ANNUAL REPORT ON SENTINEL AND SERIOUS UNTOWARD EVENTS

1 October 2010 – 30 September 2011

HOSPITAL AUTHORITY HONG KONG

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醫院管理局
HOSPITAL AUTHORITY

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ACKNOWLEDGEMENT

We would like to express our gratitude to all frontline staff, clinicians, executives and risk managers in hospitals and clusters for their tremendous support to improve patient safety.

We would also like to thank all colleagues for their enthusiasm and participation in numerous initiatives to promote patient safety and risk identification and mitigation in the past year. Without their contribution, collaboration and advice, the production of this Annual Report for learning and sharing would not have been possible.

Patient Safety and Risk Management Department

Quality and Safety Division

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EXECUTIVE SUMMARY

The Hospital Authority (HA) has always accorded top priority to enhancing service standards and patient safety. In October 2007, HA made reference to international practice and implemented the Sentinel Event Policy (the Policy) to require mandatory reporting of nine categories of incidents. The Policy has standardized the definition of sentinel events and process of reporting as well as investigation and management of sentinel events in public hospitals. While sentinel events are unexpected occurrences with serious consequences that we would like to avoid, they are not necessarily due to errors. Hence, it is crucial to investigate each sentinel event objectively and independently before drawing conclusion on its causation.

2. HA has revised the Policy to include mandatory reporting of two more categories of events, namely, medication error and patient misidentification that could have resulted in the death or permanent harm of patients. The new Sentinel and Serious Untoward Event Policy has been in place since January 2010.

3. Under the new Policy, a Root Cause Analysis (RCA) Panel would be set up for each reported Sentinel Event (SE) / Serious Untoward Event (SUE) to identify contributing factors, root causes and make recommendations for continual improvement and risk management. The process of RCA would also engage both the management and frontline staff in a collaborative effort to prevent recurrence of

similar events and move the organization towards a safer patient journey.

4. This Annual Report covers a total of 44 sentinel and 97 serious untoward events reported from 1 October 2010 to 30 September 2011.

5. For the 44 reported SEs, "Death of an inpatient from suicide (including home leave)" ranked top among all categories (20 cases; 45.4%). The second most common category of SE was "Retained instruments or other material after surgery / interventional procedure" (18 cases; 40.9%). This was followed by "Surgery / interventional procedure involving the wrong patient or body part" (3 cases; 6.8%).

6. A breakdown of the 44 reported SEs showed that 22 (comprising 20 cases of patient suicide, 1 case of medication error and 1 maternal death associated with delivery) had "extreme consequences" resulting in the death of patients involved; 6 "major" or "moderate" consequences; and 16 "minor" or "insignificant" events.

7. Among the 97 reported SUEs, 88 (90.7%) were related to medication error and 9 (9.3%) patient misidentification. Seventy-four cases (76.3%) had "minor" or "insignificant" consequences; 20 (20.6%) "moderate" or "major" consequences; and 3 (3.1%) "temporary major" consequences.

8. There was an increase in the occurrence of SEs in 2010/11 (44 cases) as compared with 33 cases in 2009/10. The increase is mainly attributed to the surge in cases of "patient suicide" (9 more cases than 2009/10) and "retained instruments or other material after surgery / interventional procedure" (6 more cases than 2009/10).

9. The lessons learned from RCA findings and the recommendations on preventing recurrence of SE/SUEs have been shared with all staff in the half-yearly Patient Safety Forum and quarterly "HA Risk Alert" (HARA) Newsletter. To facilitate access to these valuable resources, the HARA Newsletters are also uploaded in the HA intranet and internet websites.

10. The production of this Annual Report represents the conjoint efforts of frontline colleagues and hospital management, as well as executives in quality and risk management departments of hospitals, clusters and the HA Head Office. The contributions of all colleagues are greatly appreciated.

CHAPTER 1 – INTRODUCTION

11. Nowadays, the Hospital Authority (HA) is faced with a myriad of rapid, significant and complex changes and challenges. To rise up to these changes and challenges, it is of critical importance that the delivery of safer, better care remains a top priority.

12. We live in an imperfect world and we know that we do make mistakes. However, as healthcare professionals, we owe it to our patients and ourselves to do all we can to minimize error and maximize quality. The best way to do this is to accept and describe honestly what, where and how mistakes and failures have occurred in order to learn from them. Our objectives are to minimize harm to patients, encourage open disclosure, provide necessary support to the patients, family and staff involved, and investigate and explore if there are ways to prevent similar events from happening again.

13. Acknowledging that lessons learnt the hard way through adverse events should be shared not just locally but globally, HA has joined the Global Patient Safety Alerts and linked the HA Risk Alerts with similar publications produced by healthcare organizations worldwide. This would enable HA to build up collective knowledge on incidents and risk reductions.

14. This Annual Report summarizes all sentinel and serious untoward events

reported by HA hospitals from 1 October 2010 to 30 September 2011 and reviews on all reported events, risks, improvement opportunities and learning points identified through Root Cause Analysis. It also documents various planned or implemented risk reduction measures to prevent the recurrence of such events.

15. The HA has been striving to change and improve the systems and processes involved in healthcare. However, changes are often not very effective unless they are embedded in the system where the providers are engaged in safety efforts, educated about how to identify and remove safety hazards, and have a culture of communication and strong teamwork. We sincerely hope that this compilation would contribute to safer patient journeys in the future.

CHAPTER 2 – SENTINEL AND SERIOUS UNTOWARD EVENT POLICY

16. The Sentinel and Serious Untoward Events Policy (Annex I), effective from 1 January 2010 to supersede the Sentinel Event Policy implemented in October 2007, covers the following event 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

17. The Policy 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 an expert panel to be set up by the hospital to identify possible causes and explore improvement measures. The hospital will then submit a formal report to the HA Head Office in eight weeks' time on its findings, views and intended follow-up improvement actions. Improvement measures requiring larger scale coordination beyond the level of individual units or departments will be facilitated at the hospital and/or corporate level to prevent recurrence of similar incidents in future.

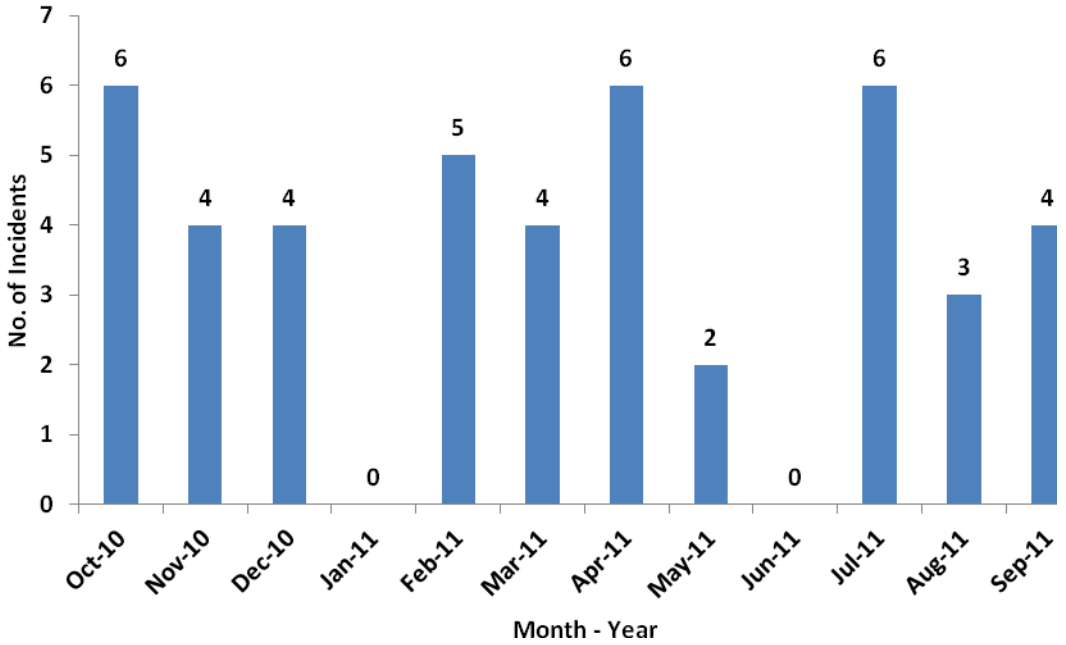
CHAPTER 3 – SENTINEL EVENTS REPORTED FROM 1 OCTOBER 2010 TO 30 SEPTEMBER 2011

Frequency of Reportable SEs

18. A total of 44, 33, 40 and 44 SEs were reported from 1 October 2010 to 30 September 2011, 1 October 2009 to 30 September 2010, 1 October 2008 to 30 September 2009 and 1 October 2007 to 30 September 2008 respectively.

