ANNUAL REPORT ON SENTINEL AND SERIOUS UNTOWARD EVENTS

1 October 2012 – 30 September 2013

HOSPITAL AUTHORITY HONG KONG

January 2014

醫院管理局
HOSPITAL AUTHORITY

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ACKNOWLEDGEMENT

This is the sixth Annual Report on Sentinel and Serious Untoward Events. By continuously learning from sentinel and serious untoward events and by building safe systems, processes and practices to mitigate the recurrence of such events, it demonstrates the Hospital Authority's commitment to quality and patient safety.

We would like to take this opportunity to acknowledge all frontline staff, nurses, clinicians, risk managers and executives for their immense dedication and support in improving patient safety in recent years. Without their invaluable and incessant efforts in planning and executing various improvement initiatives to enhance patient safety through risk identification and mitigation, the publication of this annual report would not have been as meaningful.

Patient Safety and Risk Management Department

Quality and Safety Division

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EXECUTIVE SUMMARY

This 6th annual report provides a snapshot of the sentinel and serious untoward events reported through the Advance Incident Reporting System (AIRS) to the Hospital Authority Head Office (HAHO) from 1 October 2012 to 30 September 2013. Under the standing Sentinel and Serious Untoward Event Policy (The Policy) effective since January 2010, the hospitals have to timely report these events and set up expert panels to review and analyse their root causes as well as make recommendations for management review in improving safety in patient services.

2. The Hospital Authority (HA) is committed to patient safety and risk management by continuously building safe systems, processes and practices through lessons learnt from incident management. It is also reinforcing the senior executives' patient safety round system to receive direct feedback from frontline staff and identify areas of concern with a view to developing corporate strategies to mitigate risks to acceptable levels.

3. This annual report summarizes a total of 130 events reported from 1 October 2012 to 30 September 2013 comprising 26 (20%) Sentinel Events (SEs) and 104 (80%) Serious Untoward Events (SUEs). Compared with the last reporting period, there is a reduction in SEs from 34 to 26 cases while the number of SUEs remains almost the same at 104 cases.

Sentinel Events

4. Of the 26 SEs, 23 (88.5%) occurred in general hospitals. A breakdown of these events revealed that 10, 9 and 4 were related to retained surgical or interventional items, inpatient suicide and procedures performed on wrong patients or body parts respectively. Of the 11 SEs which resulted in deaths, 9 were related to inpatient suicide, 1 to maternal death and 1 to sudden deterioration of patient immediately after being transferred to another cubicle.

5. An investigation panel was set up to identify the root causes of each of these SEs and make recommendations for improvement. The underlying contributing factors for these events were multiple and were attributable to systems, processes and human conditions. According to panel reviews, the major contributing factor for retained surgical items was the lack of systems for identification of broken small fragments of surgical instruments and catheters. Another common contributing factor was staff's non-compliance with the "SIGN IN" process of surgical safety. For surgical procedures performed on the wrong patient or body parts, the common contributing factors were staff's non-compliance with the "SIGN IN" and "TIME OUT" processes under the Surgical Safety Policy and inadequate documentation.

6. To improve surgical safety, the investigation panels recommended:

(i) Surgical safety checking processes should be reinforced through team briefings and debriefings before and after procedures;

(ii) Surgical site markings should be as proximal to the operation sites as

possible to facilitate safety checks; and

(iii) The system of clinical mentorship and supervision of interns and trainees should be reviewed by hospitals.

7. The contributing factors of the patient suicide events were mainly related to the underlying medical and mental health conditions and concealed suicidal thoughts of the patients. Other factors were related to inadequate security control and ineffective communication among healthcare professionals.

8. To further improve patient safety in wards, the panels recommended hospitals to conduct regular environment scanning of risk areas for appropriate risk reduction actions, including security measures for prevention of infant abduction in hospital. The panels also advised hospitals to improve communication among professional teams, patients and their family members in the care planning and delivery processes.

9. To prevent recurrence of similar incidents related to patient transportation, improvement actions recommended were promulgation of guideline on transportation of critically-ill patients and education of staff on the appropriate use of therapeutic medical equipment, e.g. assisted breathing devices.

Serious Untoward Events

10. Among the 104 reported SUEs, 96 were medication errors of which 43 (44.8%) involved giving medication to patients with documented "Known Drug Allergy (KDA)". Most of these KDA patients had minor or insignificant consequences.

The common KDA drugs were the Penicillin group (Augmentin in particular), Non-Steroidal Anti-inflammatory Drug (NSAID) and Paracetamol.

11. The outcome of SUEs could have led to death or permanent harm of the patient. Since the majority of the SUEs were related to medication errors, the investigation panels recommended that hospitals should improve the systems of clinical communication, particularly in accurate documentation of drug allergy in clinical information systems and patient medical records. To reduce SUEs due to medication errors, clinical information systems should facilitate healthcare professionals' access to salient drug information, such as the ingredients of drugs, dilution tables and drug groups. Hospitals should enhance effective communication among professionals during consultation and supervision in the prescription, dispensing, and administration of medications.

12. Other recommendations to improve medication safety included enhancing display of medication information in clinical information systems to facilitate workflow and clinical decisions, and further promulgating the safe use of infusion pumps and related safety practices, e.g. labelling of infusion lines and syringes.

13. Healthcare is delivered in a high risk environment characterized by the existence of different professional teams, technology innovation, complex diagnostic and treatment procedures, system designs as well as resources and issues in human communication. The aim of publishing this Annual Report is to share the lessons learnt from SEs and SUEs with a view to continually building a safe patient care

organization in an ever changing environment. The conjoint and unfailing efforts of all frontline staff and management executives in identifying and mitigating clinical risks in our high risk environment are greatly appreciated.

CHAPTER 1 – INTRODUCTION

14. The healthcare delivery system has become more complicated with the advancement and diversification of healthcare services in recent years. Despite all efforts and intentions to minimize errors and maximize quality, it is well recognized that errors impacting the lives of patients and families, as well as healthcare providers and organizations, can and do occur. Noting that some of these medical errors are preventable, healthcare providers worldwide, including the Hospital Authority, have been working hard to explore effective ways to prevent / reduce these errors and to improve patient safety.

15. Reporting when things go wrong is essential but it is only part of the process of improving patient safety. In patient safety incident management, it is equally important that we look at the underlying causes, understand and articulate what can be done to prevent recurrence. It is also well recognized that the sharing and communication of patient safety knowledge and analysis of patient safety incidents are undoubtedly important components in the promotion of patient safety. The lessons learned and knowledge gained should be shared not only locally but also globally, as the same or similar incidents can occur in any organization, system or country, and the learning from one organization should be transmitted to others to prevent harm.

16. Therefore, in addition to the publishing of the Annual Report on Sentinel and

Serious Untoward Events (Annual Report), the HA has joined the Global Patient Safety Alerts (http://www.globalpatientsafetyalerts.com/English/Pages/default.aspx) and linked the HA Risk Alert (HARA) newsletters with similar publications produced by healthcare organizations worldwide. This has enabled HA to build up a collective understanding and knowledge on the identification, prevention, mitigation and management of patient safety incidents and risks.

17. This is the sixth Annual Report since the implementation of the Sentinel Event Policy in October 2007. All SEs and SUEs reported by HA hospitals from 1 October 2012 to 30 September 2013 were included. It has summarized the reviews on reported events and patient safety risks as well as improvement opportunities and learning points identified through Root Cause Analysis (RCA). It has also outlined various planned or implemented risk reduction measures to prevent the recurrence of similar events.

18. The HA has all along strived to maintain high quality services and enhance patient safety. We sincerely hope that the publication of this Annual Report will enhance the sharing of patient safety knowledge and lessons learned from adverse events and help make greater progress towards improving patient safety.

