



RISK ALERT



ISSUE 73 Apr 2024

A Risk Management Newsletter for Hospital Authority Healthcare Professionals

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Sentinel Events (SEs) (4Q 2023)

- ❖ Retained Instruments / Material
- ❖ Inpatient Suicide
- ❖ Wrong Patient / Body Part
- ❖ Others

Serious Untoward Events (SUEs) (4Q 2023)

- * Adrenaline
- * Heparin
- * Warfarin
- * Insulin

OPENING MESSAGE

Embracing Simulation Training for Nursing Quality and Safety



Sir Cyril Chantler once stated, "Medicine used to be simple, ineffective, and relatively safe. It is now complex, effective, and potentially dangerous." These words hold true in our ever-evolving healthcare landscape, prompting us to take proactive measures to enhance nursing practices, deliver optimal patient care, and mitigate potential risks.

In the pursuit of patient safety, it is crucial to recognise that most sentinel events in healthcare are often not in consequence of inadequate technical knowledge. Instead, they arise from human factors errors, such as distraction, fatigue, complacency and communication breakdown.

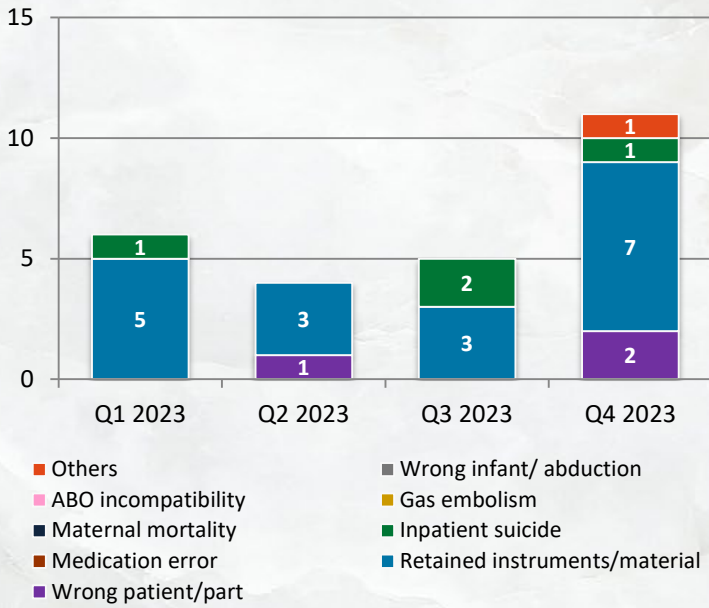
Committed to patient safety, we strive to integrate simulation training into the nursing training curriculum of all nursing staff. By providing an immersive learning environment, nurses can engage in high-fidelity scenarios derived from real clinical settings. This approach allows them to experience the challenges and complexities encountered in different clinical contexts, enhancing their situational awareness and critical thinking skills. During debriefing sessions, nurses can analyse their own actions, gaining insights into the impact of their clinical decisions on patient safety. This reflective process empowers nurses to address individual weaknesses, and elevate their overall performance.

The implementation of simulation training for our nursing staff holds great potential for improving patient safety. Let's remain vigilant and persistent in our unwavering commitment to keeping patients safe and providing high-quality care.

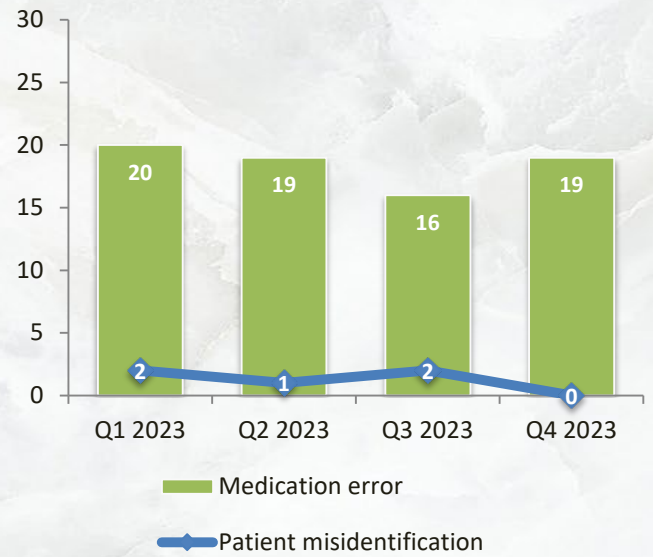
Dr Danny TONG
Chief Manager (Nursing) / Chief Nurse Executive, HAHO