19. The number of reportable SEs from October 2010 to September 2011 by month is shown in Figure 1.

Figure 1: Reportable Sentinel Events by month

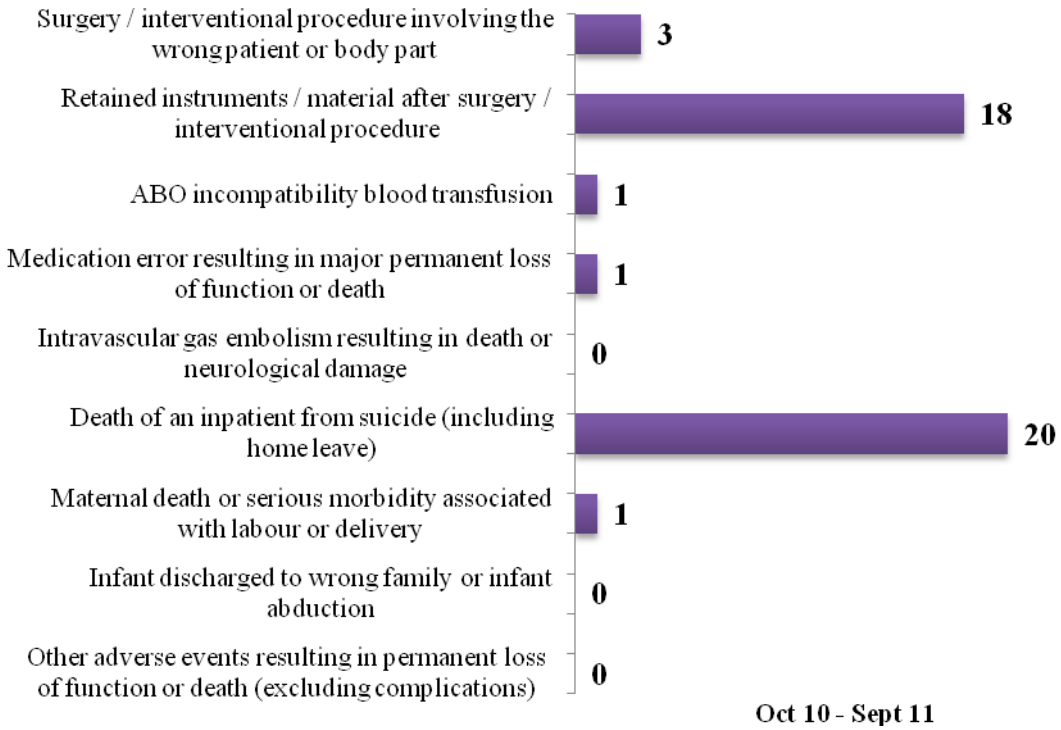


The incident rate of reportable SEs was 2.5, 2.0, 2.4 and 2.7 per 1,000,000 episodes of patient discharges and deaths / attendances for 12 months from 1 October 2010 to 30 September 2011[1], 1 October 2009 to 30 September 2010, 1 October 2008 to 30 September 2009 and 1 October 2007 to 30 September 2008 respectively.

Breakdown of Reportable SEs by Category

20. A breakdown of the number of SEs by category for the 12 months period from 1 October 2010 to 30 September 2011 is shown in Figure 2, and the percentage distribution of SEs in Figure 3.

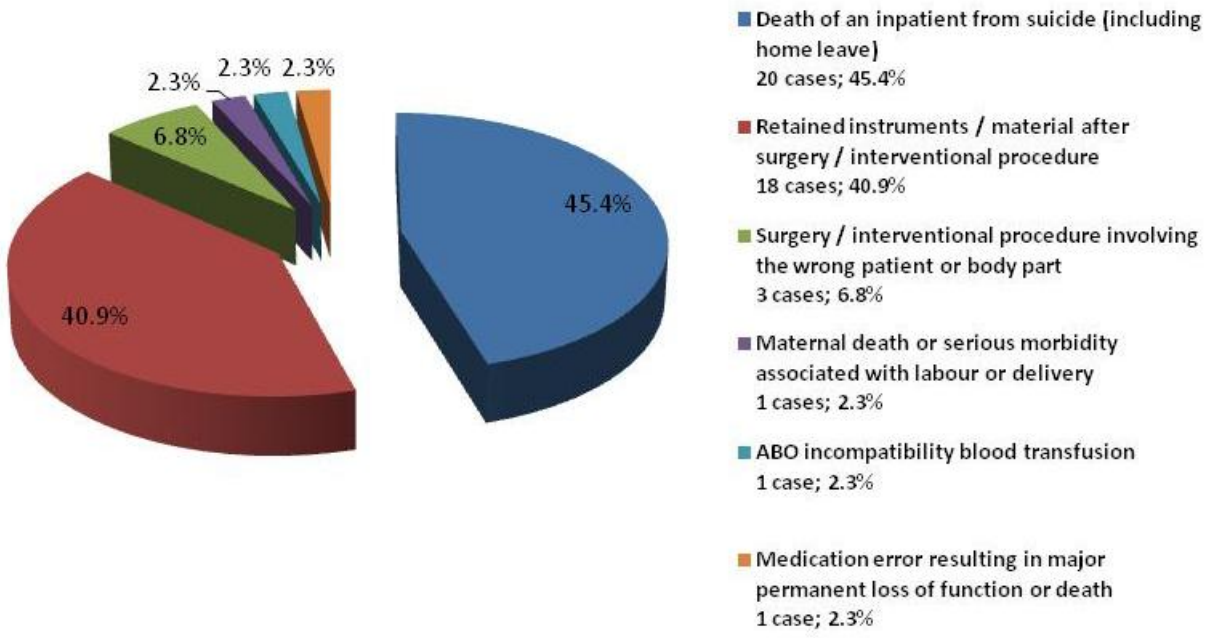
Figure 2: Breakdown of Sentinel Events by Category



[1] Including total inpatient and outpatient discharges as well as deaths and ambulatory service attendances as defined in the HA Controlling Officer's report: Vol. 1B, 2011-2012.

21. A total of 44 SEs was reported from 1 October 2010 to 30 September 2011. "Death of inpatient from suicide (including home leave)" with 20 incidents (45.4%), was the most commonly reported category of SEs. The second most commonly reported category was "retained instruments or material after surgery / interventional procedure" with a total of 18 incidents (40.9%). This was followed by "surgery / interventional procedure involving the wrong patient or body parts" where 3 incidents (6.8%) were reported.

Figure 3: Distribution of Sentinel Events from 1 October 2010 to 30 September 2011



- **Death of an inpatient from suicide (including home leave): 20 cases (45.4%)**

  Out of the 20 suicide cases:

  - 10 patients (50%) committed suicide during home leave, 8 (40%) committed suicide while staying in hospital and 2 missing patient (10%)

committed suicide outside hospital compound; and

- 12 patients had terminal cancer or chronic illnesses and 8 had mental illness.

- **Retained instruments or other material after surgery / interventional procedure: 18 cases (40.9%)**
  - Retention of surgical gauzes or sponge fragments: 6 cases;
  - Retention of segment of tubing: 1 case;
  - Retention of mini-vessel clip: 1 case;
  - Retention of endocap: 1 case;
  - Retention of segment of suction catheter: 1 case;
  - Retention of segment of naso-gastric tube: 1 case; and
  - Retention of instrument or other material (a segment of sagittal saw blade, broken tip of screw holder, a fragment of suture shuttle needle, a segment of radio-opaque material, dressing strip, broken piece of vascular loop, tip of Hickman catheter): 7 cases.

- **Surgical or interventional procedures involving the wrong patient or body part: 3 cases (6.8%)**
  - Local anaesthesic was injected into the patient's wrong eye;
  - Catheterization was performed on the wrong patient; and
  - Incorrect procedure was performed on the patient.

- **ABO incompatibility blood transfusion: 1 case (2.3%)**

  A patient was transfused 2 units of red cells of incorrect blood group.

- **Medication error resulting in major permanent loss of function or death: 1 case (2.3%)**

  Incorrect drugs were prescribed and administered to a patient.

- **Maternal death or serious morbidity associated with labour or delivery: 1 case (2.3%)**

  One case of maternal death (massive acute intracranial haemorrhage) was associated with labour or delivery.

Outcome of Reported Sentinel Events

22. The outcome of reported SEs was as follows:

- Minor or insignificant consequence: 16 cases (36.4%);
- Major / moderate consequence: 6 cases (13.6%);
- Extreme consequence (i.e. death): 22 cases (50%);
  - Patient suicide: 20 cases;
  - Medication error: 1 case; and
  - Maternal death associated with labour or delivery: 1 case.