CHAPTER 2 – SENTINEL AND SERIOUS UNTOWARD EVENT POLICY

19. With effective from 1 January 2010, the Sentinel and Serious Untoward Events Policy (Annex I) has superseded the Sentinel Event Policy implemented in October 2007. The Policy covers the following categories:

Sentinel Events (9 Categories)	
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 labour 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)
Serious Untoward Events (2 Categories)	
1	Medication error which could have led to death or permanent harm
2	Patient misidentification which could have led to death or permanent harm

20. The Policy defines the process of identification, reporting, investigation and

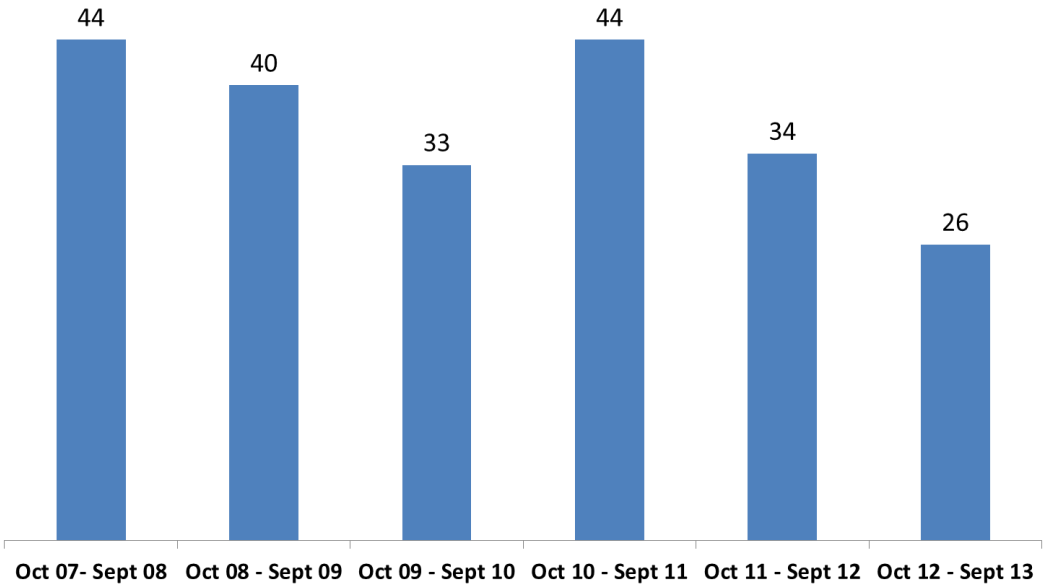
management of SEs and SUEs. It also provides a framework for the reporting, response and management of SEs and SUEs. According to this Policy, all SEs and SUEs will be investigated by a RCA panel which is an expert panel to identify possible causes and explore improvement measures. The hospital will then submit a RCA report to HAHO in eight weeks' time on its findings, views and improvement measures. Quality and Safety Departments in hospitals and clusters will facilitate and monitor the implementation of these measures. The Patient Safety and Risk Management Department of HAHO will continue to promote these risk mitigation programmes.

CHAPTER 3 – SENTINEL EVENTS REPORTED FROM 1 OCTOBER 2012 TO 30 SEPTEMBER 2013

Frequency of Reported Sentinel Events

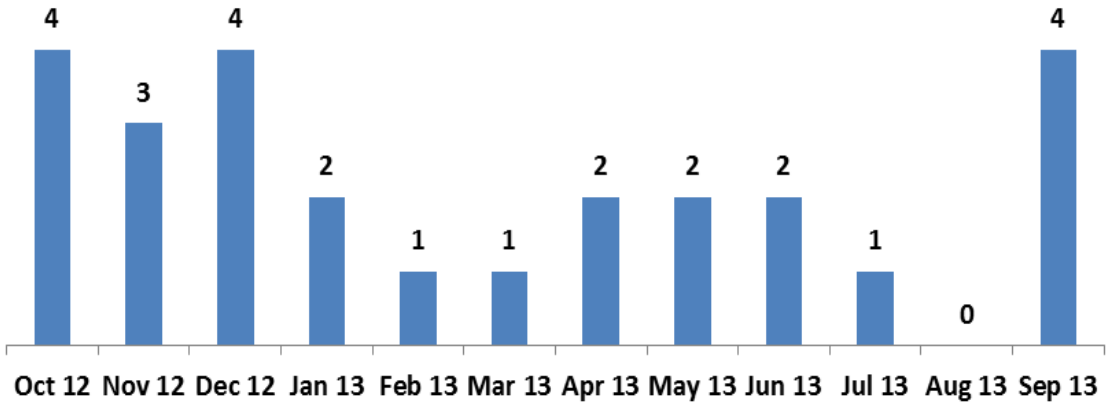
21. A total of 26 SEs were reported from 1 October 2012 to 30 September 2013 (Fig. 1). A decrease in SEs was recorded for the second consecutive year when compared to the previous year.

Figure 1: The Number of SEs



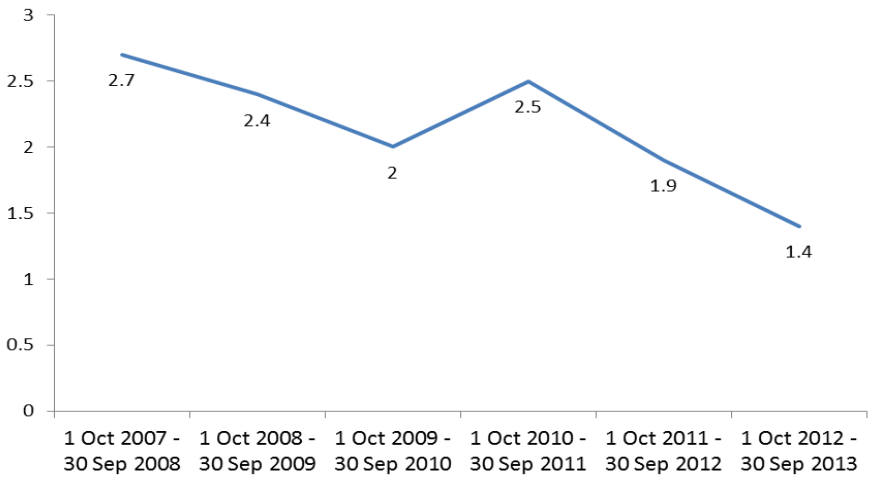
22. The monthly distribution of reported SEs from October 2012 to September 2013 is shown in Figure 2.

Figure 2: The Number of SEs by Month



23. The incident rate of reported SEs was 1.4 per 1,000,000 episodes of patient discharges and deaths / attendances for 12 months from 1 October 2012 to 30 September 2013[1]. The incident rate continued to decrease despite the increase noted in 2010-2011 as shown in Figure 3.

Figure 3: The Incident Rate of Reported SEs per 1,000,000 Episodes of Patient Discharges and Deaths / Attendances

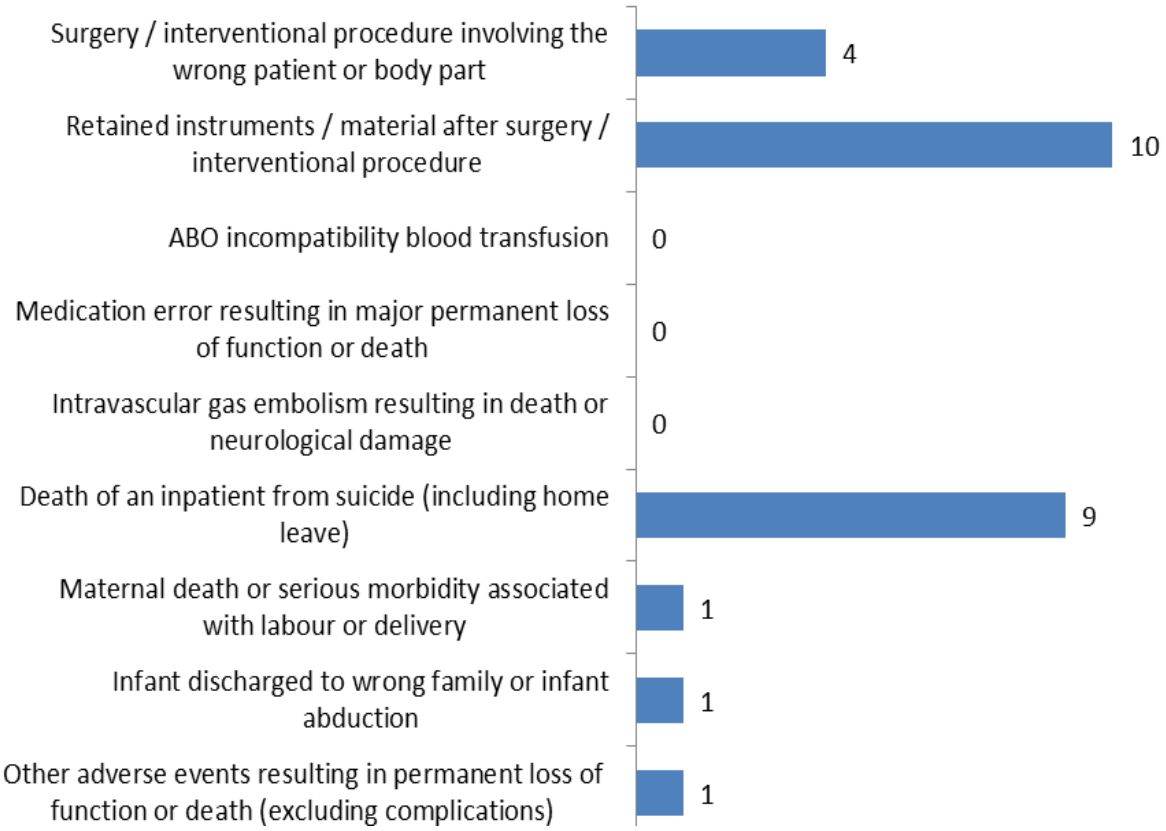


[1] Including total inpatient and outpatient discharges as well as deaths and ambulatory service attendances as defined in the HA Controlling Officer's report, 2013-14

Breakdown of Reported Sentinel Events by Category

24. A breakdown of the number of SEs by category for the 12 months period from 1 October 2012 to 30 September 2013 is shown in Figure 4, and the percentage distribution of SEs in Figure 5.

