 6: Quarterly distribution of SE

26. The following table shows the distribution of SE in different hospital settings:

Hospital Setting	Number of SE	Percentage
Acute general hospitals with 24-hour accident and emergency (A&E) services	37	92.5%
Hospitals with a mix of acute and non-acute services	1	2.5%
Hospitals with a mix of acute and non-acute services and psychiatric service	1	2.5%
Acute hospitals of special nature	1	2.5%

Table 2: Distribution of SE by hospital setting

27. Among the 40 SE cases, 11 (comprising 8 *inpatient suicide*, 3 *maternal morbidity*) had resulted in mortality. For the remaining SE cases, 1 had extreme consequences, 6 had major / moderate consequences and 22 had minor / insignificant consequences (Figure 7).

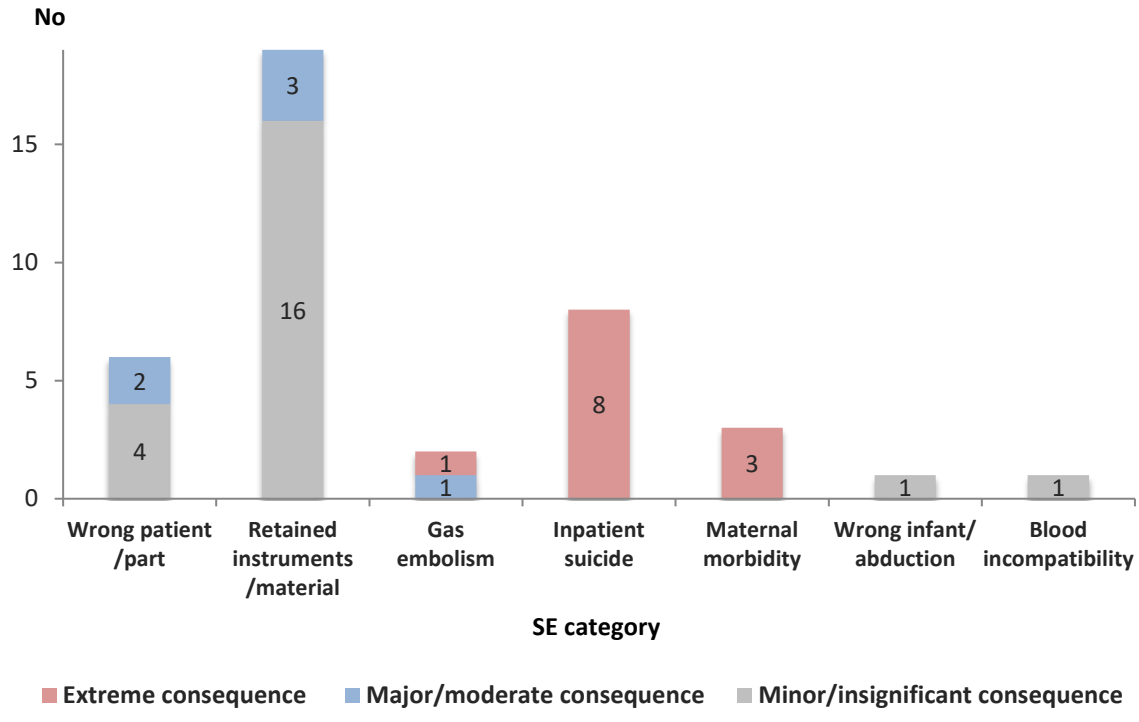


Figure 7: Outcome of SE by category

Retained instruments / material

28. Out of the 19 SE cases of *retained instruments / material*, 10 were broken instruments / material cases and the other 9 were incorrect counting of instruments / material cases. Their quarterly distribution is shown in Figure 8.

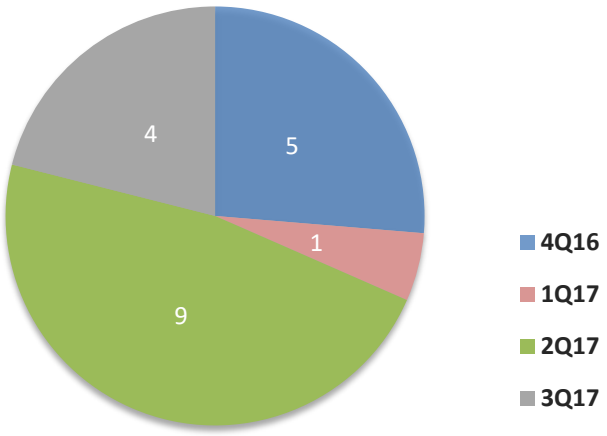


Figure 8: Quarterly distribution of retained instruments/material

29. The distribution of the nature of the 9 incorrect counting of instruments / material cases is shown in Figure 9.

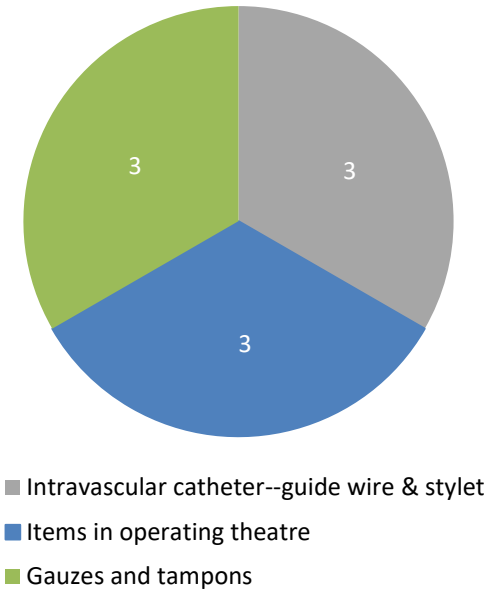


Figure 9: Nature of incorrect counting of instruments / material

Inpatient suicide

30. Figures 10 - 14 show the distribution of the 8 *inpatient suicide* cases by different categories during the reporting period.

31. Of the 8 *inpatient suicide* cases, 7 patients had malignancies or chronic disease and one patient had psychiatric illness. The 2 inpatients committed suicide either by hanging or suffocation. The other 6 patients, who were either on home leave or missing, committed suicide by jumping from height or hanging. The inpatient suicide incident rate for the reporting period was 0.7 per 100,000 inpatient admissions.

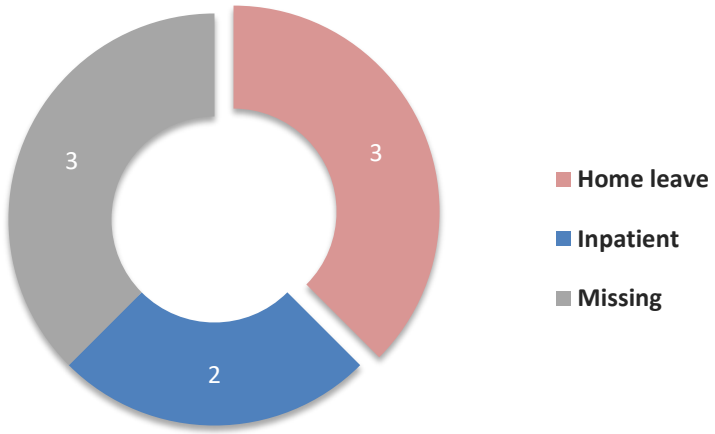


Figure 10: Location

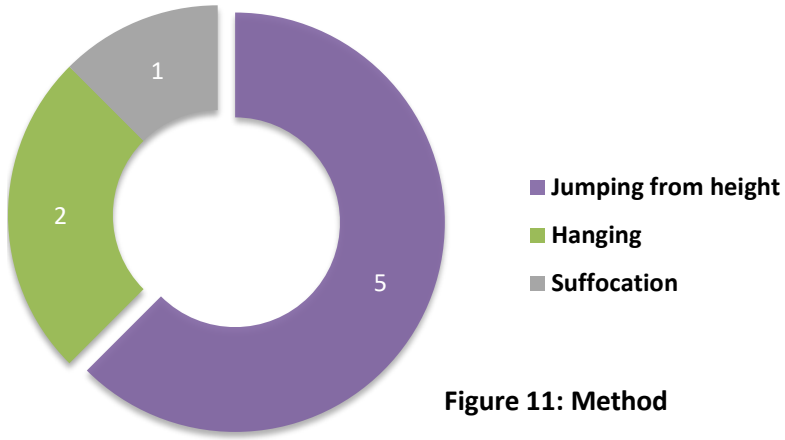


Figure 11: Method

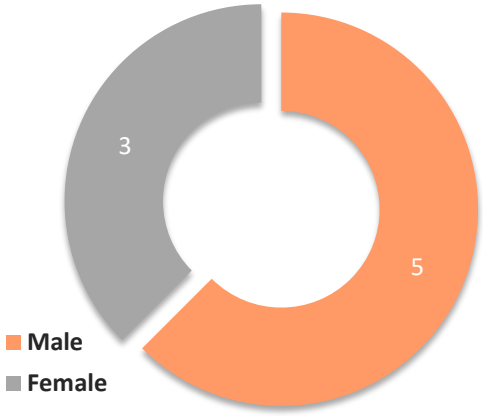


Figure 12: Gender

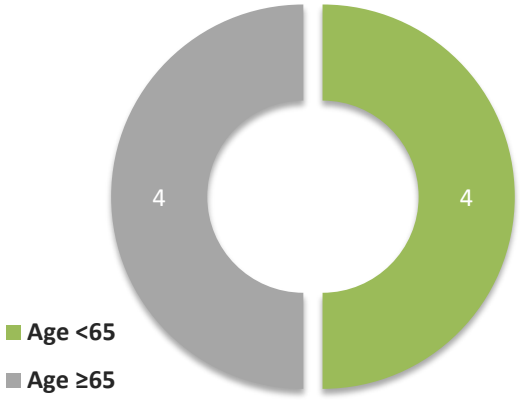


Figure 13: Age

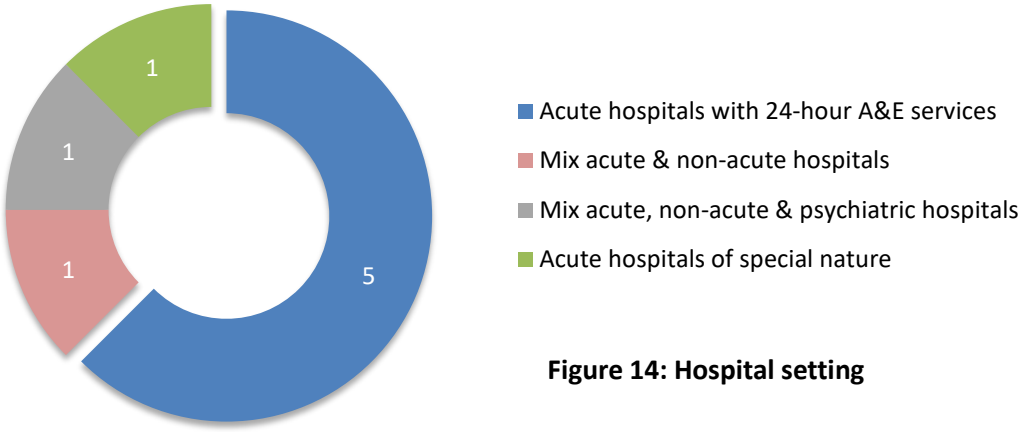


Figure 14: Hospital setting

Wrong patient / part

32. Of the 6 cases of *surgery / interventional procedure involving the wrong body part,* 4 occurred in operating theatre and 2 occurred in interventional suite. The distribution of the cause involving *wrong patient / part* is depicted in Figure 15.