SE & SUE STATISTICS

Distribution of SE in the last four quarters



Distribution of SUE in the last four quarters



SENTINEL EVENTS

Others

A patient was admitted for blood pressure control ahead of a scheduled elective cataract surgery two days later. With a medical history of inguinal hernioplasty, intestinal obstructions, and peptic ulcer with surgery performed, he reported abdominal pain during admission, which worsened into desaturation with shortness of breath, requiring oxygen therapy at 5L/min. His blood pressure subsequently dropped. Suspecting acute abdomen or bowel obstruction, clinical teams suggested admission to the intensive care unit (ICU).

In preparation for the transfer, the oxygen tubing was detached from the wall oxygen flowmeter and connected to the oxygen cylinder. The oxygen flow rate was adjusted to 5L/min. The **sound of gas flow was heard** before the oxygen tubing was connected to the cylinder. The patient was then escorted by the transport team to the ICU.

During transportation, the patient experienced desaturation and the oxygen flow rate was increased to 9L/min. Upon ICU arrival, it was discovered that the oxygen cylinder valve had not been turned on.

Learning Points

- 1. Refresher Training for Oxygen Cylinder Use:** Staff handling oxygen cylinders and transporting critically ill patients should receive refresher training
- 2. Clear roles:** The transport team must have clearly defined roles during the entire transport process (i.e. both preparation for and actual transportation)
- 3. Clinical handover and documentation** during entire transport process: Utilise transportation form / checklist and crew resource management training to enhance communication
- 4. Understand FX oxygen cylinder:** Be aware that residual oxygen could be trapped in the space between oxygen valve and flow selector. Turning on the flow selector could release this oxygen, creating a sound of gas flow even when the valve is closed.
- 5. Visual Aids for On-the-Spot Learning:** Put up **education poster** at cylinder storage locations and attach **cue card** to each cylinder



Laser Iridotomy to An Unintended Eye

A patient was scheduled for **right eye prophylactic laser iridotomy (LI) followed by left eye cataract extraction**. On the day of the **right** eye LI procedure:

- ✓ **Pre-intervention checks and site marking** (right forehead)
- ✓ **TIME OUT** safety checks to confirm correct patient, procedure and laterality

Due to dim lighting and a blurred protective plastic shield used for infection control, the LI laser was mistakenly applied to the **left** eye after completing right eye, as the site marking was not clearly visible.

The error was immediately recognised. The patient experienced no adverse effects and later underwent left eye cataract surgery without complications.

Learning Points



1. Remove or replace the plastic shield to ensure clear visibility



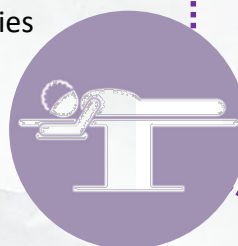
2. Introduce micropore strips for marking to facilitate laterality verification

Incorrect Side punctured for Endovenous Obliteration of Varicose Vein with Radiofrequency

A patient with bilateral varicose veins was scheduled for **Bilateral Great Saphenous Vein (GSV) + Left Small Saphenous Vein (SSV)** Endovenous Obliteration of Varicose Vein with Radiofrequency Ablation (RFA) + Ligation and Avulsion of Bilateral Perforators.

- ! **E-consent:** Did not specify RFA was intended for **bilateral** GSV and **left** SSV only
- ! **Surgical site marking:** Not performed during pre-operative assessment in ward
- ! **SIGN IN** (the *patient was in prone position*): marking of the puncture point was incorrectly performed on the **right** calf for SSV puncture, instead of the intended **left** SSV
- ! **TIME OUT:** Incorrect side for RFA and the discrepancies between the intended operation stated in the safety checklist and e-consent were not detected

The **right** SSV was punctured (2-3mm); this was immediately noted, with the procedure then correctly proceeding on the **left** SSV uneventfully.



1. Ensure **surgical site marking** was performed **before arrival** to the theatre room.
2. When performing surgical procedures on patients in a **prone position**, use explicit markings of "**R**" and "**L**" to **indicate laterality**
3. Conduct **vigilant safety check** at each phase of surgical checking to confirm the correct patient, procedure, and body parts involved

In-Patient Suicide

A elderly patient with end-stage renal failure was admitted for fluid overload and chest infection. Throughout the stay, the patient remained emotionally stable, and a **suicide risk assessment indicated no risk**. Similarly, **no signs of significant depression or anxiety** were noted during the palliative team's assessment.

