**For information on 25.1.2024**

**AOM-P1928**

**Hospital Authority**

**Annual Report on Sentinel and Serious Untoward Events (October 2022 – September 2023)**

## Advice Sought

Members are invited to note and comment on the Sentinel and Serious Untoward Events reported between October 2022 and September 2023 in the Hospital Authority **(HA)**[1], the ongoing risk reduction measures and the way forward.

## Background

2. Sentinel event **(SE)** (「醫療風險警示事件」) is defined as an "unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof", and serious untoward event **(SUE)** (「重要風險事件」) is defined as an "unexpected occurrence which could have led to death or permanent harm". The HA Sentinel Event Policy was first implemented in October 2007. In January 2010, it was revised to include two categories of SUEs and was further updated in July 2015, through which the HA Sentinel and Serious Untoward Event Policy defined the process for identification, reporting, investigation and management of SE and SUE in HA. The list of SE/SUE categories is given at **Annex 1**.

3. This Annual Report serves to share the lessons learnt from SEs and SUEs, with a view to improving quality patient-centred care through teamwork. The Annual Report contains a summary and analysis of the SEs and SUEs reported via the Advance Incident Reporting System from October 2022 to September 2023. It summarises the root causes and recommendations identified by the Root Cause Analysis **(RCA)** panels. The Annual Report also details the risk reduction measures which have been implemented by hospitals / clusters and HA Head Office **(HAHO)** management, and the plan for mitigating the risk of recurrence of similar incidents in the future.

4. The Executive Summary of the Annual Report is given at **Annex 2**. The electronic version of the full Annual Report in PDF format will be available at http://www.ha.org.hk/haho/ho/psrm/E_SESUE2023.pdf.

[1] The last annual report on Sentinel and Serious Untoward Events was submitted to the Board on 19 January 2023 via Administrative & Operational Meeting (AOM) Paper No. 1827 on "Annual Report on Sentinel and Serious Untoward Events (October 2021 – September 2022)".

**Summary of Sentinel and Serious Untoward Events**

5. From October 2022 to September 2023, a total of 19 SEs and 78 SUEs were reported. In the previous reporting period, the number of SEs and SUEs were 26 and 87 respectively.

6. The annual number and distribution of SEs by category in the last 10 years, from October 2013 to September 2023, are set out in **Figure 1** and **Figure 2** below.

