Kwong Wah Hospital announces root cause analysis report of previous sentinel event

The following is issued on behalf of the Hospital Authority:

The spokesperson for Kwong Wah Hospital (KWH) today (April 12) announces the root cause analysis report of a previous sentinel event:

KWH announced a sentinel event on February 8 and appointed a Root Cause Analysis Panel to investigate the underlying cause of the incident and make recommendations. The panel has completed the investigation. The report has been submitted to the Hospital Authority Head Office.

A 51-year-old male patient was admitted to the isolation ward of KWH due to shortness of breath on December 16, 2023. He was later transferred to the Intensive Care Unit due to septic shock and respiratory failure and required the support of a ventilator. His condition was critical. He was diagnosed with pulmonary tuberculosis after an investigation. After receiving treatment, he was transferred to the isolation ward at around 2.30pm on February 5, 2024, to continue his treatment. The patient was conscious but still required the support of a ventilator.

In order to ensure the patient's safety, healthcare staff applied upper limb restrainer to secure the patient on the bed. The healthcare staff then checked the ventilator and other medical equipment and confirmed that they were in normal function, and then left the room at 3.20pm. The healthcare staff later entered the room again at 3.45pm to observe the patient's condition and recorded the ventilator data. There was no abnormalities observed from the patient and the staff left at 3.55pm. At 4.40pm, when the healthcare staff entered the room for medical procedures, the ventilator tubes connected to the patient were found detached. The patient was unresponsive with no pulse. The healthcare staff immediately reconnected the ventilator tubes and performed resuscitation. The patient's pulse recovered and was transferred to the Intensive Care Unit. He is currently hospitalised in critical condition.

After reviewing relevant information, the Panel believed that the ventilator tubing dislodgement was caused by the patient's body movement, which is a known risk among ventilated patients. The investigation also confirmed that all the equipment involved, including the ventilator and the central monitoring system, was in order and functioned normally, except that there was no data transfer between the bedside monitor and the central monitor, which was believed to be caused by a disconnection between the two monitors.

The Panel concluded that three factors existed in this sentinel event.

The visual and audible alarms of the ventilator and the bedside monitor could not be detected by staff outside the isolation room when the double doors were closed. There was a lack of a clear cross-checking mechanism to ensure the normal functioning of monitoring equipment. There was a considerable distance between the central monitoring system and the nurse station, plus the central monitoring system simultaneously showing data from multiple life-supporting equipment, resulting in difficulties for healthcare staff to notice properly the real-time change in data and the disconnection between the bedside and central monitors.

The panel made the following recommendations:

1. Improving alarm systems for ventilators and monitors, such as the use of an amplifier system and upgrading the alarming system to facilitate the monitoring;
2. Developing a cross-checking mechanism for life-supporting equipment and monitoring systems to ensure effective continuous patient monitoring;
3. Improving the design of user interface and positioning of the central monitoring system;
4. Considering using capnography monitoring to enhance close observation of ventilated patients; and
5. Raising medical staff's alertness to medical devices and the related alarming system.

KWH will implement the relevant recommendations to prevent similar incidents from happening again. The hospital has explained to family members the report's findings and extended sincere apologies to them again.

KWH has submitted the report to the Hospital Authority Head Office. The hospital also expressed gratitude to the panel. The membership of the panel is as follows:

Chairperson:
Dr Yan Wing-wa
Consultant, Hyper-baric Oxygen Therapy Centre, Pamela Youde Nethersole Eastern Hospital

Members:
Dr Yeung Yiu-cheong
Deputy Chief of Service, Department of Medicine and Geriatrics, Princess Margaret Hospital

Dr Helen Yip
Consultant, Department of Medicine and Geriatrics, Kwong Wah Hospital

Mr Li Chi-man
Ward manager, Department of Medicine and Geriatrics, Kwong Wah Hospital

Ms Terry Ko

Department Operation Manager, Department of Medicine, North District Hospital

Dr Nicole Chau
Senior Manager (Patient Safety & Risk Management), Hospital Authority