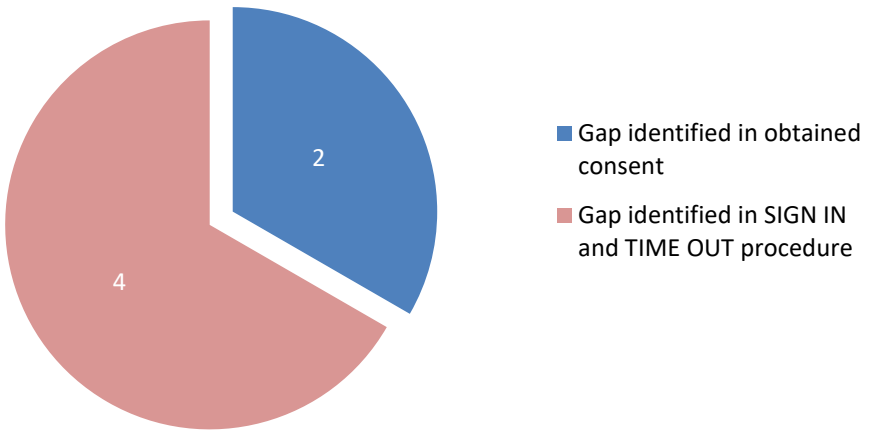


Figure 15: Cause involving wrong patient/ part

International Sentinel Event Reporting

33. In the United States, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) reviewed 824 SE cases in 2016 and 400 from January to June 2017.[1] The high number might be due to its much broader definition of SE. Australia, on the other hand, adopted a very similar definition of SE as HA. The number of reported SE recorded by Victoria, Australia (DH Victoria) was 42 in 2014 – 2015 and the Department of Health, State Government of Western Australia (DH Western Australia) was 14 in 2015 – 2016.[2,3] Notwithstanding their low figures, the relative SE incident rates in DH Victoria and DH Western Australia were 26.3 and 24.9 per 1,000,000 inpatient episodes of care respectively.[4,5]

34. Compared with the Australian data, HA had a relatively low SE incident rate of 1.9 per 1,000,000 episodes of patient attendances / discharges and deaths (Table 3).

	HA, Hong Kong (4Q16 – 3Q17)	DH Victoria, Australia (3Q14 – 2Q15)[4]	DH Western Australia, Australia (3Q15 – 2Q16)[5]
Number of SE / 1,000,000 patient episodes	1.9	26.3	24.9

Table 3: SE incident rates in HA, DH Western Australia and DH Victoria

35. Table 4 listed the most common types of SE reported in HA as compared with DH Victoria and DH Western Australia. Similar to HA, "inpatient suicide"

[1] The US Joint Commission, Summary Data of Sentinel Events Reviewed by The Joint Commission: as of July 11, 2017.

[2] Supporting Patient Safety – Sentinel Event Program triennial report 2013 to 2016. Safer Care Victoria, State Government of Victoria, Australia

[3] Your Safety in our Hands in Hospital - An Integrated Approach to Patient Safety Surveillance in WA Hospitals, Health Services and the Community: 2016. Department of Health, State Government of Western Australia, Australia.

[4] Safer Care Victoria, State Government of Victoria, Australia recorded approximately 1.6 million separations in 2014-2015 *(The latest figure in Supporting Patient Safety – Sentinel Event Program triennial report 2013 to 2016)*

[5] Department of Health, State Government of Western Australia, Australia recorded 561,524 hospital separations in 2015/16 (Your Safety in our Hands in Hospital - An Integrated Approach to Patient Safety Surveillance in WA Hospitals, Health Services and the Community: 2016).

and “retained instruments / material” were two of the most commonly reported SE in Australia.

HA, Hong Kong (4Q16 – 3Q17)	DH Victoria, Australia (3Q14 – 2Q15)	DH Western Australia, Australia (3Q15 – 2Q16)
Retained instruments / material after surgery / interventional procedure (19 cases, 48%)	Medication error leading to the death of a patient due to incorrect administration of drugs (7 cases, 17%)	Suicide of a patient in an inpatient unit (or whilst on leave) (8 cases, 57%)
Death of an inpatient from suicide (including home leave) (8 cases, 20%)	Retained instruments or other material after surgery requiring reoperation or further surgical procedure (6 cases, 14%)	Retained instruments or other material after surgery requiring re-opening or further surgical procedure (3 cases, 21%)
Surgery / interventional procedure involving the wrong patient or body part (6 cases, 15%)	Suicide of a patient in an inpatient unit (4 cases, 10%)	Haemolytic blood transfusion reaction resulting from ABO incompatibility (2 cases, 14%)

Table 4: The most common types of SE reported in HA, DH Western Australia and DH Victoria

36. Inpatient suicide rates varied substantially worldwide and depended on the type of hospital and estimation methods. Different studies estimated the range to be 5 – 15 per 100,000 admissions in general hospitals in the United States.[6] The HA inpatient suicide rate (0.7 – 2.8) was lower than that of general hospitals in the United States.

[6] S. Shapiro, H. Waltzer. Successful suicides and serious attempts in a general hospital over a 15-year period. General Hospital Psychiatry, 2 (1980), pp. 118–126.

Serious Untoward Events Statistics

Yearly Trend

37. A total of 69 SUE were reported in 4Q16 – 3Q17, making up an accumulated total of 701 SUE reported to date. The yearly distribution of SUE by category since 2010 is depicted in Figure 16, with the total number of cases each year shown at the top of each bar.

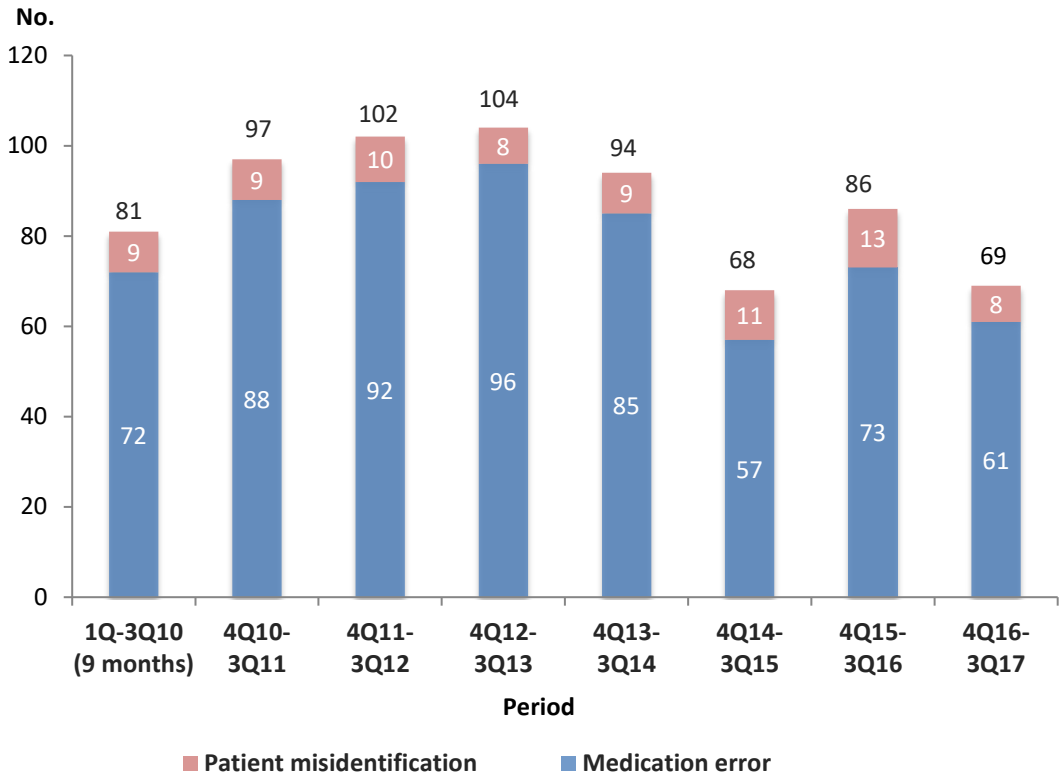


Figure 16: Yearly distribution of SUE by category

38. The yearly trend of the top three common drugs involved in *medication error* is depicted in Figure 17. Other common drugs involved are insulin, inotropes, oral hypoglycaemic agents etc.

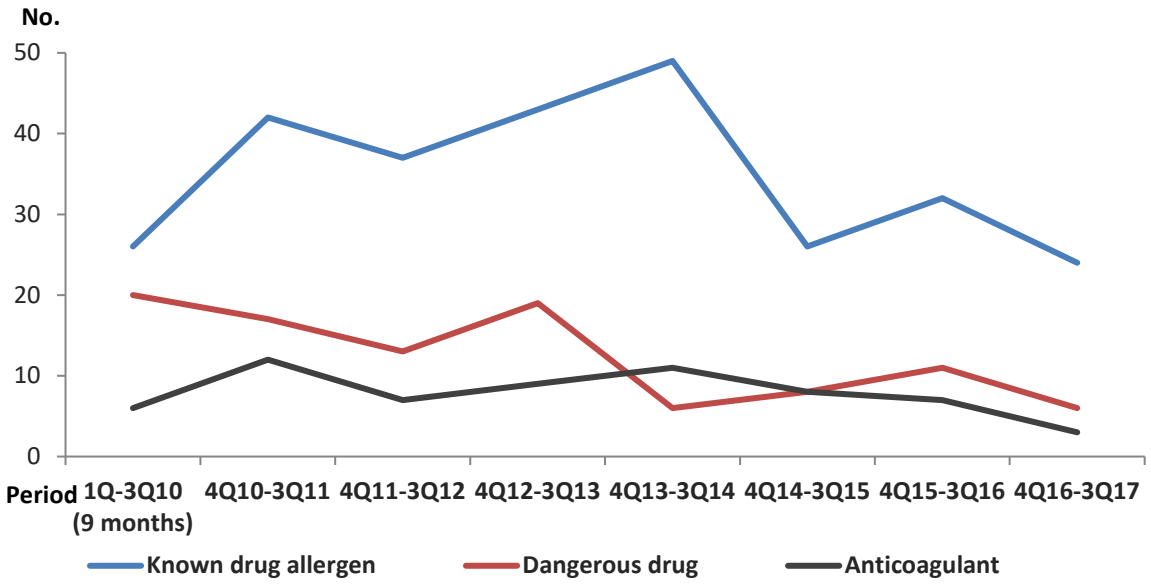


Figure 17: Yearly trend of top three common drugs involved in medication incidents

39. Up to now, 567 (81%) SUE cases had minor or insignificant consequences, 109 (15%) cases had moderate consequences and 25 (4%) cases had temporary major consequences (Figure 18). A description of the consequences is illustrated in Annex II.