Hospital Settings where Sentinel Events Occurred

23. Of all SEs reported for the period, 81.8% occurred in general hospitals (Table 1).

Table 1: Setting Where Sentinel Events Occurred

Setting	No. of SEs (%)
General hospitals	36 (81.8%)
Psychiatric units within general hospital	4 (9.1%)
Psychiatric hospitals	4 (9.1%)

24. The occurrence of SEs in the past four years from 1 October 2007 to 30 September 2011 is depicted in Table 2.

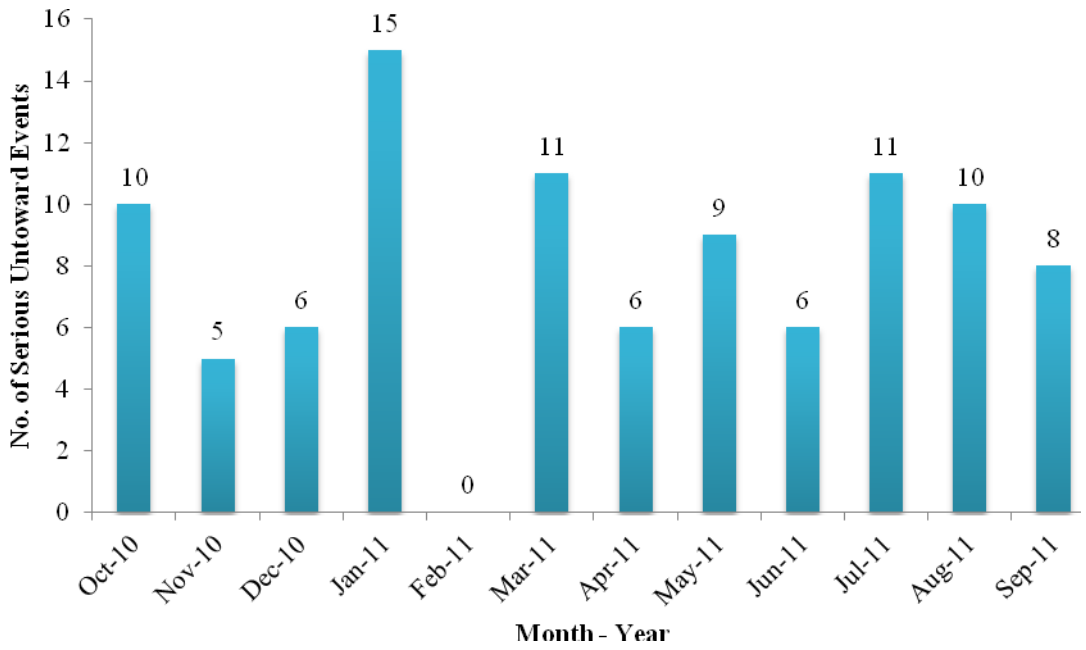
Table 2: Comparison of Occurrence of Sentinel Events from 1 Oct 07 to 30 Sept 11

Reportable Sentinel Events	**1-Oct-07 to 30-Sept-08**	**1-Oct-08 to 30-Sept-09**	**1-Oct-09 to 30-Sept-10**	**1-Oct-10 to 30-Sept-11**	**Total number of SE**
Surgery / interventional procedure involving the wrong patient or body part	5	10	5	3	**23**
Retained instruments or other material after surgery / interventional procedure	10	13	12	18	**53**
ABO incompatibility blood transfusion	1	0	0	1	**2**
Medication error resulting in major permanent loss of function or death	0	0	1	1	**2**
Intravascular gas embolism resulting in death or neurological damage	0	0	1	0	**1**
Death of an inpatient from suicide (including home leave)	25	15	11	20	**71**
Maternal death or serious morbidity associated with labour or delivery	1	2	2	1	**6**
Infant discharged to wrong family or infant abduction	1	0	0	0	**1**
Other adverse events resulting in permanent loss of function or death (excluding complications)	1	0	1	0	**2**
Total Number	**44**	**40**	**33**	**44**	**161**

CHAPTER 4 – SERIOUS UNTOWARD EVENTS REPORTED FROM 1 OCTOBER 2010 TO 30 SEPTEMBER 2011

25. A total of 97 SUEs was reported from 1 October 2010 to 30 September 2011. The number of reported SUEs by month for the period is shown in Figure 4.

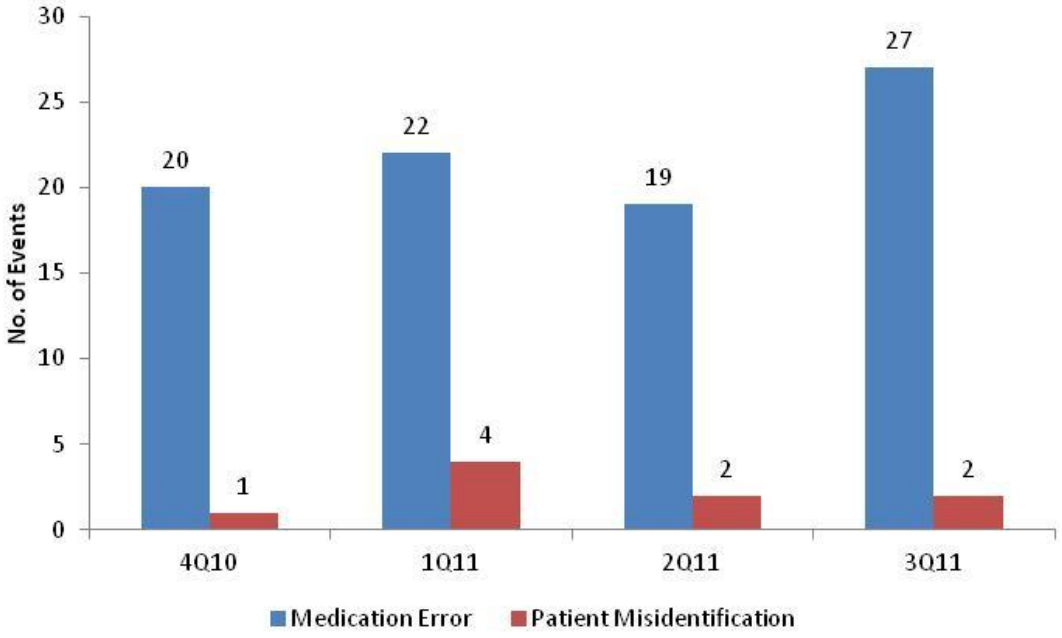
Figure 4: Monthly Number of Reported Serious Untoward Events



26. A breakdown of reported SUEs from October 2010 to September 2011 revealed that 88 cases (90.7%) were due to medication error and 9 (9.3%) patient misidentification (Figure 5).

Figure 5: Breakdown of Serious Untoward Events from

1 October 2010 to 30 September 2011



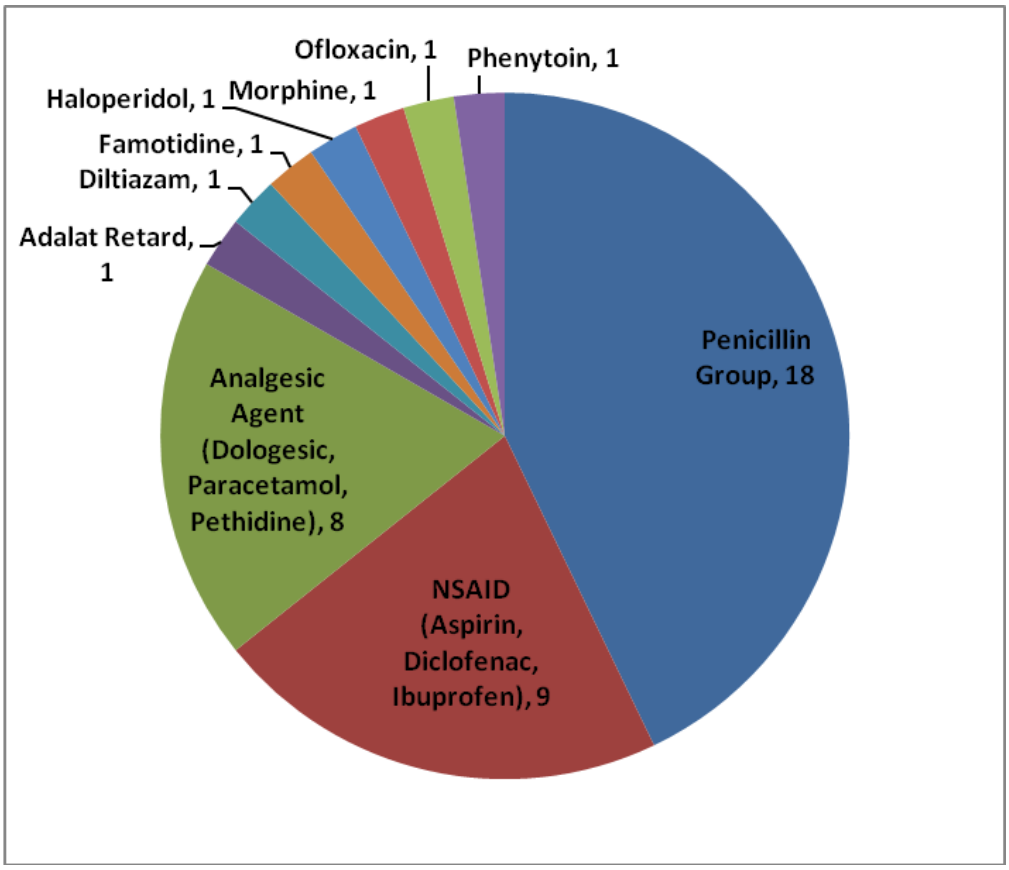
SUEs from Medication Error

27. Of the most commonly reported SUEs arising from medication error (88 cases), 42 cases (47.8%) were related to the prescription or administration of "Known Drug Allergy" (KDA) drugs. This was followed by medication error involving "dangerous drugs" (17 cases; 19.3%); "anticoagulants" (12 cases; 13.6%), "hypoglycaemic agents" (5 cases; 5.7%); and other medications (12 cases; 13.6%).