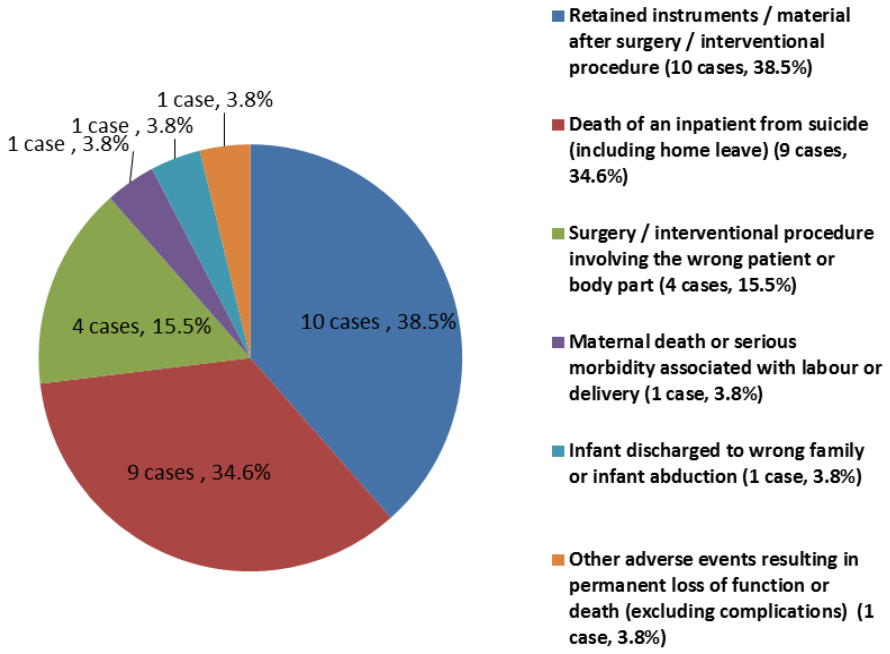
Figure 4: Breakdown of SEs by Category



25. A total of 26 SEs was reported from 1 October 2012 to 30 September 2013. The top 3 most commonly reported SEs were: 10 cases of "Retained instruments or other material after surgery / interventional procedure" (38.5%), 9 cases of "Death of

an inpatient from suicide (including home leave)" (34.6%) and 4 cases of "Surgery / interventional procedure involving the wrong patient or body part" (15.5%).

Figure 5: Distribution of SEs



Brief Description of the Reported Sentinel Events by Category

- **Retained instruments or other material after surgery / interventional procedure: 10 cases (38.5%)**
  - Surgical gauze / ribbon gauze: 3 cases;
  - Broken segment of wound drain / corrugated drain: 2 cases;
  - Broken fragment of tip of artery forceps: 1 case;
  - A piece of bone cement: 1 case; and
  - Part of instrument (carriage spacer, internal stiffener stylet, cement plug holder): 3 cases.

- **Death of an inpatient from suicide (including home leave): 9 cases (34.6%)**
  - By patient status: 4 patients committed suicide while staying in hospital, 4 were on home-leave and 1 was a missing patient who committed suicide outside the hospital compound; and
  - By patient group: 3 patients had mental illness and 6 had terminal or chronic illness.

- **Surgical or interventional procedures involving the wrong patient or body part: 4 cases (15.5%)**
  - Wrong side nerve block: 2 cases;
  - Wrong side chest tapping: 1 case; and
  - Removal of wrong side JJ stent: 1 case.

- **Maternal death or serious morbidity associated with labour or delivery: 1 case (3.8%)**

  Maternal death due to amniotic fluid embolism.

- **Infant discharged to wrong family or infant abduction: 1 case (3.8%)**

  The infant was taken home by the mother without giving prior notice to the hospital.

- **Other adverse events resulting in permanent loss of function or death (excluding complications): 1 case (3.8%)**

  Death of a Motor Neuron Disease (MND) patient after being transported to

another cubicle in the same ward.

Outcome of Reported Sentinel Events

26. The outcome of reported SEs was as follows:

- Minor or insignificant consequence (i.e. no injury sustained / minor injury): 8 cases (30.8%);
- Major / moderate consequence (i.e. temporary / significant morbidity): 7 cases (26.9%);
- Extreme consequence (i.e. major permanent loss of function / disability or death): 11 cases (42.3%);
    - Patient suicide: 9 cases;
    - Maternal death associated with labour or delivery: 1 case; and
    - Other adverse events resulting in permanent loss of function or death: 1 case.

Hospital Settings where Sentinel Events Occurred

27. Of all SEs reported during the period, 88.5% occurred in general hospitals (Table 1).

Table 1: Setting Where SEs Occurred

Setting	No. of SEs (%)
General hospitals	23 (88.5%)
Psychiatric hospitals	2 (7.7%)
Psychiatric units within general hospital	1 (3.8%)

28. The number of SEs in the past six years from 1 October 2007 to 30 September 2013 is depicted in Table 2.

Table 2: The Number of SEs by Category from 1 October 07 to 30 September 13

Reported Sentinel Events	1-10-07 to 30-9-08	1-10-08 to 30-9-09	1-10-09 to 30-9-10	1-10-10 to 30-9-11	1-10-11 to 30-9-12	1-10-12 to 30-9-13	Total number
Surgery / interventional procedure involving the wrong patient or body part	5	10	5	3	5	4	**32**
Retained instruments or other material after surgery / interventional procedure	10	13	12	18	14	10	**77**
ABO incompatibility blood transfusion	1	0	0	1	0	0	**2**
Medication error resulting in major permanent loss of function or death	0	0	1	1	0	0	**2**
Intravascular gas embolism resulting in death or neurological damage	0	0	1	0	0	0	**1**
Death of an inpatient from suicide (including home leave)	25	15	11	20	10	9	**90**
Maternal death or serious morbidity associated with labour or delivery	1	2	2	1	2	1	**9**
Infant discharged to wrong family or infant abduction	1	0	0	0	0	1	**2**
Other adverse events resulting in permanent loss of function or death (excluding complications)	1	0	1	0	3	1	**6**
Total Number	**44**	**40**	**33**	**44**	**34**	**26**	**221**

CHAPTER 4 – SERIOUS UNTOWARD EVENTS REPORTED FROM 1 OCTOBER 2012 TO 30 SEPTEMBER 2013

29. A total of 104 SUEs was reported from 1 October 2012 to 30 September 2013. The number of reported SUEs by year since the implementation of the SE & SUE Policy is shown in Figure 6 and the distribution of SUEs by month from October 2012 onwards is presented in Figure 7.