During a late night routine ward round, the patient was asleep without any apparent abnormalities. However, 15 minutes later, the patient was found unconscious with neck entangled by the connection tube of a blood pressure (BP) machine. Resuscitation attempt was unsuccessful.

Learning Points:

1. Secure high-risk equipment out of patient reach whenever possible
2. Minimise use of long connection tubes for BP machines
3. Enhance psychosocial support for patients with terminal illness



Position of designated BP machine by bedside

Integrity Check Essentials: Lesson Learnt from Incidents

Broken Transvenous Pacing Wire Fragment

A patient had cardiac allograft vasculopathy with permanent pacemaker (PPM) underwent a redo heart transplantation, including removal of PPM. The operation was uneventful, and the patient was transferred to the Cardiothoracic Surgical Intensive Care Unit for post-operative care. Serial CXRs were arranged for monitoring.

On post-operative day 16, noted a linear line over right lower zone on a CXR, suspected to be a **remnant of the previous implant**, but considered clinically insignificant. A CT thorax confirmed the presence of a 3.4cm linear hyperdensity in the right lower lobe segmental pulmonary artery. The patient opted for conservative treatment after discussion.

Learning Points

01

Include the risks and complications of retained foreign body in the informed consent form for heart transplant with pacemaker removal

02

Ensure thorough checking of integrity and completeness of removed implant, especially for those **long-term implants where fracture / metal fatigue / adhesion is expected**

Segment of Jackson Pratt (JP) Drain

A patient with increased hydrocephalus underwent bilateral cranioplasty with the insertion of an external ventricular drain (EVD). Two JP drains, **cut to appropriate length**, were placed during the operation. Two days later, the **JP drains and the EVD were removed at bedside**.

Upon readmission for hydrocephalus two months later, a CT scan revealed a **retained segment of the JP drain** on the right side of the scalp, which was successfully surgically removed.



01

Explore surgical wound drains of different lengths to **reduce the need for cutting drains** during operations

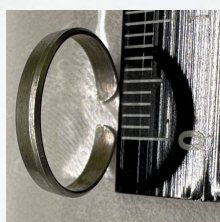
02

Enhance the **accuracy of integrity checks** for surgical wound drains that have been cut during insertion:

- ✓ Explore ways to facilitate identification of the cut point on the drain;
- ✓ Documenting the drain details in the operation record and crosschecking against it upon drain removal

Metal C-Ring

A patient had **emergency nailing** due to left trochanteric femur fracture. The operation was uneventful, no instrument parts appeared to be detached during the surgery or instrument checks. Later, while disinfecting and packing equipment in the Theatre Sterile Supply Unit, a **metal ring from the targeting device** was found missing. An X-ray revealed that the metal ring had been retained inside the body, which was successfully surgically removed.



Attention: The C-Ring on the targeting device **could be detached** from the targeting device due to **looseness or an enlarged gap**

Perform an **immediate on-table integrity check** upon removal of the targeting device, and review the checking methods



Broken Angiocatheter

A patient with suspected ovarian cancer underwent abdominal tapping for ascites drainage, using a 16-gauge angiocatheter. The procedure was uneventful, and the angiocatheter remained in place for continuous drainage for 9 days.



Upon removal, the doctor noticed that **the retrieved catheter appeared shorter than expected**. The doctor sought clarification of its length from a nurse and **documented "tip intact"** in the records while awaiting confirmation. The following day, during another diagnostic operation, a 6.5cm fragment of the angiocatheter shaft was found in the abdominal cavity and successfully retrieved.