28. Of the 42 cases related to KDA drugs, the most commonly involved drugs were (i) Penicillin group (18 cases; 42.9%); (ii) analgesic agents – Dologesic / Paracetamol / Pethidine (8 cases; 19%); and (iii) Non-Steroidal Anti-Inflammatory Drug (NSAID) – Aspirin / Diclofenac / Ibuprofen (9 cases; 21.4%). Almost 80% of

the total KDA incidents were related to the penicillin group and analgesics agents. The number and distribution of KDA drugs involved is depicted in Figure 6 below:

Figure 6: Distribution of Prescribed or Administered KDA Drugs



29. The majority of patients who were prescribed or administered with KDA drugs had no allergic symptoms. A few patients presented with mild rashes after taking KDA drugs. Two patients needed ventilation support for respiratory distress with good recovery.

SUEs from Patient Misidentification

30. A total of 9 SUEs due to patient misidentification was reported. These

included incidents of misidentification of patients in the clinical management systems or misfiling of laboratory results in patients' notes resulting in prescription of inappropriate treatment. The type of patient misidentification incidents is summarized in Table 3 below:

Table 3: Distribution of Misidentification Incidents

Description	4Q10	1Q11	2Q11	3Q11
Misidentification of patient during dispensing	1	0	1	0
Misidentification of patient during drug administration	0	1	0	1
Misidentification of patient in clinical systems e.g. Corporate Drug Dispensing History(CDDH), Electronic Patient Record (ePR) summary	0	2	0	0
Misfiling of patient's laboratory report leading to inappropriate or unnecessary treatment	0	1	1	1

Outcome of Reported Serious Untoward Events

31. The outcome of reported SUEs was as follows:

- Minor or insignificant consequence: 74 cases (76.3%);
- Moderate consequence (required higher level of care): 20 cases (20.6%); and
- Temporary major consequence (including deteriorated condition, hypotension and hypoglycemia): 3 cases (3.1%).

CHAPTER 5 – ACTIONS TAKEN AND DISCUSSION

Analysis of Reported Sentinel Events

Sentinel Event Reporting

32. A total of 44 SEs was reported in the past 12 months (October 2010 to September 2011) within HA. As mentioned in previous Annual Reports, benchmarking with different jurisdictions is difficult. However, global trends would give us an idea on how HA is performing. In Australia, the Department of Health in the State of Victoria received 57 reports of SEs in 2009-2010[2]. The Western Australia Department of Health received 47 reports of SEs in 2009 – 2010[3]. In the United States, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) received 802 reports of SEs in 2010[4].

33. This year we saw an increase in the number of SEs reported. The rises were seen in two categories, retained instruments or other material after surgery / interventional procedure and death of an inpatient from suicide (including home leave).

[2] Building Foundations to support patient safety – Sentinel event program annual report 2009-10. Department of Health, State Government of Victoria
[3] Delivering Safer Healthcare in Western Australia – WA Sentinel Event Report 2009/2010. Department of Health Government of Western Australia
[4] The US Joint Commission, Summary Data of Sentinel Events Reviewed by The Joint Commission: as of September 30, 2011.

Types of Sentinel Events Reported

34. Out of 44 reported SEs, "Death of an inpatient from suicide (including home leave)" was the most commonly reported (20 cases; 45.4%). "Retained instruments or other material after surgery/ interventional procedure" was the second most commonly reported SEs (18 cases; 40.9%), followed by "surgery / interventional procedure involving the wrong patient or body part" (3 cases; 6.8%).

35. "Retained instruments", "inpatient suicide", and "wrong patient or site operated" remained the most common SEs reported to JCAHO, the Victoria Department of Health Service of Australia, and the Western Australia Department of Health. In Victoria, 6 out of 57 (11%) SEs were inpatient suicides and 9 (15.8%) were retained instrument or material. In Western Australia, 3 out of 47 (6.4%) SEs were retained instrument or material and 4 (8.5%) were inpatient suicide. It should be re-emphasized here that Hong Kong, Victoria, and Western Australia have different criteria for reportable suicides. In Hong Kong, reportable inpatient suicides also include suicides committed during home leave whilst in Australia only suicides committed in inpatient units are to be reported.

36. According to the World Health Organization (WHO), approximately one million people died from suicide with a global mortality rate of 16 per 100,000 population in the year 2000[5]. In Hong Kong, the suicide rate has increased from 11.8 per 100,000 population in 1995 to 14.6 per 100,000 population 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

37. The HAHO appoints a Root Cause Analysis Panel for every SE to conduct investigation and analysis, identify root causes and contributing factors as well as recommend appropriate improvement measures to prevent recurrence of SEs in future. The key contributing factors for each category of SEs are summarized below:

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

  Apart from the underlying medical conditions of patients and their mental health conditions (e.g. depression from chronic or terminal illnesses), the following are other factors that may have contributed in varying degrees to a patient's suicide:

  - Sudden and unpredicted change of mental conditions and behavior of patients;
  - Change of psychological conditions in patients with terminal illnesses;
  - Inadequate patient suicidal risk assessment;
  - Inadequate awareness of psychological needs of high risk patients;
  - Difficulty in identifying all at risk psychiatric patients with existing suicide assessment tool;
  - Suboptimal awareness of severe psychiatric symptoms (such as hallucination) by medical and nursing staff;
  - Inadequate training for frontline staff to counsel and handle special patient groups and provide psychological support to these patients;
  - Existence of environmental risks which may facilitate patients' suicidal acts;

and

- Insufficient supporting services for patients on home leave.

- **Key contributing factors for "retained instruments or material"**
  - Unclear role delineation among the operating team members;
  - Ineffective communication between operating team and health care team;
  - Insufficient documentation of counting and checking of instruments, consumables and used devices;
  - Failure to detect the retention of instruments or material;
  - Failure to check the integrity of medical devices / consumables after operation or procedure;
  - Difficulty in detecting tiny dislodged fragment of instrument;
  - Failure to detect the shortened vascular loop, or damaged Hickman catheter;
  - Unawareness of the possibility of Hickman catheter breakage when difficulty in insertion or removal of the catheter was encountered;
  - Failure to perform integrity checking when disassembling instruments before wound closure;
  - Non-fitting endocap of endoscope due to size discrepancy;
  - Inadequate knowledge and experience of doctors in handling equipment;
  - Failure to detect retention of nasogastric tube on X-ray images;
  - Difficulty in checking the integrity of a blood-soaked gauze and counting of wet sponge;
  - Inadequate awareness of the risk that Raytec gauze could stick to cement and detach during removal;
  - Insufficient communication when encountering difficulty in gauze removal;

- Failure to document the number and type of gauzes put into the wound cavity;
- Inadequate communication among staff on the number and type of gauzes used;
- Inappropriate use of multi-layered dressing strips;
- Lack of standard guideline on best practices for tracheostomy tube exchange; and
- Lack of unified clinical protocol for management of pressure ulcer at different stages.

- **Key contributing factors for "surgery/ interventional procedure involving the wrong patient or body part"**
  - Unclear writing for the minor eye procedure order;
  - Consent was obtained by asking a group of patient to sign, resulting in incorrect procedure;
  - Failure to countercheck procedure order prior to signing consent and performing procedure;
  - Operator distracted by activities between time-out and the operation; and
  - Failure to perform patient identification procedure before intervention.