Figure 6: The Number of SUEs

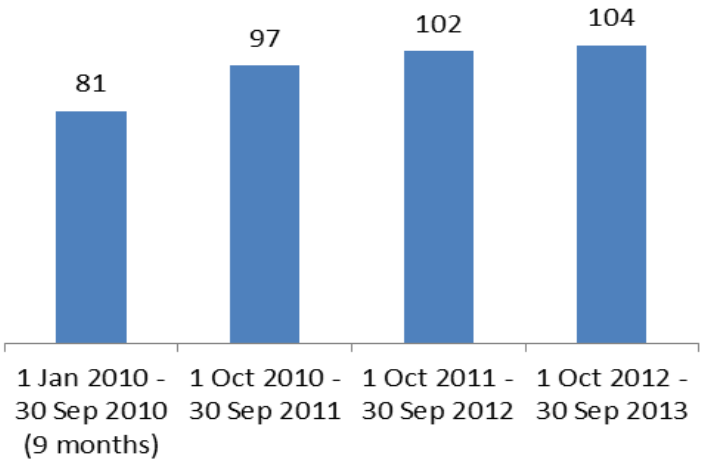
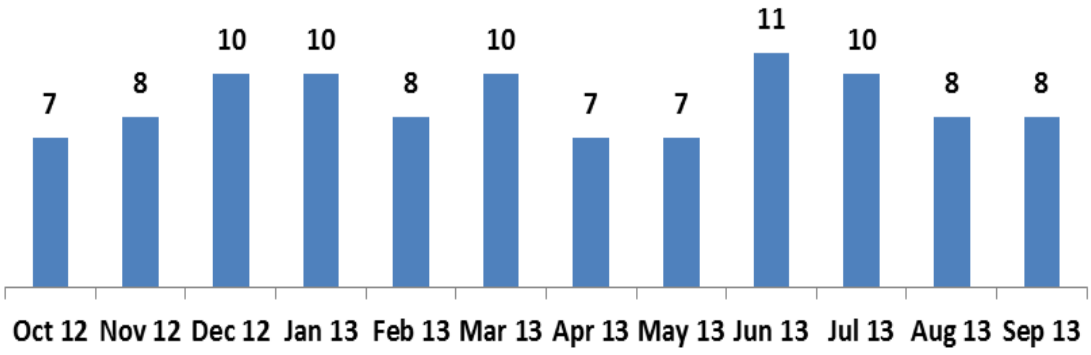
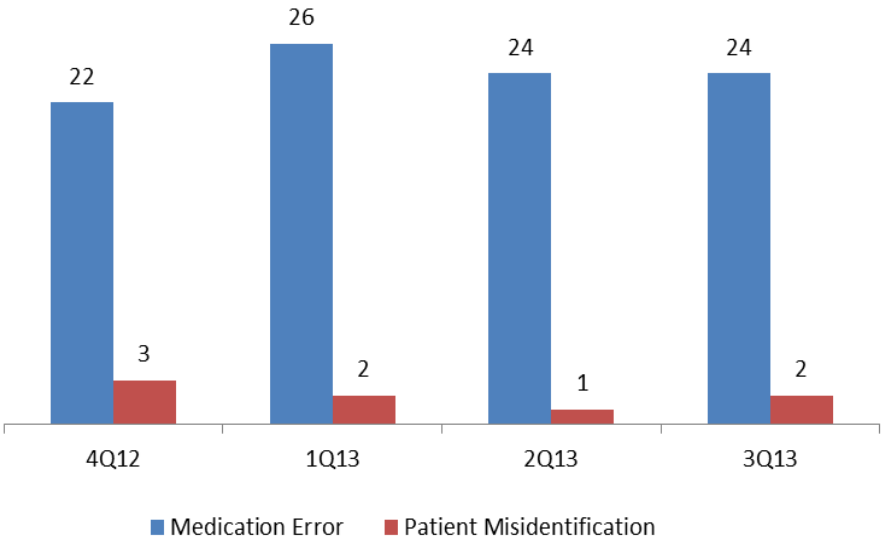


Figure 7: The Number of SUEs by Month



30. A breakdown of reported SUEs from October 2012 to September 2013 revealed that 96 cases (92.3%) were due to medication error and 8 (7.7%) to patient misidentification (Fig. 8).

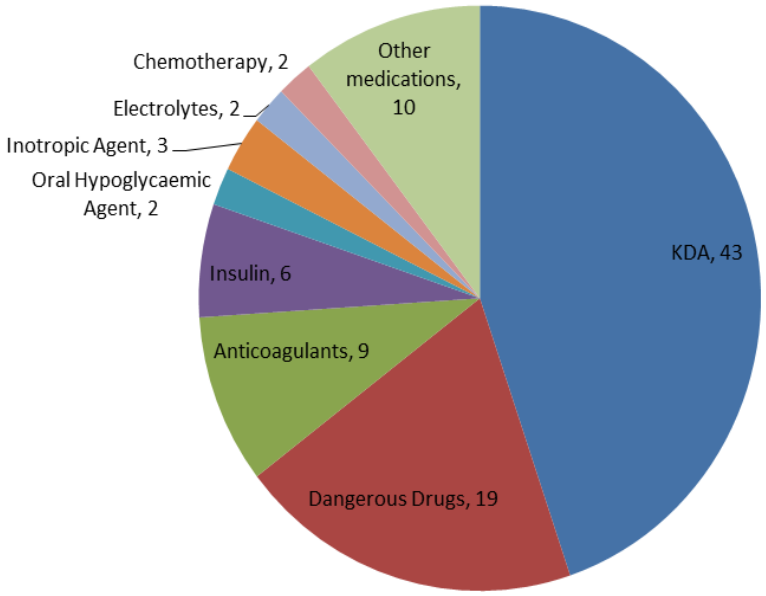
Figure 8: Breakdown of SUEs by Quarter



Serious Untoward Events from Medication Error

31. Among the 96 SUEs arising from medication error, 43 cases (44.8%) were related to the prescription or administration of "Known Drug Allergy" (KDA) drugs. Error related to "dangerous drugs" was the second most common group, with 19 cases (19.8%) reported. This was followed by medication errors involving "anticoagulants" (9 cases; 9.4%), "insulin" (6 cases; 6.2%), "inotropic agents" (3 cases; 3.1%), "concentrated electrolytes" (2 cases; 2.1%), "oral hypoglycaemic agent" (2 cases; 2.1%), "chemotherapy" (2 cases; 2.1%) and "other medications" (10 cases; 10.4%). The distribution of medication error is shown in Figure 9.

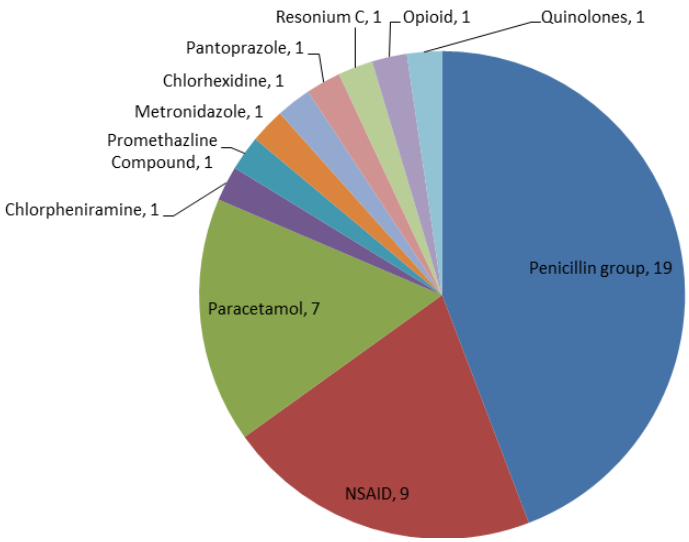
Figure 9: Distribution of Medication Error



32. Despite the 43 KDA cases (44.8%), 17 cases out of the 96 medication errors were related to infusion errors (17.7%). These two groups constitute 62.5% of the total number of SUEs.

33. Of the 43 cases related to KDA, the most commonly involved drugs were Penicillin group (19 cases, 44.2%), NSAID (9 cases, 20.9%) and Paracetamol (7 cases, 16.3%). These three groups constituted 81% of the total KDA incidents. The number and distribution of KDA drugs are indicated in Figure 10.

Figure 10: Distribution of Prescribed or Administered KDA Drugs



34. The majority of patients who were prescribed or administered with KDA drugs had no allergic reactions. A few patients developed allergic symptoms such as skin rashes and generalized urticaria over limbs after taking the drugs.

Serious Untoward Events from Patient Misidentification

35. There were 8 reported SUEs resulting from patient misidentification. These included incidents of misidentification of patients during drug administration, in the electronic patient record, and misfiling of laboratory results in patients' note resulting in prescription of inappropriate treatment. The type of patient misidentification incidents is summarized in Table 3:

Table 3: Distribution of Patient Misidentification Incidents

Description	4Q12	1Q13	2Q13	3Q13
Misidentification of patient during drug administration	2	1	1	1
Misidentification of patient in clinical system - Electronic Patient Record (ePR) summary	1	0	0	0
Misidentification on ECG record resulting in unnecessary treatment	0	0	0	1
Misfiling of patient's laboratory report leading to inappropriate or unnecessary treatment	0	1	0	0

Outcome of Reported Serious Untoward Events

36. The outcome of reported SUEs was as follows:

- Minor or insignificant consequence: 89 cases (85.6%);
- Moderate consequence (required higher level of care): 15 cases (14.4%);
- Temporary major consequence: NIL.

CHAPTER 5 – ACTIONS TAKEN AND DISCUSSION

Analysis of Reported Sentinel Events

Sentinel Event Reporting

37. There were 26 SEs reported from 1 October 2012 to 30 September 2013 via AIRS. As a reference, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in the United States received 901 SE cases in 2012[2]. The number of reported sentinel events recorded by the Department of Health, State Government of Victoria, Australia[3] was 58 in 2010-2011 and that of Western Australia[4] was 96 in the same period.

38. There were 8 fewer cases of reported SEs in HA in 2012/13 when compared to the last reporting period, with a notable decrease in "Retained instruments or other material after surgery / interventional procedure".