Learning Points

01

Angiocatheter may be prone to breaking if left inside body for a prolonged period – Use appropriate instrument set for abdominal tapping / paracentesis

02

Enhance documentation and communication, including specifying the type of instrument used

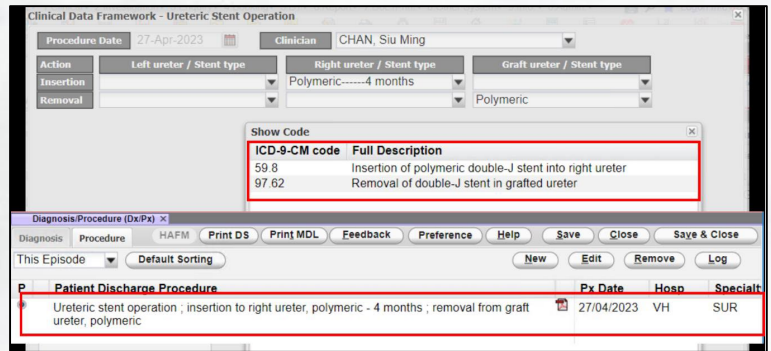
03

Conduct integrity checks on instruments upon removal; and document the condition of removed catheter in patient's record

JJ Stent

A patient with a history of renal stones, had been receiving follow-up care at an urology clinic. A referral letter was issued to reschedule an appointment. Six months later, an **urgent JJ stent insertion** was performed during an admission for urosepsis. Upon discharge, a **new referral letter** stating the urgent stent insertion was issued.

At the urology follow-up, **the referral letter concerning the urgent stent insertion could not be found** in the patient's record; only the initial referral letter was present. The doctor, after reviewing an magnetic resonance cholangiopancreatography (MRCP) results that showed no stones with no hydronephrosis, then closed the case. Later, the patient was admitted for dysuria, X-ray and CT scan indicated a 3.3 cm encrustation on the stent's distal coil, which was then removed.



Clinical Data Framework (CDF)

01

Ureteric stent operation CDF was newly developed to safeguard ureteric stent could be removed within specific timeframe

02

Strengthen the comprehensive review of patient's clinical history during follow up, emphasising same speciality entries

Broken Tip Of Nasogastric (NG) Tube

An old age home (OAH) resident on long-term NG tube feeding had a history of repeated pulling out the NG tube. Reinsertion of NG tubes were performed by Community Geriatric Assessment Service (CGAS) nurses and an OAH nurse. After each removal, CGAS nurses documented the tube integrity as "without defects", whereas there were no records of NG tube insertions by the OAH nurse.

The patient was later admitted for fever. An abdominal X-ray revealed two NG tube tips below the diaphragm, which were then successfully removed.



01

CGAS nurse should verify and counter-check NG tube integrity with OAH staff for traceability

02

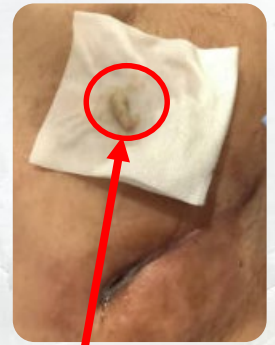
Conduct X-ray if a retained NG tube is suspected

03

Consider the option of PEG feeding in cases of uncooperative patients

Cotton-like Material

A patient admitted for right upper quadrant pain, underwent **urgent laparoscopic appendectomy**. Following the surgery, a wound nurse observed a gapped surgical wound and performed wound irrigation and packing. The wound was primarily under the care of wound team, with ward nurses support. One month later, during a routine wound assessment, a wound nurse discovered a **cotton-like material** after irrigation.



Cotton bud

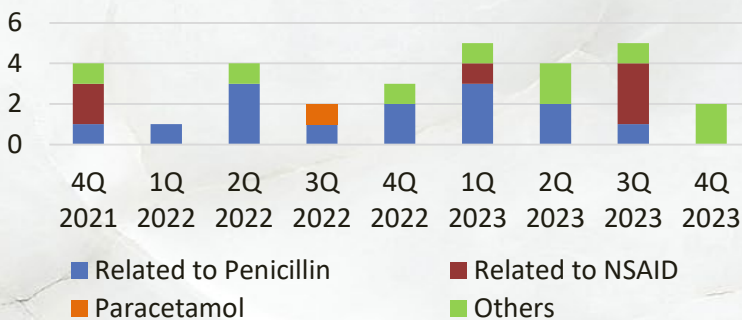
Learning Points

1. Wound care advices, including risk precautions and methods of wound packing, should be clearly **documented** to facilitate **communication between wound team and ward nurses**
2. Check integrity of any instrument / material placed inside a wound or body cavity

SERIOUS UNTOWARD EVENT

Of the 19 SUE cases reported in 4Q 2023, ALL cases were related to medication errors, including known drug allergy (KDA) (2), anticoagulants (7), chemotherapy agents (1), dangerous drug (1), vasopressors and inotropes (1), insulin (2) and others (5).