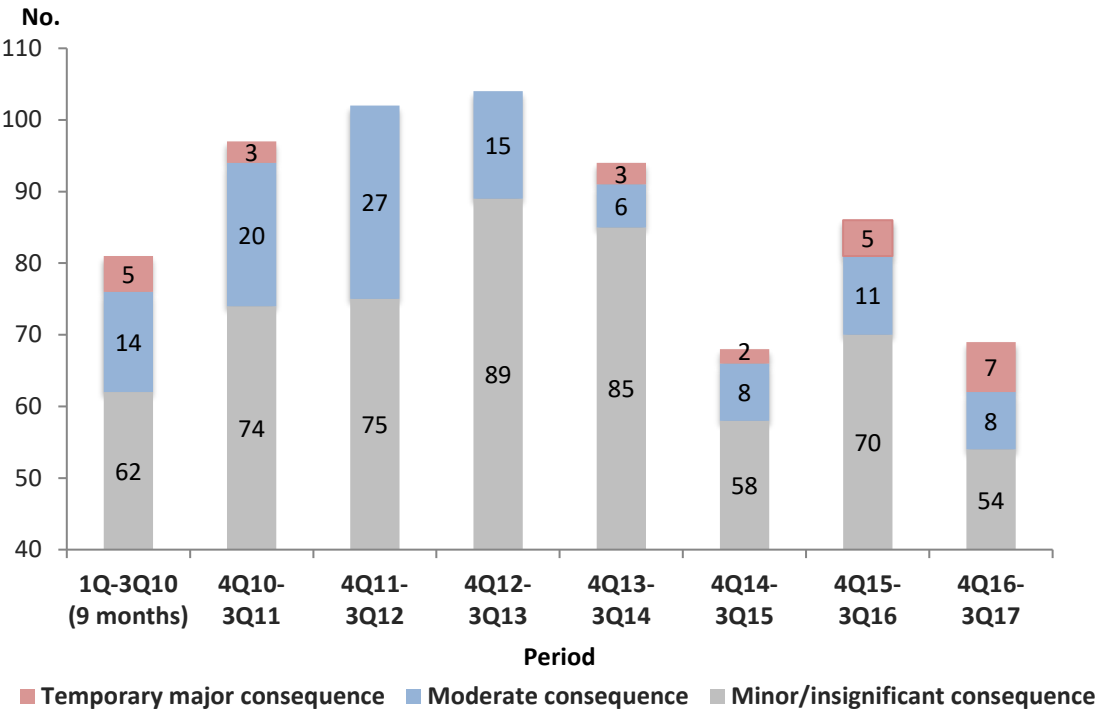


Figure 18: Yearly outcome of SUE

SUE Reported in 4Q16 – 3Q17

40. The quarterly distribution of SUE reported is illustrated in Figure 19.

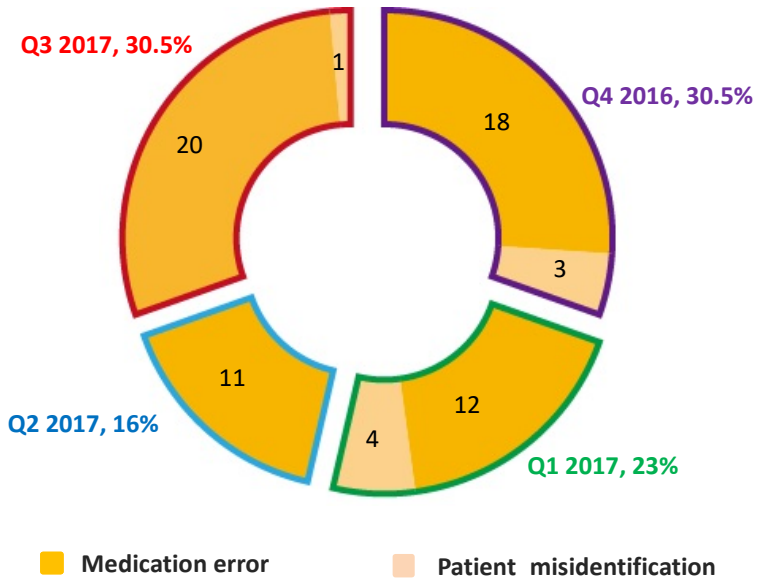


Figure 19: Quarterly distribution of SUE by category

41. Of the 69 SUE cases, 54 had minor / insignificant consequences, 8 had moderate consequences and 7 had temporary major consequences (Figure 20).

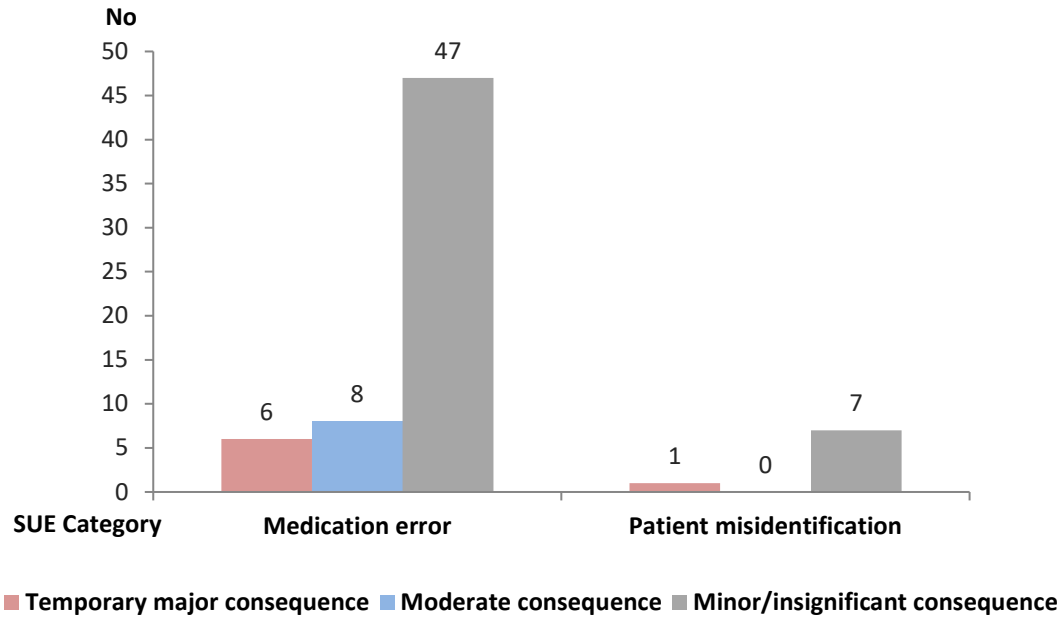


Figure 20: Outcome of SUE by category

Medication error

42. The three most common *medication errors* were prescriptions of *known drug allergen* (24 cases), *dangerous drug* (6 cases) and *insulin* (5 cases). The distribution of drugs is shown in Figure 21. Drugs such as phenytoin and entecavir were grouped under *other medications.*

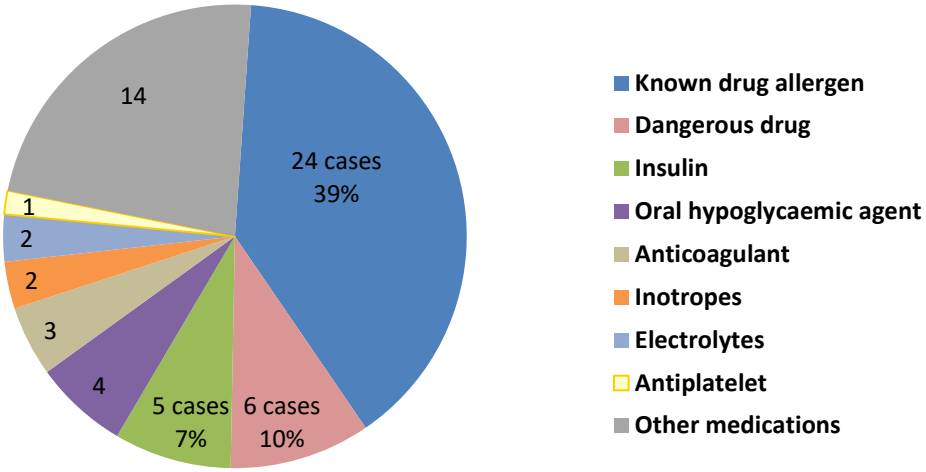


Figure 21: Distribution of medication error

43. Of the 24 *medication errors* related to *known drug allergen*, the three most commonly involved drugs were penicillin-related (8 cases), non-steroidal anti-inflammatory drugs (NSAID) (5 cases) and paracetamol (4 cases). These three drug groups constituted 71% of the total *known drug allergen* incidents. Their distributions are shown in Figure 22.

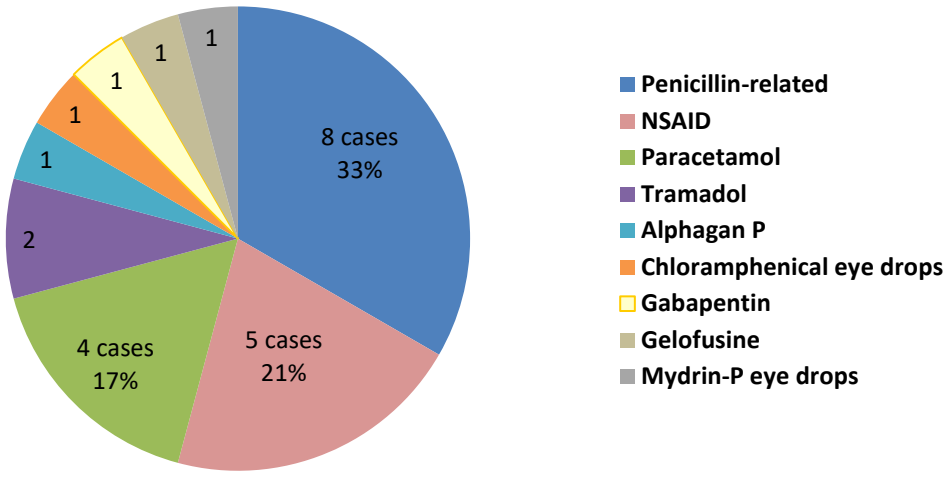


Figure 22: Distribution of drugs related to known drug allergen

44. Of the 24 *known drug allergen* cases, the two most common locations of occurrence were ward (11 cases) and Accident & Emergency Department (AED) (9 cases). These two locations constituted 84% of the total *known drug allergen* cases. Their distributions are shown in Figure 23.

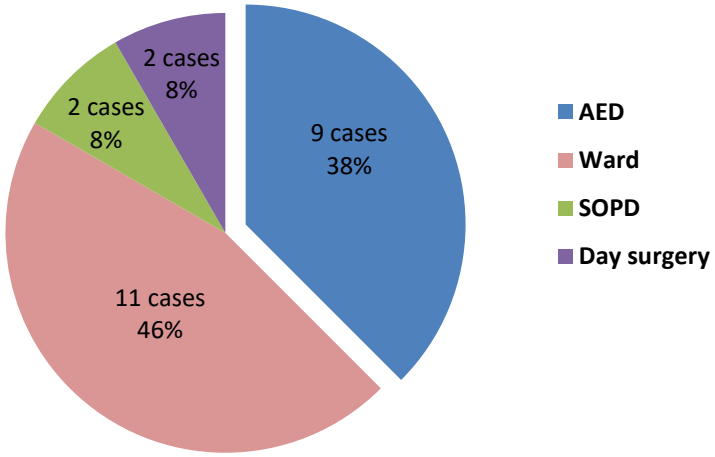


Figure 23: Location of occurrence of known drug allergen

45. Of the 24 *known drug allergen* cases, all had minor / insignificant consequences.

Patient misidentification

46. There were 8 SUE reported which were due to *patient misidentification*. These included 3 cases of *patient misidentification* during drug administration, 1 during drug prescription and 1 during drug dispensing. Their quarterly distribution is summarised in Table 5.

Patient misidentification scenarios	4Q16	1Q17	2Q17	3Q17
During drug prescription	0	1	0	0
During drug dispensing	1	0	0	0
During drug administration	0	2	0	1
Misfiling patient's laboratory report	0	1	0	0
Mis-selecting patients' images for reporting	1	0	0	0
Mixing up patients' sample in laboratory	1	0	0	0
Total	**3**	**4**	**0**	**1**

Table 5: Quarterly distribution of patient misidentification by scenarios

47. Of the 8 *patient misidentification* cases, all except 1 patient had temporary major consequence with decreasing blood pressure (Table 6). Their distribution is summarised in Table 6.