Types of Sentinel Events Reported

39. Table 4 compares the most common types of reported SEs in HA and

[2] The US Joint Commission, Summary Data of Sentinel Events Reviewed by The Joint Commission: as of June 30, 2013
[3] Supporting patient safety – Sentinel event program annual report 2010-11. Department of Health, State Government of Victoria, Australia.
[4] Delivering Safer Healthcare in Western Australia – WA Sentinel Event Report 2010/11. Department of Health, State Government of Western Australia, Australia.

Department of Health, Service of State Government of Victoria and Department of Health, Western Australia.

Table 4: The Most Common Reported Types of SEs

HA	Department of Health, State Government of Victoria, Australia	Department of Health, State Government of Western Australia, Australia
Retained instruments /material after surgery / interventional procedure (10 cases, 38.5%)	Death of an inpatient from suicide (9 cases, 15.5%)	Death of an inpatient from suicide (7 cases, 7.3%)
Death of an inpatient from suicide (including home leave) (9 cases, 34.6%)	Retained instruments or other material (5 cases, 8.6%)	Maternal death or serious morbidity associated with labour or delivery (3 cases, 3.1%)

*The reported inpatient suicides also include suicides committed during home leave in Hong Kong whilst only suicides committed in inpatient units are reported in Australia.

40. As shown in Table 4, "inpatient suicide" and "retained instruments" were the most commonly reported SEs in HA.

41. According to the World Health Organization (WHO), the global mortality rate for suicide in 2000[5] was 16 per 100,000 populations while that of Hong Kong has increased from 11.8 in 1995 to 14.6 per 100,000 populations in 2009[6].

[5] World Health Organization: suicide prevention (SUPRE).
[6] World Health Organization: suicide rates, by gender, China, Hong Kong SAR, 1995-2009.

Contributing Factors for Sentinel Events

42. The HAHO appoints a RCA Panel for each SE to conduct investigation and analysis, identify root causes and contributing factors as well as recommend appropriate improvement measures to prevent recurrence of similar SEs in future. There was an average of three contributing factors identified for each sentinel event. The most commonly identified contributing factors of the reported SEs were related to process, communication and staff. The key contributing factors identified by RCA Panels for each category of SEs are summarized below:

Key contributing factors for "surgery/ interventional procedure involving the wrong patient or body part"

Process:

- The surgical site marking was not marked accurately to alert the clinical team.
- Lack of verification on the side of procedure and site marking.
- Lack of standards of practice on performing ultrasound-guided chest tapping.
- No documentation on the plan of removal of the JJ stents in the discharge summary of Clinical Management System (CMS).

Staff:

- Non-compliance with the surgery safety policy – "one should perform "SIGN IN" before anaesthesia."
- The Surgical Safety Checklist was not followed to identify the correct side

prior to administration of local anaesthetic.

- Lack of alertness in anaesthetic procedure safety.
- Unawareness of the presence of two JJ stents.

Key contributing factors for "retained instruments or material"

Process:

- No standard procedure for drain removal.
- Once in situ, the hemiarthroplasty made checking of foreign body inside the acetabulum difficult.
- System of gauze counting was not in place.
- Lack of system to identify defective instrument.
- Insufficient measures to prevent slipping of cement into the joint space.
- Lack of good practice to ensure complete removal of wound packing materials.
- Lack of adequate wound exploration despite the patient's report of the missing drain.
- Use of different methods and instruments which caused confusion.

Communication:

- Inadequate briefing to the operating team before operation on the use of new implant.
- Insufficient communication with the patient on wound / drain management.

Staff:

- Unawareness of the possibility of broken drain when "no side hole" on the dislodged drain was observed.
- Non-compliance with "SIGN OUT" of surgical safety.

- The surgeon had not ascertained that no gauze was retained.
- Failure to notice the damaged forceps.
- Failure to detect the retained cement.
- Failure to perform integrity check of instruments upon the cementation procedure.
- Unfamiliar with the procedure due to infrequent use of complex instrument.

Equipment:

- Absence of radiopaque marker on the involved drain.
- Inconspicuous "Alert Cue" of the implant and instrument box to remind user to remove the carriage spacer.
- Metal fatigue causing broken instrument.
- The design of the instrument was complex and not user-friendly.

Key contributing factors for "death of an inpatient from suicide (including home leave)"

Patient:

- Underlying medical illnesses of patients and their mental health conditions, e.g. psychiatric condition and depression from the chronic illness.
- Patients had concealed own suicidal idea and plan.

Process:

- Failure of visual checking above bed level to locate left behind patients.

Communication:

- Ineffective communication among healthcare staff.

Environment & Facility:

- Inadequate environmental and security safety measures.

- Presence of high-risk facilities inside the patient toilet.

Staff:

- Failure to recognize patients' suicide thoughts.

Key contributing factor for "infant abduction"

Communication:

- Lack of timely communication among the social worker, the clinical team and the family.

Facilities:

- Inadequate access control in ward.

Equipment:

- The baby tag was not tamper-proof.

Key contributing factor for "other adverse events resulting in permanent loss of function or death (excluding complications)"

- Insufficient knowledge and experience in caring of patients on BiPAP therapy.
- Overestimation of the patient's tolerance on discontinuation of oxygen support during transportation.

Key contributing factor for "maternal death or serious morbidity associated with labour or delivery"

- No specific contributing factors could be identified in the reported case of maternal death.
- Amniotic fluid embolism is a rare but known complication of pregnancy.

Improvement Measures

43. Based on the investigation results of the reported SEs, HAHO has worked with clusters and hospitals to improve and redesign systems and work processes to enhance patient safety. Examples of risk reduction programmes introduced are outlined below:

Surgery / interventional procedure involving the wrong patient or body part

Process:

- Review the Policy to enhance anaesthetic procedure safety checking.
- Standardize the marking as proximal to the surgical site.
- Review the guidelines for JJ stent removal to include reviewing of X-ray image before the "TIME OUT" procedure.
- Develop guidelines on procedural safety.
- Verify the side of the procedure as indicated in all documents and images.

Management:

- Reinforce the surgical safety policy thoroughly – "SIGN IN" before all interventional procedures, including anaesthesia
  a) Involve all operating team members during "SIGN IN", "TIME OUT" and "SIGN OUT"
  b) Organize Crew Resource Management training.
- Review clinical supervision of trainees.
- Ensure clear documentation of JJ stent removal, including documentation in the operation record, discharge summary, booking procedure and consent form (additional remark as required).

- Review and standardize the practice of performing ultrasound-guided chest tapping.

Retained instruments or other material after surgery/ interventional procedure

Process:

- Formulate the standard procedures for wound drain removal.
- Conduct briefing on the design of the implant and the related critical checks for the team members before operation to ensure safety.
- Introduce a system of gauze counting.
- Use of raytec gauze.
- Review the haemostasis technique and equipment requirement for insertion of Tenckhoff catheter.
- Revise the existing guideline on management of missing instruments and consumables.
- Establish a tracking system to detect and replace aging instruments.
- Reinforce instrument checking before and after use.
- Devise a system to prevent and detect retained cement.
- Refine the guidelines on wound packing and documentation
    a) Reinforce accurate documentation on the use of dressing materials
    b) Mark wound site on the assessment record form
    c) Take clinical photos to facilitate communication.
- Develop a practice to ensure all packing materials are completely removed.
- Establish standard practice on exploration of wound.
- Perform pre-operative planning and templating, understand thoroughly the design and use of the instrument.

Management:

- Review training of interns on wound drain removal.
- Review mentorship and clinical supervision of interns.
- Reinforce the "speak-up" culture and empower team members to stop the operation for appropriate follow-up actions.
- Enhance the care process of wound and drain management.
- Familiar staff with design and proper use of the chosen instrument.
- Ensure the integrity and counting of individual parts of the instrument before and after the procedure.

Equipment:

- Consider using drains with radiopaque marker.
- Liaise with supplier on the design of conspicuous "Alert Cue" on the implant and instrument box.
- Review the use of protective materials to cover the acetabulum during the procedure.
- Attach a warning label on the instrument to remind staff for removal of the internal stiffener stylet and check the components during "TIME OUT".

Death of an inpatient from suicide (including home leave)

Process:

- Enhance the patient counting mechanism to ensure that patients would not be left behind when being vacated from an area.

Environment & facility:

- Conduct environmental scanning regularly to mitigate suicidal risks.
- Enhance environmental safety measures and workforce planning.

- Redesign toilet facilities and replace high-risk facilities to control environmental risk.

Communication & management:

- Reinforce communication with and education of patients and relatives on the management of brought-in medications.
- Ensure better communication among the multi-disciplinary healthcare providers who take care of patients receiving palliative care.
- Enhance staff training in recognizing suicidal risk.
- Facilitate use of reference list of facility-related provisions for prevention of inpatient suicide in non-psychiatric ward settings in the Guidelines on Hospital Security Design Planning.