Figure 1 - Yearly distribution of Sentinel Events in the last 10 years

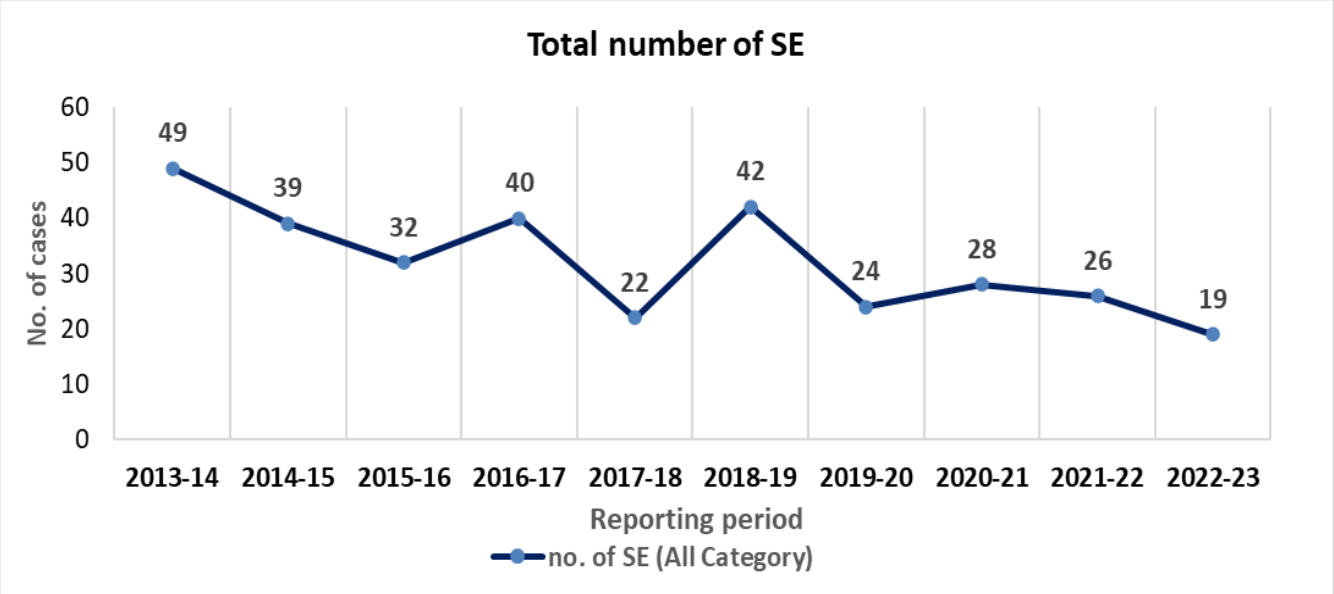
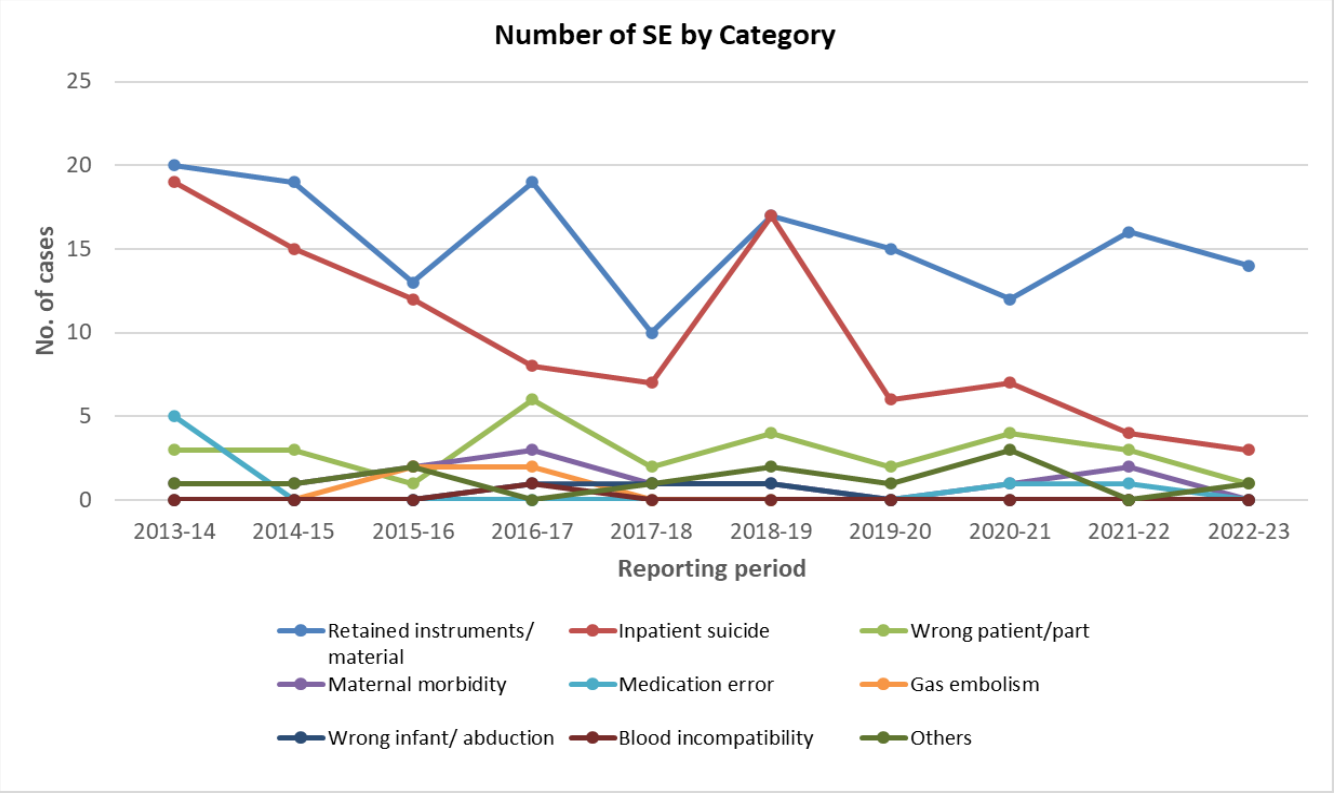



Figure 2 - Yearly distribution of Sentinel Events by category in the last 10 years



7. The annual episodes of patient attendances / discharges and deaths were 21 million in 2023. In 2022/23, the 19 reported SEs were equivalent to the SE incident rate of 0.9 SE per 1 000 000 episodes of patient attendances / discharges and deaths (slightly lower than the SE incident rate of 1.4 in 2021/22).