Patient misidentification scenarios	Minor/ Insignificant Consequence	Moderate Consequence	Temporary Major Consequence
During drug prescription	1	0	0
During drug dispensing	1	0	0
During drug administration	2	0	1
Misfiling patient's laboratory report	1	0	0
Mis-selecting patients' images for reporting	1	0	0
Mixing up patients' sample in laboratory	1	0	0
Total	**7**	**0**	**1**

Table 6: Consequences of patient misidentification

Analysis of Sentinel Events

48. In this chapter, the common contributing factors and recommendations revealed by the RCA panels (including recommendations which had been implemented or were being followed up by clusters / hospitals to prevent further recurrence) for each category of SE reported in 4Q16 – 3Q17 are analysed. They are classified into communication, knowledge / skills, work environment / scheduling, equipment and policies / procedures / guidelines. HAHO would continue to work with clusters and hospitals to improve and redesign systems or work processes at the corporate level to enhance patient safety. A brief description of individual SE can be found in Annex III.

Factors	Common Contributing Factors	Recommendations
Retained instruments / material – broken (10 cases)		
Communication	Incomplete information was given on the use of long gauze in the post-operative order and during handover.	Document clearly all special post-operative care and necessary follow up actions on the patient's post-operative order.
	Ineffective transfer of critical information during handover.	Reinforce the transfer of critical information during handover among nurses and doctors.
Equipment/ Material	Unfamiliar with the newly introduced device.	Acquaint with the design and functional features of the newly introduced device before operation.
	Leakage of cement (in liquid form) into the patient's acetabulum space intra-operatively.	Explore the source and use cement of other colors to facilitate differentiation between cement and bone during operation.
	High risk of breakage of small instruments due to metal fatigue and wear-and-tear.	Limit the utility span / recycling frequency of high risk instruments.
Knowledge / skills	Low awareness on potential risk of broken and retained instrument.	Enhance staff awareness on the potential risk of breakage of surgical instruments and instruments which are included in the "Risk register of high risk instruments".

Factors	Common Contributing Factors	Recommendations
Knowledge / skills *(con't)*	Overlook intra-operative x-ray findings of metallic fragment.	Screen all intra-operative x-ray imaging cautiously before the end of operation.
	Failure to check for completeness of used accountable items / instrument.	Develop measures to alert and facilitate staff to perform integrity check of surgical instruments during counting and reprocessing. Perform radiological imaging when completeness of the used instrument is in doubt.
Policies / procedures / guidelines	Lack of system from supplier to monitor condition of consignment items.	Develop a mechanism at HA level in the procurement process to ensure monitoring and scheduled replacement of on-loan / consignment items by the supplier.
	Lack of a systematic method to check the integrity of instruments with suspected problems.	Develop a systematic method to check the integrity of used powered surgical instruments.

Retained instruments / material – incorrect counting (9 cases)

Communication	Suboptimal communication among team members.	Enhance communication among team members and conduct handover properly. Share the incident among team members and raise their alertness to instruments with potential risk of loosening during operation. Build and reinforce the speak up culture.
	Unclear role delineation among nurses in checking instruments.	Clarify the role delineation of nurses in checking instruments.
Knowledge / skills	The gauze was fully packed into the patient's vagina.	Review the method of vaginal packing.
	Improper handling of tampon for perineal wound repairing.	Strengthen the training on the correct way of tampon use for repair of episiotomy / perineal tear wound.

Factors	Common Contributing Factors	Recommendations
Knowledge / skills *(con't)*	Assumed that only one piece of gauze was packed into patient's vagina.	Reiterate the importance of checking medical notes before performing any treatment or procedure.
	No attempt to document vaginal packing in medical notes before removal procedure.	Reiterate the importance of properly documenting the number of gauze or other medical materials left inside and removed from the patient's body in medical notes.
Policies / procedures / guidelines	Non-inclusion of Raney clip as an accountable item.	Include Raney clip as one of the accountable items and revise the "Intraoperative Counting Record".
	Failure to comply with the standard and practice of "counting of accountable items".	Reinforce the practice of "counting of accountable items" against the swab count sheet.
	Failure to follow guidelines for procedural safety.	Perform the procedure properly in accordance with standard practice. Implement the procedural safety checklist strictly.
	Surgeons were not familiar with the new model of catheter preloaded with stylet.	Implement a mechanism to coordinate and monitor the use of new medical consumables.
Equipment / Material	The stiffening stylet was preloaded inside the catheter with no alert label given inside the package.	Recommend to the manufacturer to enhance the alert measure of the presence of preloaded stiffening stylet.
Inpatient suicide (8 cases)		
Knowledge / skills	Difficulty in detection of suicidal risk through patient's presentation.	Consider using emotion assessment record to assess and record patient's emotional status.
Policies / procedures / guidelines	Unclear classification on different levels of suicidal risk, leading to difficulty in applying corresponding interventions and precautions effectively.	Consider stratifying patients with suicidal risk into categories and apply appropriate interventions and precautions.
Communication	The message of a prompt follow up action was not communicated to the	Reinforce verbal handover, speak up culture and documentation of

Factors	Common Contributing Factors	Recommendations
Communication *(con't)*	frontline clearly.	suicidal risk between parties involved in the patient care. Consider seeking early Psychiatrist's input once a "high suicidal risk" patient is identified by psychiatric liaison nurse.
Work environment / scheduling	Enhancement work to eliminate environmental risk of inpatient suicide was not completed in time.	Speed up the process of eliminating identified environmental inpatient suicide risk. Implement suicidal precaution measures upon detection of patients with suicidal ideation regardless of the time frame.
Wrong patient / part (6 cases)		
Policies / procedures / guidelines	Failure to comply with the Standard Operating Procedure on "Obtaining Written Informed Consent for Medical Treatment/Procedure".	Revise the workflow of obtaining informed consent. Indicate the patient's diagnosis and procedure laterality on the consent form.
	Non-compliance with the Hospital Authority Interventional Procedure Safety Policy.	Ensure the pre-interventional safety check is done properly.
	The operation site was marked on patient's left ear lobe. It was not easily visible once the surgeon stood at the vertex of the patient.	Perform the operation site marking on the patient's forehead to enhance visibility.
	The "SIGN IN" and "TIME OUT" procedures were done simultaneously.	Perform the "SIGN IN" and "TIME OUT" separately and distinctively.
	"TIME OUT" procedure was not performed.	Review the workflow for interventional procedures in the department. Reinforce the "TIME OUT" practice for all interventional procedures.

Factors	Common Contributing Factors	Recommendations
Communication	Unclear communication and documentation of the nerve block procedure.	Introduce "Stop Before You Block" for a "stop moment" to perform verification immediately before needle insertion for nerve block process. Enhance communication between anesthesiologists and nurses for the "SIGN IN" checking.
Work environment / scheduling	Based on recollection of preliminary computed tomography (CT) angiogram images, the neurosurgeon perceived that the aneurysm was located in the patient's LEFT brain.	Explore the feasibility of uploading source images onto the CMS as soon as possible for pre-operative checking.

Blood incompatibility (1 case)

Communication	Communication breakdown caused by misinterpretation and unclear instructions between the nurses.	Reinforce amongst staff the importance of delivering clear instructions to avoid misinterpretation and encourage staff to speak up and clarify uncertainties.
Knowledge / skills	No verification of patient identification before resuming an interrupted transfusion process.	Ensure correct patient identification at critical steps during the blood transfusion process. Perform assessment to ensure transfusion to the correct patient when handling transfusion reconnection after interruption of blood administration process.
	Inadequate awareness on the importance and need for high risk procedures such as blood administration procedure to be completed by oneself.	Perform assessment, such as patient identification and procedure verification, to ensure transfusion to the correct patient when handling transfusion reconnection after interruption of blood administration process.

49. There were 2 gas embolism cases reported. For the case which involved air embolism after percutaneous coronary intervention (PCI), the RCA panel made the following recommendation:

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

50. The other case which involved small gas locules found in brain, the RCA panel's concluding finding and recommendations are as follows:

a. The Panel considered different potential sources of air, but the exact root cause could not be pinpointed. The presence of Hickman catheter could be the possible source of air embolism.

b. Develop a guideline on handling of central venous catheter (CVC) to ensure the checking of integrity of CVC, tight connections with CVC, and adherence to the manufacturer's recommendations.

51. There were 3 reported *maternal death* SE cases. The RCA panel made the following recommendations:

a. Review and revise the management protocol for post-partum haemorrhage (PPH) and management of critically ill patients.

b. Reinforce staff training on the early recognition and management of PPH.

c. Reinforce staff training on identification and management of critically ill patients.

d. Evaluate and monitor team performance by conducting regular drills with debriefings.

52. There was 1 case reported involving a mother who took her baby home without permission. The mother later brought her baby back to the hospital safely.

Analysis of Serious Untoward Events

53. Since *known drug allergen* constituted the most common category (39%) of all the SUE reported in 4Q16 – 3Q17, their common contributing factors and recommendations taken to prevent further recurrence are summarised below. Similar to SE, the SUE cases are also evaluated from the perspectives of knowledge / skills and policies / procedures / guidelines.

Factors	Common Contributing Factors	Recommendations
Medication error – known drug allergen		
Knowledge / skills	Unawareness of cross-sensitivity between Ketorolac and Aspirin.	Beware of cross-sensitivity among different drug groups. Refer to the "Cross-allergy Reference Table".
Policies / procedures / guidelines	Low alertness of patient's reported allergy.	Enter patient's drug allergy history in CMS immediately.

54. *Dangerous drug* constituted the second most common SUE. In one of the cases, wrong dose of fentanyl patch was given. Fentanyl patch 12mcg/hour every 3 days was prescribed for management of cancer pain. Nurse inadvertently checked out fentanyl patch 25mcg/hour and administered to patient. The incident was discovered due to discrepancy between ledger and actual quantity.

Learning Point:

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

55. In one of the SUE cases involving *other medications*, there was a delayed prescription of antiviral drug to a known hepatitis B virus (HBV) carrier given high-dose corticosteroid therapy.

Key Contributing Factors:

a. Inadequate level of vigilance on timely antiviral treatment after administration of high-dose immunosuppressive medications.
b. Heavy clinical service workload increasing the risk of frontline staff overlooking or not acting on important clinical information while making treatment decisions
c. Unsatisfactory internal communication between different clinical teams.
d. Inadequate experience and training of clinicians in management role(s) in clinical incident management, ascription of responsibilities to other senior members, and insufficient sensitivity and sense of exigency.

Recommendations:

a. Explore measures to highlight this risk in published HA treatment guidelines.
b. Explore IT solutions or aids such as pop-up alert prompting doctors to consider patient's HBV carrier status when prescribing immunosuppressive therapy.
c. Consider highlighting this risk in relevant clinical specialties training.
d. Emphasise risk prevention and patient safety in the contents of training and education programmes.
e. Explore IT solutions, such as enhancing alignment of timing of Alert Box appearance with relevant Clinical Management System (CMS) steps in the clinical care processes, to reduce the risk of overlooking important information in CMS.
f. Review the current practices related to clinical governance and identify areas for improvements with the objectives of enhancing internal communications and holistic patient care.

56. In another SUE case involving *other medications*, Phenytoin 750mg infusion was given at a faster rate than prescription.