- **Key contributing factors for "ABO incompatibility blood transfusion"**
  - Process and workflow design were unfavorable to multi-step manual procedure;
  - Standard operation procedures were not sufficiently explicit in areas pertaining to important control processes of the testing procedure and / or

not tailored to the circumstances of hospital laboratory;

- Staff tended to multitask and be easily distracted;
- Work place arrangement was not conductive to efficient workflow; and
- The functional management and staff communication in the Core Laboratory service was compartmentalized and not efficacious.

- **Key contributing factors for "medication error resulting in major loss of function or death"**
  - Communication breakdown;
  - Lack of standard practice in handling ePR Drug Prescribing History printout; and
  - Non-compliance with the guideline of patient identity checking.

- **Key contributing factor for "maternal death"**
  - No specific contributing factors could be identified in the reported case of maternal death.

Risk reduction programmes

38. The HAHO has collaborated with clusters and hospitals to improve and redesign systems and work processes to prevent recurrence of SEs. Examples of risk reduction programmes introduced are outlined below:

- **Death of an inpatient from suicide (including home leave)**
  - Arouse alertness to significant changes in patient's pain score;

- Enhance suicidal risk assessment and staff awareness of patient suicide in hospital;
- Monitor the documentation of "suicide risk assessment and nursing intervention" and "clinical management for patient with suicidal risks";
- Arrange training courses for clinical staff on handling special patient groups, such as how to break bad news, observation and counseling skills;
- Provide sufficient specialized information to patients to enhance correct understanding of their sicknesses or conditions;
- Strengthen communication with patients' family members on suicidal precaution during hospitalization;
- Conduct environmental scanning and modify environment and facilities to reduce suicidal risks;
- Enhance access control of patients in ward entrances or exits;
- Beware of the risk in providing items to patients, e.g. power cable which can be used for hanging;
- Design washroom to ensure that the partitions are extended up to the ceiling to avoid provision of supporting point for hanging;
- Encourage appropriate referral of patients to clinical psychologists / psychiatrists for early intervention and risk mitigation; and
- Explore appropriate community support for home / day leave patients.

- **Retained instruments or other material after surgery/ interventional procedure**
  - Enhance departmental guidelines on surgical counting;
  - Explore the use of "surgical counting system" to ensure proper surgical

counting procedure and practice;

- Consider adopting complementary checking measures in high risk operations;
- Enhance communication and "speak up" culture among members of the surgical team;
- Stock endocap of different sizes to reduce the chance of size discrepancy;
- Conduct orientation training on equipment for new users;
- Implement proper practice when using cut suction catheter as insertion guide for tube exchange by adopting 15 cm above tracheostomy stoma as the minimum length of the cut suction catheter;
- Provide training and organize sharing sessions on tracheostomy tube exchange procedure;
- Enforce proper communication and documentation on all objects used during and after procedure;
- Promote the good practice of checking the integrity of nasogastric tube after removal;
- Increase staff awareness on the possibility of catheter breakage during insertion and removal of catheter;
- Emphasize use of appropriate pull force while pulling the Hickman catheter through the tunnel;
- Enhance cross team / department communication by using standard template for documentation;
- Use single layer dressing strips / one piece of dressing material for wound packing;
- Reinforce proper documentation of the number and type of gauzes packed

into and removed from a wound cavity;

- Enhance training and bedside supervision of doctors and nurses on documentation of wound management;
- Explore suitable products to replace the use of Raytec gauze in preventing seepage of cement during orthopaedic operation;
- Intensify gauze integrity verification when using gauze in the presence of cement;
- Use a designated container to hold sponges prepared for eye operation and count them when they are dry; and
- Count both the used and unused sponges after operation for verification against the total number of sponges prepared for the operation.

- **Surgery / interventional procedure involving the wrong patient or body part**
  - Develop a clear documentation system for minor eye procedure order in the patient's case notes;
  - Reinforce the practice of individual consent signing process;
  - Strengthen the practice of checking a patient's case notes prior to performing the procedure;
  - Enhance staff's knowledge in uncommon diseases and procedure;
  - Reconfirm the site of procedure when there are distractions or extended time lapse between the time-out procedure and the operation / procedure;
  - Reinforce patient identification before performing a procedure; and
  - Check a patient's identity with open-end questions.

- **ABO incompatibility blood transfusion**
  - Reinforce the concept and practice of "handling one specimen at one time including checking patient and laboratory identifiers and subsequent processing" at specimen reception, labeling and analytical process;
  - Arrange designated and experienced staff to provide continual supervision and training to staff;
  - Re-examine workflow and standardize pre-transfusion testing process amongst staff;
  - Review existing standard operating procedures for the workflow of hospital laboratory; and
  - Reinforce independent interpretation of first and second blood grouping results and proper documentation of essential steps of the type and screen procedure.

- **Medication error resulting in major permanent loss of function or death**
  - Improve the clarity of written notes; and
  - Standardize the handling of print-outs of the ePR drug prescribing history.

- **Maternal death or serious morbidity associated with labour or delivery**
  - Alert staff to be vigilant of potential major obstetric complications for women with high risk pregnancy; and
  - Take appropriate measures to prevent, detect and manage complications of high risk pregnancy.

Analysis of Reported Serious Untoward Events

39. Of the 97 SUEs reported from 1 October 2010 to 30 September 2011, 88 cases (90.7%) were related to medication error and 9 (9.3%) misidentification of patient or patient record / report leading to inappropriate treatment.

40. Of the 88 medication error cases, 42 were related to prescription and administration of "Known Drug Allergy" drugs to patients. There were 2 cases of severe allergy reaction to non-steroidal anti-inflammatory drug (NSAID). The key contributing factors were:

- The patient's allergy history was not verified against the Clinical Management System (CMS) during prescription and administration;
- The pharmacy checking system was bypassed by administering ward-stock drug, drugs borrowed from other patients / wards or left-over drugs from discharged patients;
- Doubtful or illegible writing of drug allergy items was not clarified;
- The prescribed drug was not recognized as belonging to the same drug group (e.g. Ciprofloxacin and Ofloxacin; Toradol and Diclofenac; Morphine and Tramadol) to which the patient was allergic;
- Lapse of concentration;
- Lack of awareness of the history of drug allergy;
- Inadequate knowledge of different drugs of the same class;
- Failure to comply with the guideline on drug administration (conduct allergy check);

- Non-compliance with the requirement to check drug allergy history before drug prescription and administration;
- Inadequate communication among clinical team members; and
- Failure to update the drug allergy history after consultation.

41. Seventeen cases of SUEs were related to medication error arising from administration of dangerous drugs (extra dose, wrong rate and wrong drug). The key contributing factors were:

- Inadequate communication of verbal order among staff;
- Incomplete checking / reviewing of drug infusion in duty hand-over;
- Failure to confirm the exact dose to be administered;
- Failure to counter-check the identity and dosage of dangerous drugs by two nurses;
- Failure to ensure the correct strength by checking the drug package label and Medication Administration Record (MAR);
- Failure to properly label all diluted preparation syringes;
- Failure to check the drug against the dangerous drug register to ensure administration of the right drug and dose;
- Not vigilant in watching out for Look-Alike Sound-Alike drug names; and
- Non-compliance with "3 checks 5 rights" during drug administration.

42. Twelve cases of SUEs were related to medication error resulting from the use of anticoagulants. The key contributing factors were:

- Preparation of incorrect strength of drug for infusion;
- Non-compliance with the checking procedure when performing infusion;

- Failure to communicate with other staff on the drug to be used for administration;
- Transcription error and inadequate knowledge of the operation of Medication Order Entry (MOE);
- Typing error in the MOE during prescription;
- Unawareness of patients or carers of dosage change;
- Failure to check prescription against medication administration record before signing off;
- Failure to check out the incorrect prescription sheet on discharge;
- Unclear communication on conditional ("if…then…")orders;
- Failure to identify the duplicated prescription;
- Knowledge gap in the safe use of heparin locked line; and
- Failure to make use of standardized Drug Dilution Table.

43. Five of the SUEs were related to the use hypoglycaemics and 12 to other medications. The key contributing factors were:

- Failure to check patient identity during prescription;
- Failure to properly conduct "3 Checks 5 Rights" during drug administration;
- Inadequate communication of verbal order among staff;
- Inadequate knowledge of the dose of resuscitation drugs / chemotherapy for rare cancer;
- Disturbance during medication administration causing lapses in concentration; and
- Knowledge gap in adjusting medication dosages for renal impairment patient.

44. Nine cases of SUEs were related to misidentification of patient or patient record / laboratory report leading to prescription of inappropriate or unnecessary treatment to patient. The key contributing factors were:

- Failure to verify the identity of the patient;
- Lapse of concentration;
- Inadequate communication between nursing staff in duty hand-over;
- Misinterpretation between staff members and domestic helper of patient;
- Failure to ensure the laboratory report or electronic record on computer display was related to the correct patient before making reference to the information; and
- Unsatisfactory workflow in handling critical laboratory results.