Infant discharged to wrong family or infant abduction

Process:

- Explore the feasibility of improving physical security measures to enable effective patient movement control, e.g. relocate the door release button.

Equipment:

- Explore the use of tamper-proof electronic baby tags.

Management:

- Enhance the effectiveness of communication among social workers and clinical healthcare team.
- Promulgate the existing guidelines on prevention of unauthorized removal of infants / children from ward.

Other adverse events resulting in permanent loss of function or death (excluding complications)

Process:

- Extend the corporate guidelines on the use of BiPAP.

Management:

- Enhance staff education on caring patients requiring use of BiPAP.
- Reinforce promulgation of guidelines on transport of critically-ill patients.

Analysis of Reported Serious Untoward Events

44. There were 104 SUEs reported from 1 October 2012 to 30 September 2013, of which 96 were related to medication error and 8 to misidentification of patient or patient record / report leading to inappropriate treatment.

45. Out of these 104 SUEs, a few common contributing factors were identified in the RCA reports, which included:

- Lack of knowledge on medication and handling different models of infusion devices.
- Non-compliance with the guidelines on medication prescription, administration and dispensing.
- Communication breakdown among staff.

46. The key contributing factors identified for the top 3 most common SUEs – Known Drug Allergy, Dangerous Drugs and Anticoagulants – were as follows:

Known Drug Allergy

- Failure of the allergy checking function in the CMS to prompt a warning as the previous entry of drug allergy information was in free-text format.
- The ingredients of an uncommonly used drug – Medonol – were not ascertained before prescribing.
- Lack of awareness of checking allergy history before drug prescription and administration.

Dangerous Drugs

- Lack of awareness of the usual dosage of medication by different route.
- Non-compliance with the policies and guidelines on medication administration.
- Inadequate knowledge on the settings of infusion devices.
- Lack of standard dilution method for dangerous drugs for sedation.
- Incomplete information was shown on the syringe.

Anticoagulants

- Insufficient knowledge on the handling of medications with different strength.
- Non-compliance with the standard drug administration procedure.
- Miscommunication on the administration column in the Medication Administration Record (MAR).

47. The following key improvement measures were commonly recommended in the RCA reports:

- Redesign the workflow on drug prescription, dispensing and administration.
- Reinforce compliance with the existing guidelines.
- Ensure effective communication.
- Enhance staff training on medications and handling different models of infusion devices.

The recommendations for preparing drug for infusion and setting the infusion rate, and tips and safety measures for **Drug Infusion Safety** are as follows:

Prescription:

- Make reference to the drug reconstitution table prior to prescription.
- Standardize the drug dilution table and tailor-make a concise dosage chart for reference.
- Prescribe clearly the exact dosage, method of dilution and infusion rate.
- Use the electronic emergency drug calculator.

Drug preparation and administration:

- Prepare and administer drug according to the standardized dilution tables / reference cards.
- Clarify before administration when in doubt (e.g. illegible or unclear order).
- Learn and be familiar with the use of infusion devices.
- Explore the feasibility of standardizing the screen display.
- Attach “quick user guide” for easy reference.
- Ensure independent checking on “5 Rights” of drug and infusion pump

setting.

- Verify the infusion pump setting before starting the infusion.
- Recheck the infusion pump setting at 15 minutes after starting an infusion.
- Label the infusion line / syringe clearly.

The key improvement recommendations for **Known Drug Allergy** were:

Communication:

- Reinforce the need for clarifying unclear allergy information in MAR with reference to the information documented in CMS.
- Clarify with pharmacists on the active ingredients of any unfamiliar proprietary pharmaceutical products when in doubt.

Management:

- Use "generic name" rather than "brand name" to enter drug allergy information in CMS to facilitate automatic checking of drug allergy.
- Enhance staff vigilance in prescribing and administering drugs for patients with drug allergy history.
- Reinforce staff compliance with the allergy alert mechanism.
- Promote the use of visual aids to alert staff for rare allergens in topical agents.

System enhancement:

- Explore the feasibility of creating a link in CMS to the Department of Health for easy referencing of drug ingredients.
- Develop work instruction or guideline on dispensing alerts for dispensing staff.

Equipment:

- Use "stand-out" allergy notice in medical record folders of Known Drug Allergy patients.

The key improvement recommendations for **Dangerous Drugs** were:

Process:

- Standardize operation procedures including drug dilutions, checking protocols, setting dosage limits and alarm of infusion devices.
- Develop standard dilution tables for IV dangerous drug.

Management:

- Enhance training and orientation for handling of dangerous drugs.
- Review the current inventory of syringe pumps at hospitals and explore the possibility of pump replacement and upgrade.
- Ensure proper labeling of medications on the syringe – stating the drug dosage and concentration.

The key improvement recommendations for **Anticoagulants** were:

Process:

- Revise the way of crossing out preceding space to clearly indicate the commencement date and time of drug administration.
- Cross-check high risk / alert medication before administration.

Management:

- Ensure staff compliance with standard drug administration procedures and follow the HA Guidelines on Medication Management.
- Reinforce the practice of clarifying with pharmacists when in doubt.

- Review the training system for all nursing staff on medication safety.
- Administer medications by the named nurse who is more familiar with the patient and drug profile.

Learning and Sharing

48. To promote learning and sharing, salient information on all reported SEs and SUEs, contributing factors and learning points are shared in the Hospital Authority Risk Alert (HARA), a newsletter published quarterly since November 2007. To raise staff awareness on patient safety, abstracts of local and global healthcare risk issues are also included in each publication of HARA and promulgated in the half-yearly Patient Safety Forum.

CHAPTER 6 – CONCLUSION

49. A review of the previous year provides an opportunity to reflect on what went well and what not. The retrospective analysis allows us to learn from past events and to conduct future planning positively.

50. When compared to last year, the total number of SEs has decreased by 23.5%, from 34 to 26. With the implementation of the surgical safety policy in 2009, the number of cases related to "Retained instruments or other material after surgery / interventional procedure" had dropped from 18 in 2010/11, 14 in 2011/12, to 10 this year. Over the past three years, we have continued to work on suicidal prevention by promoting suicidal risk assessment and environmental risk control. The number of cases related to the "Death of an inpatient from suicide (including home leave)" had also decreased from 20 in 2010/11, 10 in 2011/12, to 9 in this reporting period.

51. A total of 104 SUEs were reported in 2012/13, representing a slight increase of 2 cases when compared to 102 SUEs last year. The majority of SUEs (96, or 92.3% of all cases) was related to medication error, of which 43 were associated with known drug allergy. The top three KDA drugs were Penicillin group, NSAIDs and Paracetamol, possibly due to their widespread use in HA. No SE or SUE due to medication error was associated with temporary major consequences or extreme consequences in the reporting period.

52. Since the rollout of AIRS, the total number of reported incidents has been increasing steadily. On the other hand, the number of SEs has dropped 23.5% when compared to last year, which is a record low since the implementation of Sentinel and Serious Untoward Event Policy. Since these incidents had been reviewed, for which the root causes were analysed and recommendations were made, HA had implemented many corresponding improvements measures at different levels. Moreover, sharing and learning through publications, forums and discussions can further increase the awareness of and contribute to the safety culture within HA. With the collaboration of hospitals and cluster Quality & Safety teams and various stakeholders from Head Office, let us not let our quality and safety journey rest until the good is better and the better is best.

53. The driving force behind all these initiatives is improvement of patient safety. We would like to pay special tribute to all our colleagues who have worked with us for their dedication, professionalism and contributions, and to look to them for continuing improvement long into the future.

CHAPTER 7 – THE WAY FORWARD

54. In the years to come, HA will continue its long-term strategy to improve surgical safety and prevent patient suicide, and will intensify effort in improving medication safety, especially for known drug allergy, with a view to minimizing medication errors.

55. To promote safe surgery, further enhancement on processes, such as proper surgical site markings, TIME OUT for use of local anaesthetic agents, will also be promoted.

56. To further reduce inpatient suicide risk, a list of facility-related provisions for prevention of inpatient suicide in non-psychiatric setting will be devised and incorporated into the Guidelines on Hospital Security Design Planning. The Guidelines will be used for reference when planning and designing new wards or major renovation / refurbishment of existing non-psychiatric wards.

57. Promulgation in communication in patient care processes through Crew Resource Management (CRM) approach and simulation training will continue.

58. In 2014, AIRS 3.0 will be rolled out to all hospitals and clinics as planned. The upgrade of the system will further improve data input accuracy and facilitate reporting of near-miss events. Reporting of near-miss events will be encouraged as learning from such events can guide system changes to avoid potential harm in the

future.