Key Contributing Factor:

Limited knowledge and experience of loading phenytoin

Recommendation:

Suggest expanding the usage of existing drug information resources in the administration module as in the prescription module in IPMOE

57. One *patient misidentification* case involved 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. Six 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 absent 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.

Learning Point:

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

58. The other learning points related to *patient misidentification* SUE are listed below:

For drug administration:

Strictly adhere to patient identity checking procedures before drug administration.

For drug prescription:

Check the patient information and medical notes before initiating any prescription.

For misfiling laboratory report:

Match correct patient identity prior to filing patient's laboratory report.

Learning and Sharing

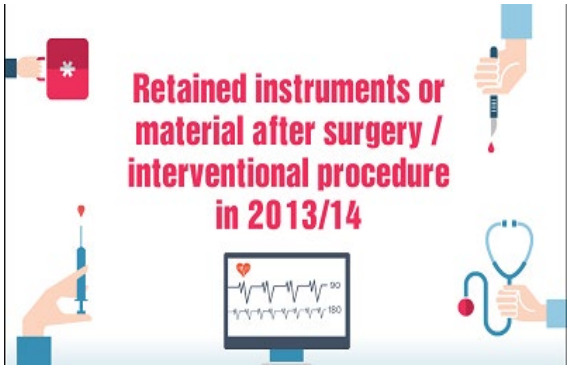
In 2016/17, HAHO had conducted 14 staff forums for almost 2,300 colleagues. Participants of these forums included hospital leaders, patient safety managers, doctors, nurses and others. Participants' responses were collected for future program planning and development.

Important learning points of incidents were also shared in different Coordinating Committees (COC), Central Committees (CC), Specialties Advisory Groups (SAG), Safety Committees (SC) and other working groups. A total of 33 sharing sessions had been conducted in the year. Electronic platform had also been used to promote and disseminate information on patient safety issues.

Clinical incident statistics including number of SE & SUE and their outcomes, number of falls and missing patients, number of medication incidents reported in AIRS and their severity level, distribution of SUE related medication incidents and known drug allergy were promulgated on the Patient Safety and Risk Management Department (PSRM) website.

To reinforce and enhance staff knowledge on surgical safety, various animated videos and messages on patient safety issues were also put on PSRM website for easy sharing and access. Animated messages produced in 2015, "Surgical Safety Policy" and "Retained instruments or material – incorrect counting" are good tools that we would like to further promulgate to frontlines.

Surgical Safety Policy



Retained instruments or material – incorrect counting

The Way Forward

Review of clinical incident management

During the year, a Review Panel on Sentinel and Serious Untoward Event Policy (Policy) was set up to conduct a comprehensive review on the Policy and to look into policy compliance and further advancements, particularly on the timeliness of open and public disclosure. The Review Panel acknowledged the significant efforts made at HAHO and cluster levels to oversee incident reporting and management as well as to improve the mechanisms over the years.

For enhancement of clinical incident management, the Review Panel has made recommendations in several areas including the definition, identification and reporting of SE & SUE, open and public disclosure, learning and sharing methodologies and psychological support to patient, patient's family and HA staff after occurrence of SE or SUE.

To follow-up on the recommendations from the Review Panel on the SE/SUE Policy, respective Task Forces were set up to devise on respective strategies for enhancement of clinical incident management. These strategies include the review on the Clinical Incident Management Manual to enhance the overall management of clinical incidents, enhancement of the user-friendliness of the incident reporting system (AIRS) to facilitate incidents reporting, and the establishment of the Corporate Open Disclosure Policy for Clinical Incidents to provide guidance for open disclosure when handling clinical incidents.

Surgical Procedure Safety Policy

The "Workgroup for Surgical Procedure Safety" has reviewed the current surgical / interventional / bedside safety policies and has clarified high risk issues, such as the practice of "SIGN IN" and "TIME OUT" procedures. Inputs have been obtained from COCs/CCs. With *retained instruments or other material after surgery / interventional procedure* and *surgery / interventional procedure involving the wrong patient or body part* being two of the top categories of SE,

promulgation of the endorsed revised policies will be of utmost importance.

Inpatient Suicide (including Home Leave)

Apart from environmental control, continuous efforts would be made to raise staff awareness on the risks of suicide of home leave patients, and to remind healthcare providers to balance the risks and benefits when considering home leave arrangements for patients. In January 2018, a commissioned training will be conducted to further enhance learning and sharing among staff in the prevention and management of inpatient suicide.

ANNEXES

Annex I

HA SENTINEL AND SERIOUS UNTOWARD EVENT POLICY (July 2015)

1. Purpose

The Sentinel and Serious Untoward Event Policy defines the process for identification, reporting, investigation and management of Sentinel Events (SE) 「醫療風險警示事件」and Serious Untoward Events (SUE)「重要風險事件」in the Hospital Authority.

2. Scope

This Policy applies to sentinel and serious untoward events related to care procedures.

3. Objectives

- To increase staff's awareness to SE and SUE.
- To learn from SE and SUE through Root Cause Analysis (RCA), with a view to understand the underlying causes and make changes to the organization's systems and processes to reduce the probability of such an event in the future.
- To have positive impact on patient care and services.
- To maintain the confidence of the public and regulatory / accreditation bodies.

4. Definition of Mandatory Reporting Events

4.1 Sentinel Events

1. Surgery / interventional procedure involving the wrong patient or body part.
2. Retained instruments or other material after surgery / interventional procedure.
3. ABO incompatibility blood transfusion.
4. Medication error resulting in major permanent loss of function or death.
5. Intravascular gas embolism resulting in death or neurological damage.
6. Death of an inpatient from suicide (including home leave).
7. Maternal death or serious morbidity associated with labor or delivery.
8. Infant discharged to wrong family or infant abduction.
9. Other adverse events resulting in permanent loss of function or death (excluding complications).

4.2 Serious Untoward Events

1. Medication error which could have led to death or permanent harm.
2. Patient misidentification which could have led to death or permanent harm.

5. Management of SE and SUE

5.1 Immediate response upon identification of a SE or SUE

5.1.1 Clinical Management Team shall assess patient condition and provide care to minimize harm to patient.

5.1.2 Attending staff shall notify senior staff of Department without delay (even outside office hours). Hospitals should establish and promulgate a clear line of communication for SE and SUE to all staff.

5.1.3 Department and hospital management shall work out an immediate response plan, including

- Disclosure to patient / relatives;
- When to notify HAHO;
- Public relation issues and media, (making reference to HAHO Corporate Communication Section's protocol / advice); and
- Appropriate support / counseling of staff.

5.2 Reporting (within 24 hours)

5.2.1 Hospitals must report SE and SUE through the Advance Incident Report System (AIRS) within 24 hours of their identification to

- Provide an initial factual account; and
- Mark the case as "SE" or "SUE" in AIRS accordingly.

5.2.2 Hospitals shall consider additional reporting requirements as indicated, for example, to Coroner in accordance to statutory requirement.

5.3 Investigations

5.3.1 Within 48 hours

5.3.1.1 For SE, HAHO shall appoint an RCA Panel, composing of members from hospital RCA team, respective COCs, external senior clinicians, HAHO coordinator and / or lay persons from Hospital Governing Committee, to evaluate the event reported.

5.3.1.2 For SUE, the RCA Panel shall be formed by respective hospital.

5.3.2 Hospital shall submit a detailed factual account to HAHO in 2 weeks.

5.3.3 The RCA Panel shall submit an investigation report to the Hospital Chief Executive in 6 weeks.

5.3.4 Hospital shall submit the final investigation report to HAHO in 8 weeks.

5.4 Follow-up (post 8 weeks)

5.4.1 Implicated departments shall implement the action plan as agreed in the RCA report, and risk management team / personnel shall monitor compliance and effectiveness of the measures in due course.

5.4.2 The panel at HAHO shall review RCA reports to identify needs for HA-wide changes, and to share the lessons learned through Safety Alert, HA Risk Alert (HARA), Patient Safety Forum, SE and SUE Report (to public) and follow-up visits.

5.4.3 The HAHO would visit respective hospitals for the implementation of improvement measures.

Supplementary Notes to Sentinel Event

If an incident involves a criminal act, a deliberately unsafe act, substance abuse, or deliberate patient harm or abuse, the incident should not be scrutinized by the Sentinel Event Policy.

Definition of common terms of Sentinel Event

1. Surgery / interventional procedure

Any procedures, regardless of setting in which it is performed, that involves any of the following:

- Creation of surgical wound on skin or mucous membranes.
- Making a cut or a hole to gain access to the inside of a patient's body.
- Inserting an instrument or object into a body orifice.
- Use electromagnetic radiation for treatment.

It includes fine needle aspiration, biopsy, excision and cryotherapy for lesions, radiology interventional procedures, anesthetic block and vaginal birth or Caesarean delivery.

2. Permanent loss of function

It means sensory, motor, physiologic, or intellectual impairment not present on admission requiring continued treatment or lifestyle change. When "permanent loss of function" cannot be immediately determined, applicability of the policy is not established until either the patient is discharged with continued major loss of function, or two weeks have elapsed with persistent major loss of function, whichever occurs first.

Reportable Sentinel Event

1. Surgery / interventional procedure involving the wrong patient or body part

Any surgery/interventional procedure performed on an unintended patient or unintended body part.

The event can be detected at any time after the surgery / interventional procedure begins which is the point of surgical incision, tissue puncture or the insertion of instrument into tissue, cavities or organs.

Not to be included

- Unsuccessful procedure as a result of unknown/unexpected anatomy of the patient.
- Changes in plan during surgery with discovery of pathology in close proximity to the intended place where risk of a second surgery or procedure outweighs benefit of patient consultation or unusual physical configuration (e.g. adhesion, spine level/extra vertebrae).
- Blood taking, parenteral administration of drug, and use of otoscope without any intervention.

2. Retained instruments or other material after surgery / interventional procedure

Unintended retention of a foreign object in a patient after a surgical / invasive procedure ends. It also includes items were inserted into patient's body during a surgery / interventional procedure and not removed as planned. The size of the retained foreign object and the potential for harm from the retained foreign object, or whether the object is removed after discovery is irrelevant to its designation as a Sentinel Event.

'Instrument or other material' includes any items (such as swabs, needles, wound packing material, sponges, catheters, instruments and guide wires) left unintended.

'Surgery / interventional procedure' ends after all incisions have been closed in their entirety, and / or all devices, such as probes or instruments, that are not intended to be left in the body have been removed, even if the patient is still in the operation theatre or interventional suite under anesthesia.

Not to be included

- Objects that are intentionally (i.e. by conscious decision) left in place during the surgery / interventional procedure.

- Objects are known to be missing prior to the completion of the surgery or interventional procedure and may be within the patient (e.g. screw fragments, drill bits) but where further action to locate and / or retrieve would be impossible or carry greater risk than retention.

3. ABO incompatibility blood transfusion

Administration of blood or blood product(s) having ABO incompatibilities, regardless of whether it results in transfusion reaction or other complications.

Not to be included

- Clinically indicated transfusion of ABO incompatible blood or blood product.

4. Medication error resulting in major permanent loss of function or death

Medication error includes error in the prescribing, dispensing, or administration of a medicine resulting in permanent loss of function or death. It includes, but not limited to, an error involving the wrong drug, the wrong dose, the wrong patient, the wrong time, the wrong rate, the wrong preparation, or the wrong route of administration.

Not to be included

- Death or permanent loss of function associated with allergies that could not be reasonably known or discerned in advance of the event.
- Variance in clinical practice on drug selection, dose and route of administration agreed by professional.