45. Other improvement actions to prevent medication errors were:

- Enhanced the Outpatient Medication Order Entry (OPMOE) System interface to prevent anticoagulants prescription errors; and
- Introduced procedures to prevent inadvertent administration of antibiotics of the Penicillin group to patients with known allergy to Penicillin.

Learning and Sharing

46. To promote learning and sharing, salient information on all reported SEs and SUEs, contributing factors and learning points have been shared in the 'HA Risk Alert' (HARA), a newsletter regularly published since November 2007. Abstracts of local and global healthcare risk alerts are also included in each publication of HARA to raise staff awareness on patient safety.

CHAPTER 6 – CONCLUSION

47. This is the fourth Annual Report on Sentinel and Serious Untoward Events. This Report could not have been produced without the support by HA senior management to quality and safety and the hard work of colleagues in cluster Quality and Safety Departments. Many clinical data in this Report concerned patients and their relatives who were accommodating to our errors and were provided by our colleagues who reported incidents in their work. We are thankful that such data and details could be made available for review.

48. The framework for reporting and handling medical incidents serves to promote a learning culture whereby incidents are regularly scrutinized and shared to raise the collective awareness of healthcare workers. This in turn will facilitate the clinicians and management to explore measures to enhance patient safety in the long run.

49. Detailed in this Annual Report are methods and tools to better our services. When shared among colleagues, these are not simply methods and tools but present opportunities to build a culture of quality and safety. The present challenge in promoting quality and safety is the competing priorities faced by the frontline and the management. It is therefore important to stay focused in our continuing endeavour to find the best approaches in improving patient safety and hope that the Sentinel and

Serious Untoward Events Policy will continue to be one of the cornerstones of the quality and safety culture in HA.

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CHAPTER 7 – THE WAY FORWARD

50. The following measures and activities will be maintained and monitored to further enhance patient safety:

- To implement the principles of "surgical safety policy" in operation theatres, interventional suites and bedside procedures; and
- To develop effective team communication and clinical risk awareness through the crew resources management (CRM) program.

51. The following improvement measures will be rolled out:

- 2D barcode will be used in the area of mobile radiography to reduce patient misidentification; and
- Suicidal risk assessment will be revisited and reviewed to look into possible additional measures to reduce the risk of patient suicides.

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

LOCAL ANAESTHETIC WAS INJECTED INTO THE PATIENT'S WRONG EYE

A patient was admitted for LEFT eye cataract extraction. The operation site was marked correctly by the surgeon and time-out procedure was performed by the surgeon and a circulating nurse. The surgeon obtained gloves from the other side of the operating theater (OT), returned to the RIGHT side of the patient and injected local anaesthetic to the RIGHT eye despite clear marking above the LEFT eye. Upon arrival at the OT, the supervising surgeon noticed the mistake when the injection needle was withdrawn by the surgeon. The operation was done on the patient's LEFT eye and there was no harm to the RIGHT eye.

Key contributing factor:

The surgeon was distracted by activities between the time-out procedure and the operation.

Key recommendation:

Reconfirm the site of procedure when there are distractions or extended time lapse between the time-out procedure and the operation / procedure.

CATHETERIZATION WAS PERFORMED ON THE WRONG PATIENT

Urinary catheter was removed from a patient ("patient A") by a community nurse at the patient's home. 3 hours later, another nurse ("the nurse") went to patient A's home to perform bladder catheterization for checking residual urine. On the way to patient A's home, she met an elderly lady accompanied by a domestic helper near the residence of patient A. The nurse asked the elderly lady if she was patient A. The elderly lady responded positively, so the nurse followed the elderly lady and her

domestic helper back to her home for bladder catheterization without further verification of identity. After the procedure, no urinary drainage bag was found in the elderly lady's home. The nurse contacted a relative of patient A and checked the identity of the elderly lady. It was subsequently discovered that the elderly lady was not patient A. The elderly lady did not have any adverse outcome.

Key contributing factor:

Patient identification procedure was not performed before intervention.

Key recommendations:

1. Reinforce patient identification before performing a procedure.
2. Check a patient's identity with using open-ended questions.

INCORRECT PROCEDURE WAS PERFORMED ON THE PATIENT

Patient A was arranged to have both eyes lower lids punctal cautery for her eye problem. Dr. A noted "book BE LL P. Cautery" in the out-patient note and a remark on the attendance slip. The counter staff registered patient A into the "eye minor procedure list" in the appointment system and generate an appointment date to patient. On the scheduled procedure date, nurse prepared documents for all attending patients and counterchecked the patient's identity on the case folder against the attendance breakdown to ensure correct patients. The nurse only found that the first three patients would undergo Probing & Syringing (P&S) procedures. However, she couldn't find the procedure order in patient A's case note and confirmed with patient A that she had ordered a procedure for tearing problem. Nurse thought it was a P&S and prepared the pre-printed consent form for all patients accordingly. Patient A was gathered with other 3 patients who would have P&S procedure for consenting and explanation on the procedure was given by Doctor C. Dr. C obtained the consent forms for those four patients. Before the procedure, patient A told Dr. C that she had a dry eye problem but Dr. C did not review the case note. Dr. C reassured that the procedure was to test her lacrimal ducts. Dr. E found that patient A had undergone a wrong procedure when she came back for following up one day after. Dr. E disclosed this incident to patient and reassured that there was no harm to her with the extra P&S procedure. Patient A received the correct procedure later.

Key contributing factors:

1. Unclear writing for the minor eye procedure order.
2. Consent was obtained by asking a group of patient to sign, resulting in incorrect procedure.
3. Failure to countercheck procedure order prior to signing consent and performing procedure.

Key recommendations:

1. Develop a clear documentation system for minor eye procedure order in the patient's case notes.
2. Reinforce the practice of individual consent signing process.
3. Strengthen the practice of checking a patient's case notes prior to performing the procedure.
4. Enhance staff's knowledge in uncommon diseases and procedure.

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

RETAINED GAUZE / SPONGE AFTER OPERATION / PROCEDURE

Case 1:

A bedridden old age home resident was admitted for a long standing infected buttock bedsore with a > 6cm deep wound. She has received treatment in the Mainland. 3 pieces of pus-soaked gauzes were found inside the wound during surgical debridement. The size of the retained gauzes was different from those provided by or used in HA. It is likely that the gauzes were used and retained while the patient received care outside HA.

Case 2:

During a combined cataract and glaucoma operation, as with usual practice, the surgeon cut a sponge into small pieces and soaked them with medication to apply to the operation site. The operating team confirmed 9 pieces of soaked sponge were applied to the operation site and the same number of sponge were subsequently removed. The surgeon examined the patient's eye on the following day and noted a foreign body in the patient's eye. A minor operation was performed and a small (1mm x 2mm) sponge fragment was removed. The patient recovered without any sign of infection or wound leak.

Case 3:

A patient was admitted for management of post-operative wound infection and negative pressure wound therapy (NPWT) was ordered. After 3 rounds of NPWT dressing of the same method (sandwiched a suction tube with a foam dressing), a nurse applied a suction tube, sandwiched by a piece of non-adherent dressing and a piece of gauze, for NPWT dressing. Another nurse removed the NPWT dressing for simple dressing before wound debridement. 2 pieces of gauzes were found deeply packed into the iliac crest wound during wound debridement. The gauzes were removed and the wound subsequently healed up well.

Case 4:

Emergency caesarean hysterectomy was performed on a patient with massive post-partum haemorrhage. Two scrub nurses assisted the operation while two circulating nurses counted off and weighed the bags of blood-soaked gauzes to estimate blood loss. The scrub nurse and a circulating nurse did the final surgical counting before wound closure (including counting the number of ***tied-up gauzes already put away in the bags***). No discrepancy was detected. The mother and baby were discharged after 5 days. The mother was admitted via A&E for left loin pain 9 months later. Plain abdominal x-ray and CT scan showed a 2.4 x 5.6 x 6.5cm shadow, with hyper dense line suggestive of a retained gauze, in the right iliac fossa of the patient. A long raytec gauze was removed in a subsequent elective laparoscopic operation. The patient's recovery was uneventful after the operation.

Case 5:

Patient had a history of multiple pressure ulcers with repeated debridement operations was admitted for hypotension, poor oral intake and worsening of pressure ulcers. Orthopaedic (O&T) Nurse Specialist (NS) assessed patient's wound condition and suggested packing with large piece of gauze for wound dressing. Daily wound care was performed by ward nurse. 9 days later, O&T NS reassessed the wound and documented 'no foreign material' left in the pressure ulcer before discharging patient. After that, patient was re-admitted for hypotension twice. Ward nurse had performed wound packing and irrigation during hospitalisation. For the latest admission, O&T NS found a piece of old stinky gauze in her left hip joint space when assessing her wound condition. The gauze was removed and wound irrigation performed. Patient's condition was stable and suitable for discharge.