59. Employing technology to improve patient safety where appropriate, HA will prepare for the implementation of the internationally recognized blood transfusion standard – Information Standard for Blood and Transplantation (ISBT) 128. This standard will enable distinct human blood products to be uniquely and consistently identified with the standard codes for effective traceability, and global collaboration on bio-vigilance and surveillance.

60. HA is committed and dedicated to enhancing the quality and safety of our patients under care. To this end, HA will by continually exploring and implementing risk mitigation initiatives to further improve patient safety in the years ahead.

ANNEX I

HA SENTINEL AND SERIOUS UNTOWARD EVENT POLICY

1. Purpose

The Sentinel and Serious Untoward Event Policy defines the process for identification, reporting, investigation and management of Sentinel Events (SE) and Serious Untoward Events (SUE) 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 labour 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 an 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 handling, (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;
- 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 Hospitals 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 RCA panel in the 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 Half-year Report (to public) and follow-up visits.

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

ANNEX II

SUMMARY OF INDIVIDUAL SENTINEL EVENTS AND RECOMMENDATIONS FOR IMPROVEMENT

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

Ilioinguinal Nerve Block on the Wrong Side

A 3-yrs-old girl was scheduled for LEFT herniotomy under General Anaesthesia (GA) with LEFT ilioinguinal nerve block for post-operative pain relief. The "SIGN-IN" Checklist was performed by the operating theatre nurse and the anaesthetist trainee respectively. After induction of GA, an ilioinguinal nerve block was performed on the patient's RIGHT inguinal area by an anaesthetic trainee under close supervision. Shortly after the procedure, it was noted that there was an arrow marked on the LEFT distal thigh. The wrong side nerve block was revealed. NO further nerve block was performed. The LEFT herniotomy was performed uneventfully and the patient was discharged home on the same day.

Key Contributing Factors:

1. The Surgical Safety Checklist was not followed to identify the correct side prior to administration of local anaesthetics.
2. The surgical site marking was not marked accurately to alert the clinical team.
3. Lack of alertness in anaesthetic procedure safety during supervision.

Recommendations:

1. Review the Policy to enhance anaesthetic procedure safety checking.
2. Standardize the marking as proximal to the surgical site.
3. Review clinical supervision of trainees.

Removal of Right instead of Left Double J (JJ) Stent

The patient had bilateral JJ stents inserted because of recurrent upper urinary tract stone. The plan for removal of both JJ stents was documented only in the medical notes but not found in the discharge summary of the Clinical Management System

(CMS). A consent form was obtained from the patient to "remove the JJ catheter" by a doctor in advance. On the scheduled date for stents removal, Dr A obtained a new consent from the patient for removal of LEFT JJ stent, based on the last operation record (insertion of LEFT JJ stent) in CMS. Dr A removed the LEFT JJ stent uneventfully and documented the procedure in patient notes. Post procedure X-ray showed LEFT JJ stent was in situ, revealing the inadvertent removal of RIGHT instead of the LEFT JJ stent. The patient was informed of the incident and the remaining LEFT JJ stent was removed uneventfully.

Key Contributing Factors:

1. No documentation on the plan of removal of JJ stents in the discharge summary of CMS.
2. Unawareness of the presence of two JJ stents.

Recommendations:

1. Ensure clear documentation of JJ stent removal, including documentation in the operation record, discharge summary, booking procedure and consent form (additional remark as required).
2. Review the guidelines for JJ stent removal to include reviewing of X-ray image before the procedure "TIME-OUT".

Wrong Side Procedure

A patient with repeated RIGHT shoulder dislocation was admitted for operation. LEFT regional nerve block was performed by an anaesthetist. The operating team conducted surgical safety check – SIGN IN and TIME OUT – before the operation. The anaesthetist then discovered that the nerve block was performed on the wrong side. The error was corrected and the operation was proceeded uneventfully on the RIGHT shoulder. No adverse effect was observed on the wrong side.

Key Contributing Factor:

Non-compliance with the surgical safety policy – "one should perform SIGN IN before anaesthesia".

Recommendations:

1. Reinforce the surgical safety policy thoroughly – SIGN IN before all interventional procedures, including anaesthesia.

a. Involve all operating team members during SIGN IN, TIME OUT and SIGN OUT.
b. Crew Resource Management training.

2. Develop guidelines on procedural safety.

Wrong Side Chest Tapping

Admission slip: RIGHT Pleural Effusion. The attending doctor documented "RIGHT Pleural Effusion" under X-ray findings while putting down "LEFT Pleural Effusion" as diagnosis in the medical record. Consent form for ultrasound-guided chest tapping: "LEFT Pleural Effusion". Both the case doctor and case nurse performed the procedure safety checklist for chest tapping against the consent form without site marking. Ultrasound-guided chest tapping was performed on the LEFT side. Post-procedural X-ray showed small left pneumothorax. A chest drain was inserted and the left lung was fully expanded. The attending doctor reviewed the post-procedural X-Ray films and discovered the error. The patient recovered uneventfully.

Key Contributing Factors:

1. Lack of verification on the side of procedure and site marking.
2. Lack of standards of practice on performing ultrasound-guided chest tapping.

Recommendations:

1. Verify the side of the procedure as indicated in all documents and images.
2. Review and standardize the practice of performing ultrasound-guided chest tapping.

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

Retained Gauze / Ribbon Gauze

Case 1:

A patient received Tenckhoff catheter insertion for peritoneal dialysis in the treatment room of a renal ward. After LA, an incision wound (2-3 cm) was made on the abdomen. During the procedure, haemostasis was attained by direct pressure with gauze. The wound was closed after insertion of the catheter. One week later, the patient presented with wound swelling and oozing. Incision and drainage was done with ribbon gauze packing by a doctor. On the next day, a piece of gauze was found inside the wound after removal of the ribbon gauze during wound management. The retained gauze was removed immediately.

Key Contributing Factor:

No system of gauze counting.

Recommendations:

1. Introduce a system of gauze counting.
2. Use of raytec gauze.
3. Review the haemostasis technique and equipment requirement for insertion of Tenckhoff catheter.

Case 2:

A pregnant woman underwent an emergency lower segment caesarean under spinal anaesthesia. The operation was smooth and uneventful. During the first gauze counting, the scrub nurse found one long raytec gauze was missing and informed the surgeon. The surgeon believed that there was no gauze retained inside the patient's body. The gauze was not found after checking by circulating nurse. The wound was closed before final counting. The missing gauze was not found after thorough search of linen and theatre. X-ray abdomen showed a piece of gauze retained. Retained gauze was removed under GA after obtaining consent.

Key Contributing Factors:

1. The surgeon had not ascertained that no gauze was retained.

2. Noncompliance to "SIGNOUT" of surgical safety.

Recommendations:

1. Reinforce the "speak-up" culture and empower team members to stop the operation for appropriate actions.
2. Revise the existing guideline on management of missing instrument and consumables.

Case 3:

A patient with multiple chronic pressure ulcer wounds on the hip required wound care by community nurses for years and repeated hospitalization. The patient was admitted for excisional debridement. During the operation, a piece of ribbon gauze was found deep inside the wound.

Key Contributing Factor:

Lack of a good practice to ensure complete removal of wound packing materials.

Recommendations:

1. Refine the guidelines on wound packing and documentation.
    a. Reinforce accurate documentation on the use and removal of dressing materials.
    b. Mark wound site on the assessment record form.
    c. Take clinical photos to facilitate communication.
2. Develop a practice to ensure all packing materials are completely removed.

A Segment of Drain

A patient underwent an open right hemicolectomy with silicone tube (drain) inserted for wound drainage. A week later, the case doctor (Dr A) ordered to shift out the drain for 2cm, in view of reducing drain output. An intern (Dr B) shifted the drain accordingly and documented "no side hole was seen". Two days later, Dr A ordered to shift out the drain by another 2cm. Dr B removed the cover gauze and found that the drain was almost dislodged with its "end" outside the wound. After consulting Dr A, the drain was removed. An abdomen X-ray (AXR) was done which revealed dilated small bowels only. About 2 months later, the patient complained of right lower abdominal pain. The AXR showed a segment of drain inside the patient's abdomen. The segment of drain (20cm in length) was then removed uneventfully

under local anaesthesia (LA). No wound infection was noted.

Key Contributing Factors:

1. Unaware of the possibility of broken drain when "no side hole" on the dislodged drain was observed.
2. No standard procedure for drain removal.
3. Absence of radiopaque marker on the involved drain.

Recommendations:

1. Review training of interns on wound drain removal.
2. Formulate the standard procedures for wound drain removal.
3. Review mentorship and clinical supervision of interns.
4. Consider using drains with radiopaque marker.