5. Intravascular gas embolism resulting in death or neurological damage

Death or neurological damage as a result of intravascular air embolism introduced during intravascular infusion / bolus administration or through a hemodialysis circuit.

Not to be included

- The introduction of air emboli: via surgical site (particularly Ear, Nose and Throat surgery and neurosurgery), during foam sclerotherapy and during the insertion of a central venous catheter.
- Where the introduction of the air embolism is deliberately by the patient.

6. Death of an in-patient from suicide (including home leave)

Death from suicide of in-patient committed any time after in-patient admission and before discharge, including home leave.

Not to be included

- Deaths resulting from self-inflicted injuries that committed before admission.
- Deaths from suicide committed while waiting for admission to the hospital.
- Suicidal death of a patient attending an out-patient service (such as Out-patient Department, Accident and Emergency Department).
- Unsuccessful suicide attempts.

7. Maternal death or serious morbidity associated with labor or delivery

It includes death or serious morbidity of a woman during or following childbirth from any cause related to or aggravated by labour, delivery or its management. It also includes obstetric complications resulting in death or serious morbidity. Serious morbidity means permanent loss of function.

'Associated with' means that it is reasonable to initially consider that the incident was related to the course of care. Further investigation and / or root cause analysis of the event may be needed to confirm or refute the presumed relationship but this should not delay reporting of event.

8. Infant discharged to wrong family or infant abduction

An in-patient aged 12 months or below is discharged to a wrong family or taken away from the hospital ward without prior notice to the hospital.

9. Other adverse events resulting in permanent loss of function or death

An injury related to medical management, in contrast to the natural course of patient's illness or underlying condition or known complications of treatment, resulting to permanent loss of function and death.

Medical management includes all aspects of care including diagnosis and treatment, and the systems and equipment used to deliver care.

Not to be included

- Event relating to the natural course of the individual's illness or underlying condition or to known complications of treatment.
- A death or loss of function following a discharge against medical advice (DAMA).
- Hospital-acquired infection(s).

Final decision-making around individual events is for HAHO consultation with cluster SDs.

Annex II

DESCRIPTION OF CONSEQUENCES

Sentinel Events

Category of Consequence	Severity Index of Incident	Description
Minor/ Insignificant	1	Incident occurred (reached patient) but no injury sustained Monitoring may be required No investigation or treatment required
	2	Minor injury Monitoring, investigation or minor treatment required No change in vital signs
Major/ Moderate	3	Temporary morbidity Monitoring, investigation or simple treatment required Some changes in vital signs
	4	Significant morbidity Transfer to a higher care level, emergency treatment, surgical intervention or antidote required Significant changes in vital signs
Extreme	5	Major permanent loss of function or disability
	6	Death

Serious Untoward Events

Category of Consequence	Severity Index of Incident	Description
Minor/ Insignificant	1	Incident occurred (reached patient) but no injury sustained Monitoring may be required No investigation or treatment required
	2	Minor injury Monitoring, investigation or minor treatment required No change in vital signs
Moderate	3	Temporary morbidity Monitoring, investigation or simple treatment required Some changes in vital signs
Temporary Major	4	Significant morbidity Transfer to a higher care level, emergency treatment, surgical intervention or antidote required Significant changes in vital signs

Annex III

INDIVIDUAL SENTINEL EVENTS

Category 1: Surgery / interventional procedure involving the wrong patient or body part

Case 1: 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 the 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.

Key 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.

Case 2: Wrong side craniotomy

A patient was transferred to an acute hospital for managing intracranial haemorrhage. An urgent CT Brain showed subarachnoid haemorrhage & hydrocephalus. Ruptured RIGHT middle cerebral artery aneurysm was seen in CT Angiogram. The patient had increased intracranial pressure.

Both the consent form and the booking of urgent operation indicated LEFT craniotomy to be performed. Neither the image nor the report of CT angiogram were available on CMS. "TIME OUT" procedure was conducted, but there was no marking of surgical site. LEFT craniotomy was then performed. During the operation, it was noted (from the CMS) that the aneurysm was located at RIGHT side of brain. The bone flap on the LEFT side was placed back on the LEFT side. After disclosing to the patient's family, RIGHT craniotomy was performed. The patient made good recovery after the operation.

The RCA panel identified the following

1. The team had made their best effort in arranging radiological investigation for the patient in an emergency situation, and in making a timely diagnosis and treatment plan.
2. Since the patient was in critical condition, the team decided to arrange an urgent craniotomy before the radiological images were uploaded to Clinical Management System (CMS). Based on recollection of preliminary computed tomography (CT) angiogram images, the neurosurgeon mistakenly perceived that the aneurysm was located in the patient's LEFT brain.
3. The team had followed the standard protocols to perform "TIME OUT" procedure, including checking of patient identity, surgical site and adverse drug reactions etc., before the operation.

Recommendations

1. Explore the feasibility of uploading source images to the CMS as soon as possible for pre-operative checking.
2. Review and revise the management protocols and checklists for surgical safety to include marking of surgical sites and checking of radiological images during the "time-out" procedure.
3. Explore the feasibility of conducting a second "time-out" procedure before the skin incision.
4. Reinforce the practice of having surgeons, anaesthetists and nurses to sign on the Surgical Safety Checklist.

Case 3: Wrong sided burr hole operation

A patient with history of bilateral chronic subdural haematoma on conservative management was admitted for lower limb weakness. Computerised tomography (CT) scan on admission revealed an enlarged LEFT subdural haematoma with mass effect. The patient was arranged for LEFT burr hole operation with the procedural laterality marked on the patient's left ear lobe. The patient

was then transferred to the operating theatre with "SIGN IN" and "TIME OUT" performed simultaneously. An emergency RIGHT burr hole was performed instead of an intended LEFT burr hole operation. Minimal subdural collection was noted. The wrong-sided procedure was noticed. The RIGHT scalp wound was sutured and a LEFT sided burr hole was performed with satisfactory drainage of the haematoma. The patient recovered with good progress and was discharged 2 weeks later.

Key contributing factors

1. The operation site was marked on patient's left ear lobe. It was not easily visible once the surgeon stood at the vertex of the patient.
2. The "SIGN IN" and "TIME OUT" procedures were done simultaneously.

Recommendations

1. Perform the operation site marking on the patient's forehead to enhance visibility.
2. Perform the "SIGN IN" and "TIME OUT" separately and distinctively.

Case 4: Wrong sided nasal biopsy

A patient who was diagnosed with brain stem death was worked up for cadaveric organ donation. CT scan of the brain showed a suspicious nasal lesion at the patient's RIGHT pterygomaxillary fissure. Nasal endoscopic biopsy was arranged without indicating laterality of the operative procedure. LEFT nasal endoscopic biopsy was performed instead of the intended RIGHT nasal endoscopic biopsy. The verbal report for the intraoperative frozen section of the LEFT nasal endoscopic biopsy revealed no malignancy. The patient's liver was then harvested for transplantation to another patient. On routine review of the case, the wrong-sided biopsy was noted. The donor's family was interviewed and agreed for a second biopsy. A RIGHT sided biopsy was performed which revealed a benign lesion.

Key contributing factors

The diagnosis and the laterality of the operative site were not indicated on the patient's consent form.

Recommendation

Indicate the patient's diagnosis and procedure laterality on the consent form.

Case 5: Wrong sided fine-needle aspiration (FNA)

A patient with hearing impairment had Magnetic Resonance Imaging (MRI) performed and

revealed a RIGHT parotid lesion. The patient then attended the hospital for an ultrasound (USG) guided percutaneous FNA of this RIGHT parotid lesion. USG scanning was performed on the LEFT parotid, which incidentally revealed a 4mm lesion. USG scanning was not performed on the RIGHT parotid. "TIME OUT" procedure was not performed. FNA was performed on the LEFT parotid lesion. The incident was noted on the same day during routine review of cases. The situation was explained to the patient and family and the patient underwent USG guided FNA of the RIGHT parotid lesion 6 days later.

Key contributing factors

1. "TIME OUT" procedure was not performed.
2. The patient had no localizing sign for the RIGHT parotid lesion and was an incidental finding on MRI. A LEFT sided FNA was performed for the patient for an incidental USG finding of a LEFT parotid lesion.

Recommendations

1. Review the workflow for interventional procedures in the department.
2. Reinforce the "TIME OUT" practice for all interventional procedures.
3. Perform site marking on all procedures with laterality.

Case 6: Wrong sided ilioinguinal nerve block

A paediatric patient with RIGHT undescended testis was admitted for RIGHT orchidopexy under general anaesthesia. For better post-operative pain relief, an intraoperative RIGHT ilioinguinal nerve block before performing the orchidopexy procedure was offered to the patient at the receiving area of the operating theatre. Consent was obtained from the parent. However, a LEFT ilioinguinal nerve block was performed instead. The wrong-sided nerve block was spotted by the surgeon before orchidopexy. Orchidopexy was performed on the correct side uneventfully. Wound pain was well-controlled by local anaesthesia infiltration. The patient was discharged on the same day without complaint of pain.

Key contributing factor

Unclear communication and documentation of the nerve block procedure.

Recommendations

1. Introduce "Stop Before You Block" for a "stop moment" to perform verification immediately before needle insertion for nerve block.
2. Enhance communication between anesthesiologists and nurses for the "SIGN IN" checking.

Category 2: Retained instruments or other material after surgery / interventional procedure

Broken Instruments / Material

Case 1&2: A metallic fragment found in two patients (2 cases)

A metallic fragment was found in two patients on postoperative X-ray. Both patients underwent closed reduction and nailing fixation operation to their femur uneventfully. However, the lag screw driver used in their operations were found broken (2 out of 4 teeth found missing) afterwards. It was subsequently confirmed that the same instrument was used. Both patients were clinically well. They decided against further operation to retrieve the fragment.

Key contributing factors

1. Low awareness on potential risk of breakage of protruding parts of the lag screwdriver.
2. Lack of system from supplier to monitor condition of consignment items.

Recommendations

1. Develop a mechanism at HA level in the procurement process to ensure monitoring and scheduled replacement of on-loan / consignment items by the supplier.
2. Develop measures to facilitate integrity checking of selected surgical instruments during counting and reprocessing.

Case 3: 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 the stable condition. On the next morning, a nurse examined the NG tube and suspected it to be broken. Emergency rigid bronchoscopy was performed. A 23 cm long NG tube segment was retrieved completely.

Key contributing factors:

1. Failure to check the integrity of the NG tube right 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.

Case 4: A piece of cement

A patient underwent RIGHT hip cemented bipolar hemiarthroplasty for femoral neck fracture. Staff packed the acetabulum with gauze during cementation. Post-operative X-ray revealed a foreign body in patient's right acetabulum. A piece of cement (2.5cm x 1.5cm) was removed in a subsequent operation. The patient had good rehabilitation progress.

Key contributing factor

Leakage of the cement (in liquid form) into the patient's acetabulum space intra-operatively.

Recommendations

1. Explore the source and use cement of other colors to facilitate differentiation between cement and bone during operation.
2. Explore routine intra-operative X-ray to check for abnormalities / retained foreign body before wound closure.
3. Check independently for any retained cement before proceeding with the implant.

Case 5: Broken metallic wire

A patient was admitted for RIGHT shoulder arthroscopic repair surgery. Four suture anchors were used during the operation. The operation was uneventful, except that the surgeon found

difficulties when retrieving one suture introducer during the operation. Follow up X-ray 6 weeks later revealed a 14mm x 1mm broken metallic wire in the patient's RIGHT glenoid cavity, which was likely to be the broken part of the metallic introducer of the suture anchor. The metal wire was retrieved in a subsequent operation successfully.