Case 6:

Patient had frequent admission for fever, sacral sore management and referred to CNS for wound care upon discharge. Upon discharge from hospital, no wound packing was prescribed for the subsequent CNS wound dressing. On the latest admission, patient received an emergency debridement of sacral wound and two pieces of dressing materials soaked with blood were found and removed from the inside of the incised wound during operation. Patient was discharged afterwards and referred to CNS for wound care. Incomplete documentation of In & Out wound packing material was noted during previous CNS's home visit for wound dressing.

Key contributing factors:

1. The number of soaked sponge prepared and applied to the operation site might be counted inaccurately due to difficulty in counting wet sponge.
2. The number and type of gauzes put into the wound cavity were not documented.
3. Inadequate communication on the number and type of gauzes used.
4. Failure to conduct final count of ***individual number*** of raytec gauzes at the end of the operation.
5. Unclear role delineation among the nurses in surgical counting.
6. Insufficient documentation of counting and checking of consumables.
7. Lack of unified clinical protocol for management of pressure ulcer at different stages.
8. Ineffective communication between health care teams on the wound care method and the material used.
9. Non-compliance with the hospital protocol on using of whole piece of dressing material for wound packing.

Key recommendations:

1. Use a roll of gauze instead of individual pieces of gauze for wound packing.
2. Leave the tail end of the roll of gauze outside the wound for wound packing to facilitate subsequent gauze removal.
3. Use a designated container to hold sponges prepared for eye operation and count them when they are dry.
4. Count both the used and unused sponges after the operation for verification against the total number of sponges prepared for the operation.
5. Reinforce proper documentation of the number and type of gauzes packed into and removed from a wound cavity.
6. Enhance training and bedside supervision of doctors and nurses on documentation of wound management.
7. Enhance the departmental guideline on surgical counting.
8. Explore the use of “surgical counting system” to ensure proper surgical counting procedure and practice.
9. Consider adopting complementary checking measures in high risk operations.
10. Enhance communication and “speak up” culture among member of the surgical team.
11. Enhance cross team / department communication by using standard template for documentation.
12. Unified the protocol for management of pressure ulcer at different stages.

RETAINED PART OF INSTRUMENT / MATERIAL IN PATIENT AFTER OPERATION OR PROCEDURE

Case 1: Segment of Sagittal Saw Blade

During post-decontamination checking of instruments, a defective (broken foot end) sagittal saw blade was found. X-ray examination revealed a 2mm x 7mm foreign object over the periarticular operative area of the patient's hip. Patient and family agreed to adopt conservative management plan of monitoring only.

Case 2: Broken Tip of a Screw Holder

After a spinal operation, a post-operative X-ray revealed a 2mm metallic fragment over the patient's thoracic spine region. A defective (broken-tip) metallic screw holder was identified on rechecking of used instruments. Patient was informed of the incident. Surgical exploration for the retained fragment was not necessary. Patient's recovery was closely monitored.

Case 3: Segment of Tubing

A patient with long standing abscesses in both axilla has received treatment from the private sector. He was admitted for wound care and was given wound irrigation with angiocatheter and small tubing for a period of 4 months. After discharge from hospital, he continued to receive wound dressing by CNS for a month (without the use of any tubing). The patient subsequently noticed a 4cm long tubing protruding from his left axillary wound. The size of the retained tubing was different from those commonly used in HA for wound management. The source of the retained tubing remained uncertain.

Case 4: Mini-vessel Clip

Mini-vessel clips were used to control bleeding during minor operation on the patient's left arm. The scrub nurse suspected that one mini-vessel clip was missing during the first instrument count. Final instrument count was not performed before wound closure. A mini-vessel clip was found missing during post-decontamination instrument check. Post-operative X-ray revealed a retained mini-vessel clip.

Case 5: Fragment of Suture Shuttle Needle

After an arthroscopic shoulder rotator cuff repair operation, a post-operative X-ray revealed a 1mm x 2mm radio-opaque object over the patient's sub-acromial region. No instrument defect was identified. It was suspected that the object was a

fragment of a Single Use Device (suture shuttle needle). Arthroscopy was performed but failed to remove the foreign object. Patient's recovery was closely monitored.

Case 5: Segment of Radio-opaque Material

Raytec gauze was used to prevent cement from seeping into acetabulum (pelvic surface) during a cemented hemiarthroplasty (hip replacement). Scrub and circulating nurses confirmed the integrity of gauze swab, including radio-opaque thread length. Post-operative X-ray revealed a small radio-opaque line near the patient's right neck of femur. The patient and family opted for conservative management of the retention as the patient made a good recovery and showed no sign of infection.

Case 6: Dressing Strip

A patient had persistent sinus discharge on the right foot. He was followed up at Orthopaedics & Traumatology (O&T) clinic and was also receiving wound care and regular dressing by community nurse. A podiatrist prescribed silver impregnated special dressing strip (three layered gauze) for packing of patient's chronic sinuses by community nurse. Four dressing strips were packed into the wound. Subsequently, two dressing strips were removed during consultation in the O&T SOPD. The podiatrist switched the prescription of packing material to Betadine gauze. The community nurse continued with the patient's wound dressing and packing. One month later, one dressing strip was discovered from a new wound on the lateral aspect of the patient's right foot. Exploration of the plantar sinuses was recommended by the attending doctor but was declined by the patient.

Case 7: Endocap

An emergency oesophagogastroduodenoscopy (OGD) was performed on a patient with acute oesophageal varices bleeding. Endoscopic variceal ligation was performed by using a "Six Shooter" ligator. Bleeding stopped and an elective follow-up OGD was done 2 days later. A retained endocap was found in the oesophagus and was removed. The patient suffered no adverse outcome from the retained endocap.

Case 8: Cut Suction Catheter

A patient who was diagnosed with metastatic squamous cell carcinoma of hypopharynx had airway obstruction and tracheostomy done. Repeated blockage of tracheostomy tube requiring tube change for four times. On the last tube

exchange, a suction catheter, after being cut short, was used as an insertion guide. Subsequent CT scan of thorax and neck revealed a retained cut tubing in the patient's left lower lobe bronchus. Bronchoscopy was performed to remove the retained fragment.

Case 9: Broken Piece of Vascular Loop

Patient admitted for a laparoscopic right upper nephrectomy and deroofing of right ureterocele. The surgeon used silicone loops during the operation for identification and protection of right lower moiety renal vessels. The silicone loops were cut and counted to be 3 different lengths. Patient recovered and discharged from the hospital after operation. She had urinary tract infections three months later. A CT image of the abdomen and pelvis was arranged. A foreign body was suspected in the pelvis close to the anterior abdomen wall. An exploratory laparoscopy was performed on patient and a red-coloured foreign body was retrieved. The foreign body was identified to be part of a silicone loop (4.3cm long). Doctor explained the case to patient and patient recovered well and discharged from hospital.

Case 10: Segment of Naso-gastric Tube

A bedbound, non-communicable patient requiring long term NG tube feeding was transferred to medical ward for suspected chest infection and milk leakage from tracheostomy. A CXR was taken and showed a suspected retained fragment of NG tube in stomach region. An urgent Oesophago-gastro-duodenoscopy (OGD) was performed. A 18cm long fragment of silicon feeding tube was found in patient's stomach and was removed. The patient did not have any complication resulting from the retained feeding tube.

Case 11: Tip of Hickman catheter

A Hickman catheter was successfully inserted for chemotherapy on a lymphoma patient after second attempt. During hospitalization, the patient complained of a tubular structure under the skin anterior to the right clavicle and doctor explained to him that the tubular structure was part of the Hickman catheter inserted. 5 months later, the Hickman catheter was removed by a doctor and but the tubular structure was still noted over the patient's chest wall. After reviewing the XR image and physical examination, an operation for removal of the tubular structure was performed. It was confirmed that the foreign body was the tip of a Hickman catheter. Patient recovered well after the procedure and discharged from hospital.

Key contributing factors:

1. Integrity checking was not performed when disassembling the saw blade from hand piece before wound closure.
2. Difficulty in detecting tiny dislodged fragment of instrument.
3. Final instrument count was not performed.
4. Junior staff did not speak up when possible error was suspected.
5. Inadequate awareness of the risk that Raytec gauze could stick to cement and detach during removal.
6. Insufficient communication when encountering difficulty in gauze removal.
7. Documentation of the number of gauzes packed or removed from the wound had not been included in the operational procedure.
8. Dressing strips with multiple layers were used.
9. The endocap could not be perfectly fitted onto the endoscope because of size discrepancy.
10. The endoscope was not thoroughly checked after the procedure.
11. Inadequate knowledge and experience of doctors on the equipment and the setting of Endoscopy Unit (EDU).
12. No standard guideline on best practices for tracheostomy tube exchange, particularly relating to the use of insertion guide (including length, material & procedure).
13. No equipment count /check after procedure.
14. Failure to detect the shortened vascular loop, or damaged Hickman catheter.
15. Unawareness of the possibility of Hickman catheter breakage when difficulty in insertion or removal of the catheter was encountered.
16. Failure to detect retention of NG tube on X-ray images.