A Corrugated Drain

A woman delivered a baby by vacuum assisted delivery; a vaginal cyst ruptured during the process, forming a long tunnel below the vaginal wound. A 6 x 2 cm corrugated drain was inserted. It was subsequently shifted out 1 cm daily in the following 2 days. On day 3 of post-delivery, the patient reported that the drain was missing. A doctor explored the wound but could not locate the drain; the patient was discharged with follow up appointments arranged. On day 8 post-delivery, a superficial perineal skin gapping was noted. On day 23 post-delivery, the patient complained of perineal pain and a firm mass was noted. After confirmation by ultrasound, exploration of wound under general anaesthesia was performed and a corrugated drain was removed.

Key Contributing Factors:

1. Lack of adequate wound exploration despite the patient's report of the missing drain.
2. Insufficient communication with the patient on wound / drain management.

Recommendations:

1. Establish standard practice on exploration of wound.
2. Enhance the care process of wound and drain management.

A Piece of Bone Cement

A bipolar hemiarthroplasty was performed for a hip fracture. Imaging study post-operatively showed a shadow in the hip suspected to be a piece of loosen bone cement. With patient's consent, a 2.5cm bone cement was removed from the acetabulum without complication. The patient's rehabilitation was uneventful.

Key Contributing Factors:

1. Once in situ, the hemiarthroplasty made checking of foreign body inside the acetabulum difficult.
2. Failure to detect the retained cement.
3. Insufficient measures to prevent slipping of cement to the joint space.

Recommendations:

1. Devise a system to prevent and detect retained cement.
2. Review the use of protective materials to cover the acetabulum during the procedure.

Tip of Artery Forceps

A patient underwent an operation for excision of breast lump under local anaesthesia and was discharged on the same day. A tip (2mm) of straight artery forceps was found missing during checking after instrument decontamination. The patient was recalled for X-ray examination on the same day. The retained tip was located and removed without complication. The patient was discharged on the next day.

Key Contributing Factors:

1. Failure to notice the damaged forceps.
2. Lack of system to identify defective instrument.
3. Metal fatigue causing broken instrument.

Recommendations:

1. Establish a tracking system to detect and replace aging instruments.
2. Reinforce instrument checking before and after use.

A Carriage Spacer

A patient underwent an operation of anterior spinal fusion with anterior cervical plating with Vectra-T anterior cervical plate. "SIGN IN" and "TIME OUT" of Checklist was completed by the operating team. The operation was completed uneventfully. In the recovery room, after being asked by the assistant, the surgeon revealed that the carriage spacers that should be removed was retained. An emergency operation for removal of the spacer was performed on the next day after discussion with the patient and the relatives. The patient made good rehabilitation progress.

Key Contributing Factors:

1. Inadequate briefing to the operating team before operation on the new implant.
2. Inconspicuous "Alert Cue" of the implant and instrument box to remove carriage spacer.

Recommendations:

1. Conduct briefing on the design of the implant and the related critical checks for the team members for ensuring safety.
2. Liaise with supplier on the design of conspicuous "Alert Cue" on the implant and instrument box.

A Internal Stiffener Stylet

Percutaneous insertion of central catheter was performed on a patient for prolonged intravenous antibiotic treatment. Due to suspected line sepsis, the catheter was removed after 12 days of insertion. The post-procedural chest X-ray showed the retention of an internal stiffener stylet in the vein. The internal stiffener stylet was removed under local anaesthesia uneventfully.

Key Contributing Factors:

1. Unfamiliar with the procedure due to infrequent use of complex instrument.
2. The design of the instrument was complex and not user-friendly.

Recommendations:

1. Familiarize staff with the design and proper use of the chosen instrument.
2. Attach a warning label on the instrument to remind staff for removal of the internal stiffener stylet and check the components during "TIME OUT".

A Cement Restrictor Inserter

A patient underwent an emergency Austin Moore Arthroplasty for right hip fracture. Intra-operatively, the surgeon decided changing to a cemented bipolar hemiarthroplasty. "SIGN OUT" and debriefing were done after the operation. A few minutes later, the scrub nurse discovered that a cement restrictor inserter (the inserter) was missing. The post-operative X-ray revealed that the inserter was retained in the patient's femoral canal. Balancing the pros and cons, the clinical team decided not to remove the retained inserter. The patient was informed of the incident; rehabilitation progress was satisfactory.

Key Contributing Factors:

1. Use of different methods and instruments which caused confusion.
2. Failure to perform integrity check of instruments upon the cementation procedure.

Recommendations:

1. Perform pre-operative planning and templating, understand thoroughly the design and use of the instrument.
2. Ensure the integrity and counting of individual parts of the instrument before and after the procedure.

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

9 inpatients / home leave patients committed suicide. 3 patients had mental illness and 6 had terminal or chronic or illnesses; 4 patients committed suicides during home leave, 4 committed suicide during their stays in hospital and 1 missing patient committed suicide outside hospital compound.

Apart from the underlying medical conditions of patients and their mental health condition (e.g. psychiatric condition, depression from the chronic illness), the other factors that may have contributed in varying degree to a patient's suicide and the recommendations were tabled as follow.

	Key Contributing Factors	***Recommendations***
Patient	Patient had concealed own suicidal idea and plan.	
Process	Failure of visual checking above bed level to locate left behind patients.	Enhance the patient counting mechanism to ensure that patients would not be left behind when being vacated from an area.
Communication & management	• Ineffective communication among healthcare staff. • Failure to recognize patients' suicide thoughts.	• Reinforce communication with and education to patients and relatives on the management of brought-in medications. • Ensure better communication among the multi-disciplinary healthcare providers who take care of patients receiving palliative care. • Enhance staff training in recognizing suicidal risk. • Facilitate use of reference list of facility-related provisions for prevention of inpatient suicide in non-psychiatric ward settings in the Guidelines on Hospital

		Security Design Planning.
Environment & facility	• Inadequate environmental and security safety measures. • Presence of high-risk facilities inside the patient toilet.	• Conduct environmental scanning regularly to mitigate suicidal risks. • Enhance environmental safety measures and workforce planning. • Redesign toilet facilities and replace high-risk facilities to control environmental risk.

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

A pregnant woman at gestational age of 30 weeks was admitted for the management of antepartum haemorrhage and fetal distress. Emergency caesarean section was performed uneventfully. On day 1 post-delivery, shortness of breath and hypotension were noted. Urgent investigations did not show evidence of pulmonary embolism. The patient was transferred to ICU for further management. On day 3 post-delivery, whilst on inotropic support, she developed cardiac arrest; despite active resuscitation, unfortunately, the patient succumbed. A diagnosis of amniotic fluid embolism was subsequently confirmed.

Concluding Remarks:

1. Amniotic fluid embolism is a rare but known complication of pregnancy.
2. After reviewing the system, care process, clinical handover, staff training and the environment, the investigation panel concluded that the patient was given appropriate management.

Category 8: Infant discharged to wrong family or infant abduction

A baby was admitted for hearing test; the baby also required inpatient treatment after a fall from bed at home. The mother was referred to the social work service for further assessment and assistance for suspected child care problem. After assessment, the social worker proposed to the mother that the patient could be taken care of temporarily by the child care program. One day later, the baby was found missing with a torn baby tag left on the bed. The hospital performed local and hospital wide search. After 10 minutes, the ward nurse successfully contacted baby's mother but she refused to bring back the baby. The ward nurse reported the case to the police. About 1 ½ hour later, the police escorted the mother and the baby back to the hospital.

Key Contributing Factors:

1. Lack of timely communication among the social worker, the clinical team and the family.
2. Inadequate access control in ward.
3. The baby tag was not tamper-proof.

Recommendations:

1. Enhance the effectiveness of communication among social workers and clinical healthcare team.
2. Explore the feasibility of improving physical security measures to enable effective patient movement control, e.g. relocate the door release button.
3. Promulgate the existing guidelines on prevention of unauthorized removal of infants / children from ward.
4. Explore the use of tamper-proof electronic baby tags.

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

Death of a MND Patient after Being Transported to Another Cubicle in the Same Ward

A patient with Motor Neuron Disease (MND) required continuous oxygen therapy via Bi-level Positive Airway Pressure (BiPAP). The patient was moved to another cubicle in the same ward to allow cleansing and disinfection. Nurses assessed the patient's condition before transportation and judged that the patient could tolerate a short while without oxygen support. However, the patient's condition deteriorated during the transport and the patient succumbed subsequently.

Key Contributing Factors:

1. Insufficient knowledge and experience in caring for patients on BiPAP therapy.
2. Overestimation of the patient's tolerance on discontinuation of oxygen support during transportation.

Recommendations:

1. Enhance staff education and training on the use of BiPAP.
2. Reinforce promulgation of guidelines on transport of critically-ill patients.
3. Extend the corporate guidelines on the use of BiPAP.

Published by the Patient Safety and Risk Management Department
Hospital Authority
Hong Kong

January 2014

Available from www.ha.org.hk/visitor