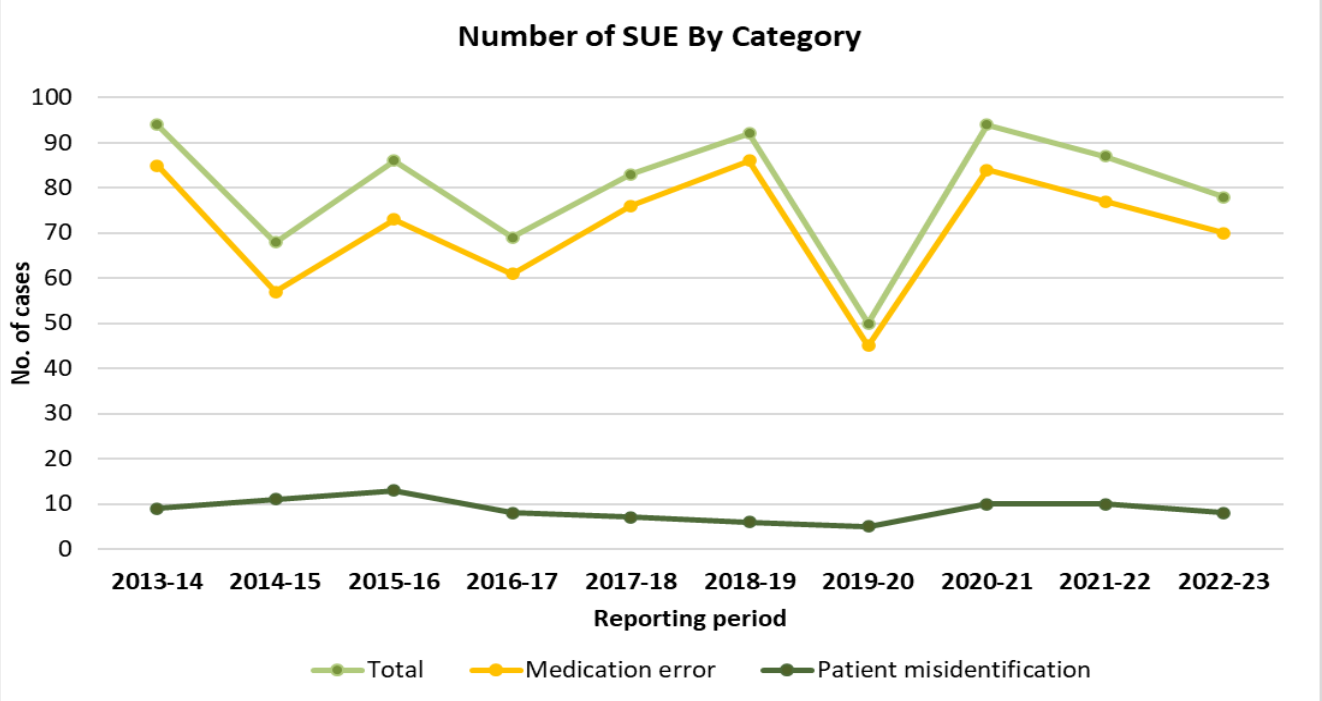
8. The top two categories of SEs reported in the said period were "retained instruments or other material after surgery / interventional procedure" (14 cases) and "death of an in-patient from suicide (including home leave)" (three cases) (**Annex 3**).

9. Of the 14 "retained instruments or other material after surgery / interventional procedure" cases, eight were related to the counting process and six involved broken instruments / material. Seven of the 14 cases occurred in the operating theatres or interventional suites.

10. There were three cases of "death of an in-patient from suicide", including one patient found missing and one on "home leave", representing a suicide rate of 0.16 per 100 000 in-patient admissions. For reference, the estimated in-patient suicide rates among non-psychiatric in-patients in general hospitals of the United States is 0.03 per 100 000 non-psychiatric admissions, and among psychiatric in-patients, the estimated rate is 3.2 per 100 000 psychiatric in-patient admissions.[2]

11. Of the 78 reported SUEs, 70 were "medication errors that could have led to death or permanent harm" and eight were "patient misidentifications which could have led to death or permanent harm" (See **Figure 3**).

Figure 3 - Yearly distribution of Serious Untoward Events by category in the last 10 years




[2] Incidence and Method of Suicide in Hospitals in the United States. The Joint Commission Journal on Quality and Patient Safety, November 2018.