Key recommendations:

1. Perform integrity checking when disassembling the saw blade from hand piece before wound closure.
2. Alert staff on potential risk of breakage of fragile equipment.
3. Consider sourcing for an alternative model of sagittal saw hand piece and blade.
4. Verify instrument integrity both before and after each operation.
5. Alert staff on possibility of instrument breakage.
6. Document the metal retention near the patient's spine by putting up an MRI-alert in the patient's medical record / CMS and by issuing an alert letter to the patient.
7. Consider the possibility of retained foreign object for patients with unhealed chronic abscess.

8. Comply strictly with the standard counting procedures and surgical safety policy.
9. Complete the final count of all countable items before patients leave the OT room.
10. Strengthen the sign out process of the Surgical Safety Checklist (to ensure completion of all processes).
11. Explore suitable product to replace the use of Raytec gauze in preventing seepage of cement during orthopaedic operation.
12. Intensify gauze integrity verification when using gauze in the presence of cement.
13. Enhance communication between the podiatrist and community nurse, e.g. by using a standard template to document the number of gauze used and removed.
14. Use single layer dressing strips for packing deep wound instead of multi-layer dressing.
15. Review / develop guideline and reminders for setting up and aftercare of endoscopes, with inclusion of equipment integrity check in the procedure sign out checklist.
16. Conduct EDU orientation course for surgeons and interns utilizing its service.
17. Stock endocaps of different sizes to reduce chances of size discrepancy.
18. Implement proper practice of using cut suction catheter as insertion guide for tube exchange by adopting 15 cm above tracheostomy stoma as the minimum length of the cut suction catheter.
19. Enforce proper communication and documentation on all objects used and their count during and after procedures.
20. Provide training and organize sharing sessions on tracheostomy tube exchange procedure.
21. Increase staff awareness on the possibility of catheter breakage during insertion and removal of catheter.
22. Emphasize use of appropriate pull force while pulling the Hickman catheter through the tunnel.
23. Promote the good practice of checking the integrity of NG tube after removal.

Category 3: ABO incompatibility blood transfusion

Patient A was admitted for elective spinal surgery. Her blood grouping result before operation was A Rh(D) positive. Two units of red cells were transfused to patient A post-operatively for replacing her blood loss. After the operation, patient was noted to have absent pulse on patient's left foot. An urgent left femoral embolectomy was done with no definite arterial thrombus retrieved. Anticoagulant was given during and after the procedure. Few hours after the operation, patient A was noted to have unequal pupils sizes. CT brain was performed and showed intracerebral haemorrhage. Patient A was thus transferred to another hospital for further neurosurgical management. Subsequent type and screen of blood group in the other hospital showed that patient A's blood group was B Rh(D) positive which was different from the previous blood group report. The result was confirmed with repeated blood group testing. Patient A's condition was critical and transferred to Intensive Care Unit for close monitoring. The incident had been disclosed to patient A's family members. Another patient B whose blood sample for type and screen test were also performed at about the same time with patient A's first blood group testing was reported to have blood group B Rh(D) positive. Repeated blood test for patient B's original sample for twice confirmed that patient B's blood group should be A Rh(D) positive. Patient B did not require any blood transfusion during hospitalization.

Key contributing factors:

1. Process and workflow design were unfavorable to multi-step manual procedure.
2. Standard operation procedures were not sufficiently explicit in areas pertaining to important control processes of the testing procedure and / or not tailored to the circumstances of hospital laboratory.
3. Staff tended to multitask and be easily distracted.
4. Work place arrangement was not conductive to efficient workflow.
5. The functional management and staff communication in the Core Laboratory service was compartmentalized and not efficacious.

Key recommendations:

1. Reinforce the concept and practice of "handling one specimen at one time including checking patient and laboratory identifiers and subsequent processing" at specimen reception, labeling and analytical process.
2. Arrange designated and experienced staff to provide continual supervision and training to staff.
3. Re-examine workflow and standardize pre-transfusion testing process amongst staff.
4. Review existing standard operating procedures on the workflow of hospital laboratory.
5. Reinforce independent interpretation of first and second blood grouping result and proper documentation in essential steps of the type and screen procedure.

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

A patient who had a history of Diabetes Mellitus, hypertension, chronic renal failure and aortic stenosis was admitted to Medical ward for shortness of breath and congestive heart failure. A resident assessed the patient and prescribed medications. He also wrote "resume usual med, stop Zocor, lasix to IV" on the patient's note for documentation. A junior doctor mis-interpreted the resident's notes as an instruction and transcribed the patient's usual medications in addition to those already prescribed on the MAR. Subsequently, it was found that the Drug Prescribing History print-out from which the junior doctor transcribed the medication list actually belonged to another patient. The error was discovered during the morning patient ward round on the next day and the drugs had already been given to patient. Patient was found to have hypotension and given inotropes agent. She was transferred to High Dependency Unit for further management. The incident was disclosed to her relatives. Patient's condition deteriorated and passed away two days later.

Key contributing factors:

1. Communication breakdown.
2. Lack of standard practice in handling ePR Drug Prescribing History printout.
3. Non-compliance with guideline of patient identity checking.

Key recommendations:

1. Improve the communicability of written notes.
2. Standardize the handling of print-outs of the ePR drug prescribing history.

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

Out of the 20 suicide cases, 10 patients committed suicide during home leave, 8 committed suicide while staying in hospital and 2 missing patient committed suicide outside hospital compound; 12 patients had terminal cancer or chronic illnesses and 8 had mental illness.

Key contributing factors:

Apart from the underlying medical conditions of patients and their mental health conditions (e.g. depression from the chronic or terminal illnesses), the following are other factors that may have contributed in varying degrees to a patient's suicide:

1. Sudden and unpredicted change of mental conditions and behavior of patients.
2. Change of psychological conditions in patients with terminal illnesses.
3. Inadequate patient suicidal risk assessment.
4. Inadequate awareness of psychological needs of high risk patients.
5. Difficulty in identifying all at risk psychiatric patients with existing suicide assessment tool.
6. Suboptimal awareness of severe psychiatric symptoms (such as hallucination) by medical and nursing staff.
7. Inadequate training for frontline staff to counsel and handle special patient groups and provide psychological support to the patient.
8. Existence of environmental risks which may facilitate patients' suicidal acts.
9. Insufficient supporting services for patients on home leave.

Key recommendations:

1. Arouse alertness to significant changes in patient's pain score.
2. Enhance suicidal risk assessment and staff awareness of patient suicide in hospital.
3. Monitor the documentation of "suicide risk assessment and nursing intervention" and "clinical management for patient with suicidal risks".
4. Arrange training course for clinical staff on handling special patient groups, such as how to break bad news, observation and counseling skills.
5. Provide sufficient special information to patients to enhance understanding on correct concept of their disease condition.
6. Strengthen communication with patients' family members on suicidal precaution

during hospitalization.

7. Conduct environmental scanning and modify facilities and environment to reduce suicidal risks.
8. Enhance access control of patients in ward entrances or exits.
9. Beware of the risk in providing patient with items, e.g. power cable, which can be used for hanging.
10. Design washroom to ensure that the partitions are extended up to the ceiling to minimize risk of being used as supporting point for hanging.
11. Encourage appropriate referral of patients to clinical psychologists / psychiatrists for early intervention and risk mitigation.
12. Explore appropriate community support for home / day leave patients.

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

A woman with triplet pregnancy had antenatal follow-up in the Mainland and HA Hospital. At 31st week of gestation, the patient was advised that she needed hospital admission for observation and monitoring. The patient refused admission for financial reasons. The patient was admitted 4 days later for nasal bleeding and headache. Hypertension and proteinuria were detected. Soon after admission, her conscious level deteriorated and she developed left hemiplegia. CT brain revealed massive acute intracranial haemorrhage. Emergency Caesarean section and craniotomy were performed immediately. Three live babies were delivered. The patient's condition deteriorated after the operation and she was certified dead the following day.

Conclusion:

The care provided by the clinical team to this woman with high risk pregnancy is considered timely and appropriate.

Learning Points:

1. Alert staff to be vigilant of potential major obstetric complications for women with high risk pregnancy.
2. Take appropriate measures to prevent, detect and manage complications of high risk pregnancy.

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