Key contributing factors

1. Inherent risks and special design of the suture anchor device.
2. Unaware of possible broken suture anchor fragment when encountering difficulties in retrieving the introducer.
3. The surgical team was unfamiliar with the newly introduced suture anchor device.

Recommendations

1. Alert all stakeholders on the risk of used instrument.
2. Perform radiological imaging when completeness of the used suture anchor is in doubt.
3. Improve communication among clinical team members to acquaint with the design and functional features of the suture anchor device before operation.

Case 6: Radiopaque fragment in LEFT wrist

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

Key contributing factor:

Failure to check for completeness of used accountable items.

Recommendations:

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

Case 7: A 3mm tip of drill bit

A patient underwent emergency open reduction of facial fracture and insertion of orbital implant. The surgeon found some tactile abnormalities and had difficulties fixing the screw. The drill bit was checked by a nurse. Some dirt and charcoal of the drill bit tip was found and suspected to

have been generated during drilling process. The surgeon continued using the drill bit for the operation. The tip (~3mm) of the 1.1mm drill bit was found broken and missing before packing for sterilization the following day. X-ray of the patient's facial bones and orbits confirmed presence of a radiopaque material in the medial orbital floor compatible with the broken piece of the drill bit. The patient agreed not to remove the retained broken tip.

Key contributing factors

1. Lack of a systematic method to check the integrity of instruments with suspected problems.
2. High risk of breakage of small drill bits due to metal fatigue and wear-and-tear.

Recommendations

1. Develop a systematic method to check the integrity of used powered surgical instruments.
2. Limit the utility span / recycling frequency of high risk instruments.

Case 8: Metallic foreign body

A patient was admitted for hip fracture with closed reduction and fixation with Proximal Femoral Nail Antirotation (PFNA) performed. Unlike the usual practice for this operation, drill bit was not used when entering the lateral cortex of femur. Nevertheless, the operation was performed "smoothly" with the integrity of all instruments checked before and after operation. Intraoperative X-ray showed no obvious metallic foreign body. Post-operative X-ray revealed a 1mm x 2mm foreign body shadow adjacent to the implant. The images were reviewed by the clinical team and decided that there was no need to remove the foreign body.

Key contributing factor:

Drill bit was not used to open the lateral cortex of the bone.

Recommendation:

Reinforce the training on the use of drill bit in performing operations with PFNA.

Case 9: Metallic fragments

A patient was admitted for elective arthroscopic Latarjet procedure to remove metal anchors in LEFT shoulder. 2 out of 3 metal anchors were removed during operation. The surgeon decided to convert to open procedure for offering a better way of managing the patient. During the open procedure, a nurse passed by and noted fragments / dusts being produced. Surgeons replied that

the fragments / dusts could be washed away. Post-operative X-ray revealed foreign bodies (3 metallic fragments) in patient's LEFT shoulder which were subsequently located by CT imaging. The treatment plan was to remove the 3 metallic fragments by using sterile magnet and copious wound irrigation during an elective wound exploration under intra-operative fluoroscopy. Post-wound exploration X-ray showed the presence of a 4th metallic fragment along the lower border of upper titanium screw which was also noted in the pre-exploration images. The patient was not advised for further surgery.

Key contributing factors

1. Low awareness on potential risk of breakage or deformity of guide pin.
2. Overlook intra-operative x-ray findings of metallic fragment.

Recommendations

1. Check for completeness of instruments meticulously especially when instruments were deformed.
2. Enhance staff awareness on the "Risk register of high risk instruments".
3. Screen all intra-operative x-ray imaging cautiously before the end of operation.

Case 10: The wire loop

A patient had fractured RIGHT ring finger after a crush injury 4 weeks ago. Open reduction and internal fixation with K-wire and tension band wiring to the RIGHT distal phalange was performed for the patient. A pull-out loop metal wire was applied together with a protective axial K-wire. 6 weeks postoperatively, K-wire and pull out wire were removed at the Hand Clinic uneventfully. No follow-up X-ray was arranged for the patient on that day. The patient attended follow-up 4-weeks later and complained of persistent pain over RIGHT ring finger. X-ray showed retained broken wire loop over previous pull out wire site. The broken wire loop was removed in an urgent operation the following day.

Key contributing factors

1. Failure to examine the integrity of the removed wires or compare the shape and length of the wire with previous X-ray image.
2. Unfamiliar with the procedure and lack of experience in removing such kind of wire.
3. Low awareness on high risk of wire loop retention from breakage of pull-out wire. (The procedure of using pull-out loop wire for fixing distal phalangeal fracture was not commonly done nowadays.)

Recommendations

1. Reinforce the practice of checking the integrity of removed pull-out wire and comparing the wire with previous radiological images.
2. Adopt a low threshold for ordering radiological confirmation of complete removal of wire loop in case of doubt or difficulties encountered in the removal process.

Incorrect Counting of Instruments / Material

Case 1: 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.

Key contributing factors:

1. Unclear role delineation among nurses in checking and discarding the sterilisation 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 the scrub nurse and the circulating nurse should be responsible for checking the sterility of instruments and remove the sterilisation indicator from all sterile fields after checking.

Case 2: 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, the 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.

Key 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.

Case 3: 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.

Key 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.

Case 4: A tampon

A patient had normal spontaneous delivery with first degree laceration in perineal area. She was discharged on post-delivery Day 2. On the following day after discharge, the patient retrieved a piece of "cotton wool pack" from her vagina. Subsequent vaginal speculum examination and transvaginal scan showed no abnormality. The "cotton wool pack" was confirmed to be a tampon.

Key contributing factors

1. Failure to comply with the standard and practice on "counting of accountable items".
2. Failure to comply with the departmental guidelines on "repair of episiotomy / perineal tear wound".
3. Improper handling of tampon for perineal wound repairing.

Recommendations

1. Reinforce the practice of "counting of accountable items" against the swab count sheet.
2. Strengthen the training on correct way of tampon use for repair of episiotomy / perineal tear wound.

Case 5: A Raney clip

A patient underwent craniectomy and gross total removal of the cerebellar arteriovenous malformation for recurrence of small residual supplies from the RIGHT superior cerebellar artery and posterior inferior cerebellar artery. 6 days later, computed tomography (CT) of the patient's brain showed suspected foreign body. One Raney clip was subsequently removed from patient's subcutaneous layer at bedside.

Key contributing factors

1. Raney clips are not included as accountable item in the current practice.
2. Currently, there are variations in the practice of removal of the Raney clips.

Recommendations

1. Include Raney clip as one of the accountable items.
2. Revise the "Intraoperative Counting Record" and work out the counting mechanism among team members.

Case 6: A piece of gauze

A patient with history of cervical cancer was admitted for heavy per vaginal (PV) bleeding. Subsequent speculum examination revealed tumour bleeding. Patient's bleeding could not be controlled by direct pressure and Monsel's solution. Doctor B performed vaginal packing with 2 pieces of long gauze. The number and type of gauze used were documented in the medical notes. In the next morning round, doctor C noted that the patient's PV bleeding had stopped

and ordered the packing to be removed by the on call team. Vaginal packing was removed without documenting the number of removed long gauze. 3 days later, the patient informed ward staff that something was sticking out from her vagina. One piece of long gauze was subsequently removed from the patient's vagina.

Key contributing factors

1. There was no attempt to document vaginal packing in medical notes before removal procedure.
2. Staff assumed that only one piece of gauze was packed into patient's vagina.

Recommendations

1. Reiterate the importance of checking medical notes before performing any treatment or procedure.
2. Reiterate the importance of properly documenting the number of gauze or other medical materials left inside and removed from the patient's body in medical notes.

Case 7: Long gauze

A patient with vaginal vault prolapse and stress incontinence underwent a corrective operation. A long gauze roll was completely packed into the patient's vagina for haemostasis at the end of operation and was intended to be removed on the next day but was not documented in the post-operative order. The patient was discharged 3 days after operation without removing the long gauze roll. The patient noticed a foreign body in the vagina at home. She returned to the hospital for removal of the gauze the next day. There was no wound infection or bleeding.

Key contributing factors:

1. Incomplete information was given on the use of long gauze in the post-operative order and during handover.
2. The gauze was fully packed into the patient's vagina.

Recommendations:

1. Document clearly all special post-operative care and necessary follow up actions on the patient's post-operative order.
2. Review the method of vaginal packing, such as leaving the gauze tail outside the vagina, to mitigate the risk of gauze retention.

Case 8 & 9: Retained stylet after Port-a-Cath insertion (2 cases)

A Port-a-Cath with special features of preloaded stiffening stylet was inserted for patient A for palliative chemotherapy. "No resistance" was detected upon flushing of the catheter. Chest X-ray after removal of Port-a-Cath catheter showed a linear metallic foreign body. The patient was called back and the stylet was retrieved uneventfully. The hospital reviewed and noted the use of similar catheter in another patient. The X-rays were reviewed and showed a retained stylet which was removed subsequently. In both cases, all involved surgeons were not aware of the new special features of the catheter. The Hospital Authority has immediately issued risk alerts to hospitals to review the patients using similar catheters.

Key contributing factors:

1. The stiffening stylet was preloaded inside the catheter with no alert label given inside the package.
2. Surgeons were not familiar with the new model of catheter preloaded with stylet.

Recommendations:

1. Recommend the manufacturer to enhance the alert measure of the presence of preloaded stiffening stylet.
2. Implement a mechanism to coordinate and monitor the use of new medical consumables to ensure sufficient trial of the consumables before procurement and to enforce adequate training to all relevant staff.

Category 3: ABO incompatibility blood transfusion

Incorrect blood transfusion to a patient

A patient on Continuous Ambulatory Peritoneal Dialysis was admitted for peritonitis. The patient required transfusion and his blood group is O+. The blood transfusion checking procedures were completed. After 2 minutes of blood transfusion, a nurse noticed that there were air bubbles in the tubing, which were difficult to eliminate. Since the concerned nurse needed to start a medication round shortly, another nurse was assigned to prepare a new transfusion set. The assigned nurse mistakenly connected the new tubing to a patient with blood group AB+ in the adjacent bed, without repeating the full checking procedures. After 5 minutes, the nurse discovered the error and stopped the transfusion immediately. About 5mL group O+ blood was transfused. There was no adverse reaction.

Key contributing factors

1. No verification of patient identification before resuming an interrupted transfusion process.
2. Inadequate awareness on the importance and need for high risk procedures such as blood administration procedure to be completed by oneself.
3. Communication breakdown caused by misinterpretation and unclear instructions between the nurses.

Recommendations

1. Ensure correct patient identification at critical steps during the blood transfusion process (including sample collection, administration and reconnection after interruption).
2. Perform assessment, such as patient identification and procedure verification, to ensure transfusion to the correct patient when handling transfusion reconnection after interruption of blood administration process.
3. Reinforce amongst staff the importance of delivering clear instructions to avoid misinterpretation and encourage staff to speak up and clarify uncertainties.

Category 5: Intravascular gas embolism resulting in death or neurological damage

Case 1: 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.

Case 2: Small gas locules in brain

A patient had short gut syndrome after bowel resection for massive bowel ischaemia. Total parenteral nutrition (TPN) was given. Hickman catheter was inserted. The patient complained of nervousness with high blood pressure few weeks after insertion of the Hickman catheter. Symptomatic treatment was given. The patient's condition deteriorated a few hours later with limb weakness. Both lumens of the Hickman catheter were connected to TPN infusion via IV line connectors with no air bubble nor leakage being observed. The dressing of catheter insertion

site was dry and intact. Emergency CT brain showed small gas locules in the right brain. The patient was escorted for hyperbaric oxygen therapy.