12. The major contributing factors identified by the RCA panels can be grouped into communication, clinical handover / documentation, knowledge / skills / competence, work environment, and policies / procedures / guidelines, which are summarised in the Annual Report. Recommendations made to address these factors are highlighted in paragraph 14 below.

## Learning and Sharing

13. Learning and sharing are of utmost importance in preventing recurrence of similar SE / SUEs. The findings and recommendations from RCA panels are shared with staff through the following platforms:

(a) Publications:
  (i) Quarterly HA Risk Alert newsletters;
  (ii) Annual Reports on Sentinel and Serious Untoward Events;
(b) Half-yearly Patient Safety Forums;
(c) Half-yearly cluster visits; and
(d) Clinical Coordinating Committees and Central Committees.

## Ongoing Risk Reduction Measures

14. Various risk reduction measures have been implemented or are being adopted to enhance patient safety. Highlights of these measures are set out below:

(a) Surgical Safety:

  (i) Electronic Wound and Packing Solution

    - In collaboration with Nursing Services Department **(NSD)** and Information Technology and Health Informatics Division **(IT&HID)**, the development of an electronic documentation for packing module was initiated with an aim to standardising packing documentation processes.

  (ii) Prevention of Retained Guide Wire

    - An e-Course on "Safety Precautions for Central Venous Catheter **(CVC)** Insertion" was introduced on the eLearning platform.

    - To enhance staff awareness on guide wire safety, a billboard showing the number of CVC retention incidents across clusters was developed and is accessible on the Patient Safety and Risk Management website.

(iii) Prevention of Nasopharyngeal Airway Retention

- In collaboration with Business Support Services Department **(BSSD)**, we have identified an alternative design of the concerned nasopharyngeal airway with more rigid material to avoid displacement.

- Regular meetings would continue to be held with BSSD to review various medical instruments and equipment.

(b) Medication Safety:

(i) Known Drug Allergy

- The implementation of the Inpatient Medication Order Entry **(IPMOE)** system has reached 40 hospitals. The IPMOE system was also extended to the Accident & Emergency Departments in Tuen Mun Hospital, Queen Mary Hospital and Alice Ho Miu Ling Nethersole Hospital and Intensive Care Units **(ICU)** in Kwong Wah Hospital.

- The Quality & Safety Division, in collaboration with IT&HID, continued to explore measures to reduce drug allergy incidents in relation to "pseudo-identity". Initiatives underway aim to improve the user interface for "Check ID" in Clinical Management System, and enhance safety and accuracy of medication administration by linking the allergy status of verified Hong Kong identities with the corresponding "pseudo-identities" of patients.

(ii) Clinical Intention and Medication Journey

- The Clinical Intention and Medication Journey features were developed in IPMOE to help clearly indicate the clinical intent behind a prescription and provide a comprehensive view of patient's medication history over the year. The implementation of these features reached all clusters.

(c) Infusion Pump Risk Reduction

(i) The working group on safe use of infusion pump conducted a review of the operational guidelines.

(ii) The review highlighted the critical need for tracing of infusion lines by hand, performing independent double checks and reinforcing the compliance to 5-rights checking during medication administration. Follow-up action was being undertaken to implement the areas of improvement so identified.

(d) Tourniquet Risk Reduction

(i) A working group on safe use of tourniquet was newly formed and conducted a stock-take across all clusters to assess current practice and identify areas for improvement.

(ii) Improvement measures such as using "auto-releasing tourniquet" and "one staff, one tourniquet" were proposed by the working group for implementation in all clinical departments.

**Way Forward**

15. A number of initiatives have been planned for 2024 to enhance patient safety:

(a) Surgical Safety:

(i) A corporate-wide "Electronic Wound and Packing Solution" system would be piloted in 2024. It aims to improve communication and handover of patient's wound condition among clinical staff throughout the patient journey.

(b) Medication Safety:

(i) In 2024, IPMOE will be implemented in Kwai Chung Hospital and extended to ICU of Tseung Kwan O Hospital and United Christian Hospital.

(ii) Medication Genie would be further expanded to include more data sources to support medication administration, such as e-vitals.

(c) Infusion Pump Risk Reduction:

(i) Collaboration with NSD would be continued to reinforce good practices and enhance training to improve competency and proficiency among pump users.

(ii) The feasibility of utilising drug library for the top high risk drug groups would be explored.

(iii) Focus would be placed on equipment standardisation and technological advancement in procurement strategies.

(d) Tourniquet Risk Reduction:

(i) Improvement measures and recommendations suggested by the working group would be communicated and implemented in collaboration with NSD.