Number of **KDA** cases (4Q 2021 – 4Q 2023)



Known Allergy	Allergen prescribed
Ofloxacin	Tarivid
Chlorhexidine gluconate	Chlorhexidine gluconate solution 2% tinted in 70% v/v Isopropyl alcohol

Medication Errors - Adrenaline

- A patient with shortness of breath and fever developed **anaphylactic shock**
- Dr X suggested intramuscular injection IMI 0.5ml (i.e. 0.5mg) Adrenaline 1:1000 over left lateral thigh
- Dr Y input 5mg Adrenaline 1:1000 on IPMOE
- Nurses administered 5mg Adrenaline 1:1000 IMI according to the prescription.



0.5ml Adrenaline 1:1000 is equivalent to 0.5mg Adrenaline 1:1000 (1mg/ml)

Learning Point

01

Add departmental IPMOE prescription template for IMI Adrenaline for anaphylactic shock

ANAPHYLAXIS

- An acute, potentially life-threatening, multisystem syndrome caused by release of mast cell mediators into the systemic circulation

Clinical criteria (any one of three)

1. Acute onset of mucocutaneous involvement (e.g. urticaria, flushing, pruritus, angioedema) PLUS
 - a. Respiratory compromise (e.g. dyspnoea, wheeze, stridor, reduced PEF, hypoxaemia) AND/OR
 - b. ↓ BP or associated symptoms (e.g. syncope, incontinence)
 2. Two or more of the following after exposure to **likely** allergen
 - a. Mucocutaneous involvement
 - b. Respiratory compromise
 - c. Reduced BP or associated symptoms
 - d. Persistent gastrointestinal symptoms (e.g. cramps, vomiting)
 3. ↓ BP or associated symptoms after exposure to **known** allergen
- Common causes: Food, medications, radiocontrast, venoms, exercise
Symptoms and signs usually occur within 1 hour of exposure

Management

- **Administer adrenaline without delay**
 - **0.01 mg/kg IM** into lateral thigh, up to **maximum 0.5 mg (0.5 ml)** of adrenaline 1:1000
 - May be repeated **every 5 minutes** as needed
 - Consult ICU & adrenaline infusion if refractory
 - Initiate acute management and resuscitation (see algorithm)
 - Send blood for tryptase (preferably <4 hours after anaphylaxis)
(Can be stored as clotted blood at 4°C prior to consultation) *
 - Acute sample: preferably 30 mins to 4 hours after event
 - Baseline sample: > 24 hours after event
 - If risk of recurrence: prescribe adrenaline auto-injector & training
 - Referral to Immunology & Allergy for work-up and management
 - Accurate diagnosis and appropriate avoidance advice are imperative to avoid unnecessary avoidance or inadvertent re-exposure
- * Blood may be sent to QMH Immunology Lab after consultation

Medication Errors – Heparin & Warfarin

1. Extra dose of **Heparin** was injected to HD catheter

Patient A, with a hemodialysis (HD) catheter, was admitted to a medical ward for fever

- Dr B **ordered blood culture from “central” catheter**
- Dr C **drew blood from the HD catheter** with reference to **Central Venous Catheter (CVC) management guidelines**.
- Dr C **injected 4ml of Heparin (1:1000) into each of the “Arterial” & “Venous” lumens** for priming the HD catheters
- Dr B later found the correct priming volume for the HD catheter should be 1.9ml for the “A” lumen; and 2ml for the “V” lumen.

An extra 4.1ml of Heparin was administered

2. 8000iu **Heparin** was injected to PICC

Patient B, with a peripherally inserted central catheter (PICC), presented with fever at the AED

- Dr prepared to draw blood from the PICC and requested Heparin from a nurse, while the standard protocol should be heparinised saline. Two vials of Heparin (1000IU/ml) was provided to the doctor
- Dr **flushed** both PICC ports with 10ml of normal saline, followed by **approximately 4ml Heparin (4000IU) per port, resulting in a total of around 8000iu of Heparin administered**



A total of around 8ml of Heparin was administered

Learning Points

Training & Education

1. Reinforce **differentiation between HD catheter and CVC in induction programs**
2. Enhance staff training on central catheter management and flushing practices
3. Ensure only qualified and trained staff manage central catheters

Guidelines & Protocols

Revise and clearly title the Guidelines for HD catheter and CVC management, with detailed instructions on catheter locking for HD catheter, and priming for CVC, along with the required volumes and solutions. Add visual aids for better understanding.