RCA Panel concluding finding and recommendations:

1. The Panel considered different potential sources of air, but the exact root cause could not be pinpointed. The presence of Hickman catheter could be the possible source of air embolism.
2. Develop a guideline on handling of central venous catheter (CVC) to ensure the checking of integrity of CVC, tight connections with CVC, and adherence to the manufacturer's recommendations.
3. Conduct regular structured induction and refresher training for staff on handling of CVC.

Category 6: Death of an inpatient from suicide (including home leave)

Seven of the eight *inpatient suicide* cases are highlighted below:

Home leave patient

Case 1

A patient was admitted for chest, epigastric and back pain. During hospitalisation, the patient had 2 uneventful home leaves. The patient was subsequently granted another home leave while accompanied by family members. The patient was found to have committed suicide by hanging the next morning

Case 2

A patient was admitted for palliative care for metastatic cancer. Psychological and spiritual assessment performed on admission was uneventful. The patient did not express any suicidal idea. The patient went on home leave. Due to commitment in work, family members noted difficulties in caring for the patient during home leave. The patient was referred to the Medical Social Worker for care evaluation and psychosocial support. As the patient's family was able to apply for leave from work to look after patient, the patient requested for home leave again which was agreed by the family members. However, the patient committed suicide the next morning by jumping from height at home.

Inpatient

Case 3

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.

Case 4

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.

Common 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.

Common 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, speak up of suicidal risk between parties involved in the patient care.

Missing patient

Case 5

A drug addict on detoxification treatment was admitted for COPD exacerbation. The patient was found to have committed suicide by jumping from height at home.

Case 6

A patient was admitted for increased abdominal pain and newly diagnosed lymphoma. She was started on chemotherapy. 11 days after admission, the patient was assessed by clinical psychologist and psychiatrist and was diagnosed to have depressed mood but no suicidal idea.

Suicidal precaution was implemented. Flexible visiting hour was granted. After subsequent assessments, the patient was found to have improved mood, sense of hope and still no suicidal idea. Suicidal precaution was subsequently taken off by the clinical team. A week later, patient was last seen walking in ward with her husband. She was found missing about 5 mins later. About 90 mins later, the hospital was informed that the patient had committed suicide by jumping from height.

Case 7

A patient with history of Adjustment Disorder, Depression and attempted suicide, was admitted for abdominal pain. No suicidal risk was identified during initial assessment. The patient was given Tramadol injection for pain relief with good effect. 2 days later, the patient complained of increased abdominal pain and was then kept 'nil by mouth'. Tramadol injection was given again that evening. Since the patient was found taking her own food afterwards, further explanation and advice on her condition was provided by nurse. The following day, the patient had nausea, vomiting of clear fluid and abdominal pain. Tramadol and Maxolon injection were given. 2 days later, the patient was found missing. The nurse then called the patient's mobile phone. The call was answered by the patient's husband who replied that the patient had committed suicide by jumping from height at home.

Common Recommendations:

1. Reinforce the message to patients and their visitors of the importance and need for informing clinical staff before leaving the ward.
2. Reinforce the practice of careful reading of information in medical notes during patient admission procedure.

Category 7: Maternal death or serious morbidity associated with labour or delivery)

Two of the three *maternal death* cases are highlighted below:

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.

Category 8: Infant discharged to wrong family or infant abduction

Mother took baby home without permission

A 9-month-old baby was admitted for gastroenteritis and upper respiratory tract infection. The nurses provided ward orientation to the mother, including the information on the importance of informing ward staff before leaving the ward. The next morning, the baby was found missing. Subsequently, it was confirmed that the mother had brought the baby home, and had brought the baby back 2 hours later. CCTV recording revealed that, the security staff had released the door without checking the permission-to-leave card.

Key contributing factors:

1. The mother had not informed the nursing staff before bringing her baby home.
2. Inexperienced security staff had not complied with the ward security instructions.
3. At the time of incident, the ward was undergoing renovation and was relocated to another ward without Cotag alarm system installation. As a temporary measure, permission-to-leave card was implemented in the ward.

Recommendations:

1. Emphasise the importance and consequences of leaving ward without permission in the information given to parents and guardians of paediatric patients.
2. Enhance staff training / briefing on any system change.
3. Conduct infant abduction drill for foreseeable changes in the ward security system.

Annex IV

RISK MITIGATION STRATEGIES

Prescribing Parenteral Infusion

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

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

Spot the difference?

Azithromycin 500 mg IV infusion in 500ml NS q3h

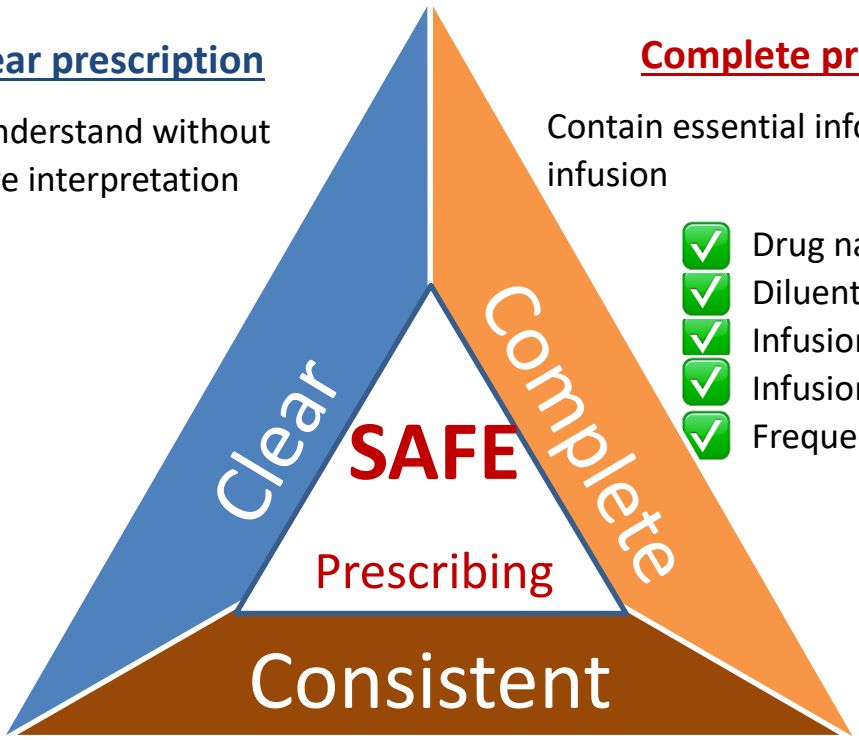
Clear prescription

Easy to understand without alternative interpretation

Complete prescription

Contain essential information for infusion

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



Consistent prescription

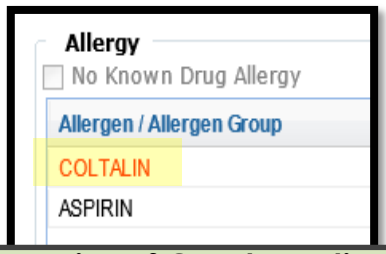
Develop standardised dilution table in hospital/cluster for reference

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

Verification of Prescription

Principle

Pay attention to drug-related records which are not subject to system checking (e.g. **Free-text drug allergy history**)



Tips of Good Practice

Print and highlight details of drug-related allergy/ADR/alert information which are not subject to system checking. Attach the prescription for checking and potential intervention.

Drug Dispensing

Principle

Ensure safety measures are in place to facilitate differentiation of **look-alike sound-alike drugs (LASAD)**

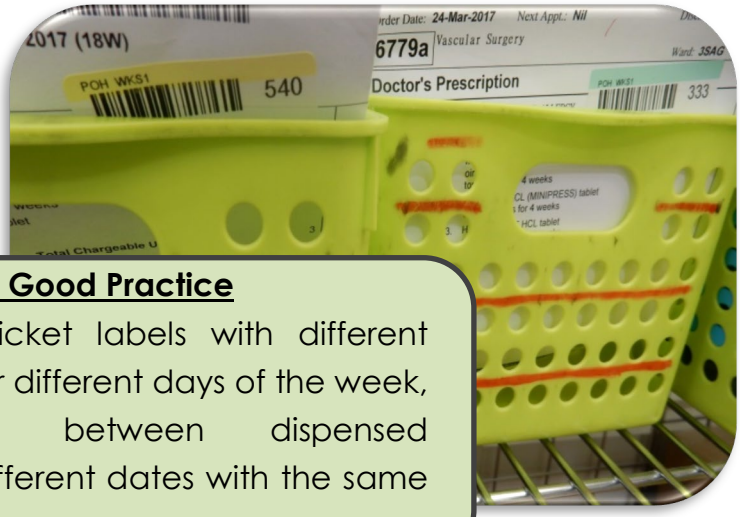
Tips of Good Practice

Attach images of preparations (e.g. different types of Insulins) at dispensing point for easy reference.

Drug Issuing

Principle

Ensure that the dispensed drugs are issued to **correct patient**



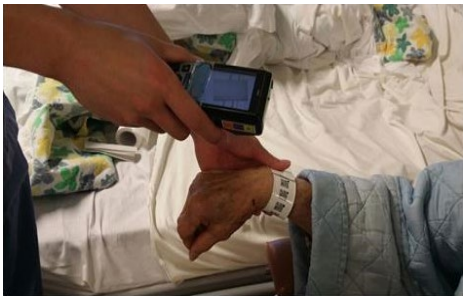
Tips of Good Practice

Use out-patient ticket labels with different coloured stripes for different days of the week, to differentiate between dispensed medications on different dates with the same ticket number.

Important Steps for Drug Administration

Strictly follow the **"FIVE Rights"** principle: right **DRUG** in right **DOSE** is given to the right **PATIENT** by the right **ROUTE** at the right **TIME**; and document after patient's consumption of medication.

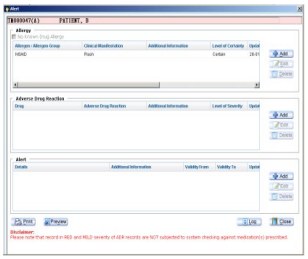
Patient's identity

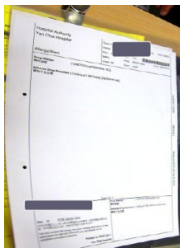


Check against Medication Administration Record or scan wristband of patient for In-Patient Medication Order Entry (IPMOE) system checking before drug administration

Alert & reminder

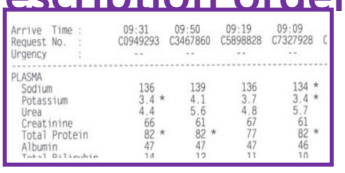
Hospital Authority CMS





Check patient's information carefully, especially the known drug allergy status against Clinical Management System (CMS), printout sheet and IPMOE

Prescription order



Arrive Time :	09:31	09:50	09:19	09:09
Request No. :	C0949293	C3467860	C5898828	C7327928
Urgency :	--	--	--	--
PLASMA				
Sodium	136	139	136	134 *
Potassium	3.4 *	4.1	3.7	3.4 *
Urea	4.4	5.6	4.8	5.7
Creatinine	66	61	67	61
Total Protein	82 *	82 *	77	82 *
Albumin	47	47	47	46

Countercheck prescription order with reference to patient's medical notes in medical record and laboratory results

Reference: HA Guidelines on Safe Medication Management – Prescribing, Dispensing and Administration

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