(ii) Alternative devices such as auto release tourniquet and tourniquet with timer would be explored.

(iii) A policy of "Prohibition of the use of gloves as tourniquets" would be established.

(iv) An intranet webpage would be developed to share good practices, innovative devices and technologies.

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18 January 2024

**Annex 1 to AOM-P1928**

## List of Sentinel Events and Serious Untoward Events Categories

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 in-patient 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

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

# 1. Executive Summary

This annual report provides a summary of all Sentinel Events (SE) and Serious Untoward Events (SUE), comprising 19 SE and 78 SUE, reported between October 2022 and September 2023.

## Sentinel Events

The 19 reported SE represented an incident rate of 0.9 per 1 000 000 episodes of patient attendances / discharges and deaths. The SE incident rate reached a ten-year low. Sixteen of the 19 Sentinel Events (SE) occurred in acute general hospitals with 24-hour Accident and Emergency (A&E) services (84%). Two occurred in acute hospitals of special nature (11%) and one occurred in hospital with a mix of acute and non-acute services and psychiatric service (5%).

The top two categories of SE were *retained instruments or other material after surgery / interventional procedure* (14 cases) and *death of an inpatient from suicide (including home leave)* (3 cases).

Of the 14 cases of *retained instruments or other material after surgery / interventional procedure*, seven were related to the counting of instruments / material and the other seven involved broken instruments / material.

The three reported cases of *inpatient suicide* represented a suicide rate of 0.16 per 100,000 inpatient admissions. The overall assessment and management as noted by the investigation panel were considered appropriate.

The remaining two reported SE were *Surgery/interventional procedure involving the wrong patient or body part* (one case), and *Other adverse events resulting in permanent loss of function or death* (one case).

Among the 19 SE, four cases (three *inpatient suicide*, one *other adverse events resulting in death*) resulted in mortality.

Of the remaining SE, 12 had minor / insignificant consequence and three had major / moderate consequence.

The common contributing factors of SE are as follows:

1. Communication, knowledge / skills / competence
2. Work environment / scheduling
3. Patient factors
4. Equipment
5. Policies / procedures / guidelines
6. Safety mechanisms

Recommendations were made to address these factors.

## Serious Untoward Events

Of the 78 SUE that could have resulted in death or permanent harm, 70 were *medication error* and 8 were *patient misidentification*.

The three most common types of *medication error cases* were those involving *known drug allergy* (17 cases), *dangerous drug(s)* (8 cases) and *anticoagulant* (8 cases). Of the *known drug allergy* cases, eight involved penicillin, four involved non-steroidal anti-inflammatory drugs (NSAID), the remaining involved amlodipine (2 cases), mydrin-P (1 case), lignocaine (1 case) and chloramphenicol (1 case).

Of the 78 SUE, 24 had moderate consequence and 54 had minor / insignificant consequence.

**Annex 3 to AOM-P1928**

## The Number of Sentinel Events by Category

| Category | 4Q13 - 3Q14 | 4Q14 - 3Q15 | 4Q15 - 3Q16 | 4Q16 - 3Q17 | 4Q17 - 3Q18 | 4Q18 - 3Q19 | 4Q19 - 3Q20 | 4Q20 - 3Q21 | 4Q21 - 3Q22 | 4Q22 - 3Q23 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Retained instruments or other material after surgery / interventional procedure** | 20 | 19 | 13 | 19 | 10 | 17 | 15 | 12 | 16 | **14** |
| **Death of an in-patient from suicide (including home leave)** | 19 | 15 | 12 | 8 | 7 | 17 | 6 | 7 | 4 | **3** |
| **Surgery / interventional procedure involving the wrong patient or body part** | 3 | 3 | 1 | 6 | 2 | 4 | 2 | 4 | 3 | **1** |
| **Maternal death or serious morbidity associated with labour or delivery** | 1 | 1 | 2 | 3 | 1 | 1 | 0 | 1 | 2 | **0** |
| **Medication error resulting in major permanent loss of function or death** | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | **0** |
| **Intravascular gas embolism resulting in death or neurological damage** | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Infant discharged to wrong family or infant abduction** | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | **0** |
| **ABO incompatibility blood transfusion** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Other adverse events resulting in permanent loss of function or death (excluding complications)** | 1 | 1 | 2 | 0 | 1 | 2 | 1 | 3 | 0 | **1** |
| **Total** | **49** | **39** | **32** | **40** | **22** | **42** | **24** | **28** | **26** | **19** |