Communication & Documentation

Specify “HD catheter” in communications, instead of the unclear term “central catheter”

System Enhancement

Explore the feasibility of implementing medication prescribing template for HD catheter priming on IPMOE

Extra dose of **Warfarin** was prescribed and administered to a patient

- On the date of the incident, a patient with an INR 1.6 result, **received two separate doses of Warfarin due to prescriptions by two doctors separately**
- Initially, Dr A prescribed **Warfarin Sodium tablet 6mg once for 1 dose by remote** IPMOE, which was administered by two nurses
- Later that day, Dr B, upon reviewing INR result in ward, prescribed another dose of **Warfarin Sodium tablet 7mg once for 1 dose** on IPMOE, which was administered by another two nurses
- Both prescription were verified by a pharmacist after reviewing the **“Active” drug list**
- The duplicate prescription was identified the next day. The patient condition is stable.

01

Prescribe the frequency using "Once Per Day for 1 Day" for Warfarin titration

02

Review the full drug profile before prescription

03

Ensure clear documentation and effective communication between doctors and nurses

Medication Errors – Insulin

1. Insulin Lantus Solostar (long-acting)

A diabetic patient was initially on BD blood glucose monitoring (H'stix) . She had oral antidiabetic medication and **insulin Lantus Solostar 12 units OM**.

- The frequency of H'stix was reduced to **BD alternate day**
- Despite the revised schedule, an additional H'stix was performed in the next morning, during the last hour of night shift. The H'stix result was **misread as 6.3 mmol/L** instead of the **actual 3.6 mmol/L**.
- The reading was not documented in the patient's paper record, and the Point of Care Testing (POCT) machine was **not immediately docked** at the station, delaying the upload of data to the CMS. Lantus Solostar was administered as scheduled.
- Later, once the POCT machine was docked and the data uploaded, another nurse identified the hypoglycemic reading and confirmed it with a recheck. The patient's condition remained stable.

01

Ensure to set an appropriate prescription start date

02

Counter-check newly prescribed or amended medications for scheduling & acknowledgment on IPMOE

03

Allocate insulin injections routine to AM shift; preventing task congestion in last hour of night shift

2. Insulin Degludec (long-acting)

Due to fluctuating blood glucose level, **insulin Degludec and Actrapid HM sliding scale** were prescribed for a diabetic patient

- Degludec 6 units were administered as scheduled **in the morning**
- During the same day's morning round, Dr A intended to **switch Degludec injection time to noon starting from the next day**. He prescribed "*Insulin Degludec 6 units at noon*" in IPMOE, but **set the start date as the current date** instead of the next day
- Nurse C noted the intended start date was the next day but did not document it
- Degludec 6 units was administered at noon, with the patient remaining stable after treatment.

O2 cylinder Safety Quiz: Revealing the Answers (HARA Issue #72)

	Question	Answer
1	What steps should be followed before using an oxygen cylinder?	B. Open valve → Check O2 Level → Set prescribed Flow Rate
2	What factor(s) might cause the actual duration of a FULL O2 cylinder to deviate from the estimated time?	D. All of the above
3	What is the method of detecting a gas leak in an oxygen cylinder?	C. Hearing or feeling a hissing sound after opening the valve
4	When transporting a critically ill patient, what is the minimum level required in the oxygen cylinder?	C. 3/4 Full
5	During the use of a Pin-index Cylinder, if the pressure needle rapidly falls to zero when the flowmeter is turned on, what could be the cause and what should be the first action to correct it?	A. The valve is not fully open; ensure that the valve is properly opened



Big cheers to our colleagues who scored full marks on the "Quiz on O2 Cylinder Safety" in HARA's 72nd issue! A special gift is on its way to each winner in recognition of their perfect scores.



We encourage you to brush up on **oxygen cylinder safety knowledge**. Simply **scan the QR code** to access this crucial information.



Spread the knowledge with your colleagues – it's a collective stride towards excellence in patient care!



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Suggestion or feedback is most welcome. Please email us through HA intranet at address: [HO Patient Safety & Risk Management](#)