RISK ALERT

ISSUE 46 JUL 2017

A Risk Management Newsletter for Hospital Authority Healthcare Professionals

IN THIS ISSUE

Risk Mitigation Strategy
Dispensing: from Principles to Tips

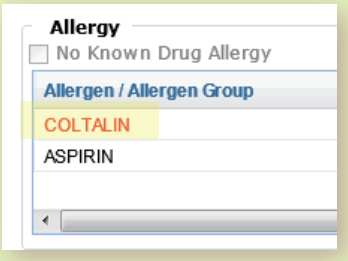
Verification of Prescription

Principle

Pay attention to drug-related records not subject to system checking
(e.g. **Free-text drug allergy history**)

Tips of Good Practice

Print and highlight details of drug-related allergy / ADR/ alert information not subject to system checking.
Attach the prescription for checking and potential intervention.



Drug Dispensing

Principle

Ensure safety measures are in place to facilitate differentiation of **look-alike sound-alike drugs (LASAD)**

Tips of Good Practice

Attach images of preparations (e.g. different types of Insulins) at dispensing point for easy reference.

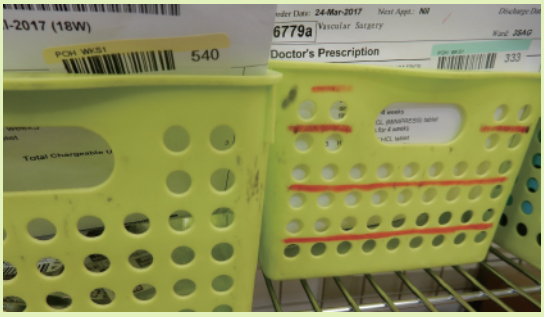
Drug Issuing

Principle

Ensure the dispensed drugs are issued to **correct patient**

Tips of Good Practice

Use out-patient ticket labels with different colour stripes for different days of the week, to differentiate dispensed medications on different dates with the same ticket number.



Opening Message

What's next in clinical risk management

When the Hospital Authority introduced the Sentinel Event (SE) Policy in 2007 and Serious Untoward Events (SUE) Policy in 2010, Root Cause Analysis (RCA) was adopted as a tool to find out the cause of medical incidents, look for ways for improvement and minimize the likelihood of recurrence of such incidents.

Over the years, many RCA have been performed. Lessons from these RCA have been disseminated through various learning and sharing activities. It is not difficult to notice that some types of incidents tend to recur with similar resulting recommendations in some ways. If so, could we do less RCA in future? If yes, should it be "less" in number or "less" in complexity? How about collective analysis?

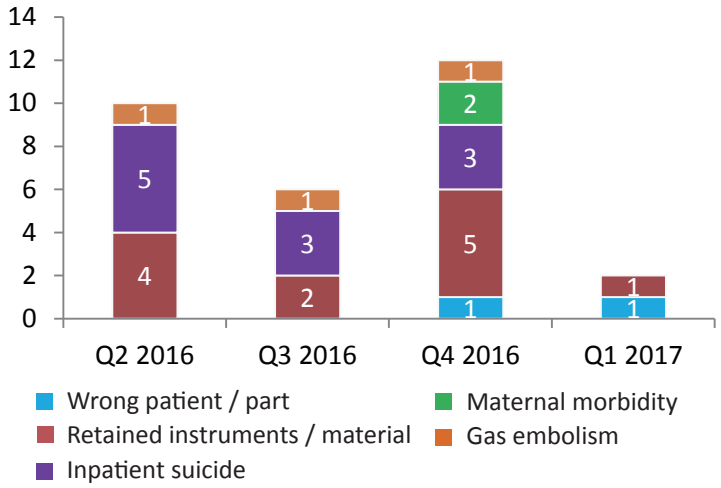
It is also not difficult to see that while improvement measures may vary depending on the nature of incidents, some types of incidents share many similarities and have a greater tendency to recur. For such incidents, the introduction of various risk mitigation strategies can help us to reduce error systemically. As illustrations, the introduction of the 2D barcode system in HA has been very successful in reducing the risk of misidentification. The surgical safety checklist has been demonstrated to be an effective risk reduction tool to greatly enhance surgical safety locally and overseas. The Inpatient Medication Order Entry (IPMOE) system will prove to be another milestone in improving medication safety as we have already seen convincing evidence of its efficacy in reducing medication error.

So what's next in clinical risk management? While we have some familiar "old friends" in our risk registry which we are more ready to deal with, we know that new clinical risks will keep on coming up. Hence, we have to be vigilant always. After all, identifying and tackling clinical risks and ensuring patient safety will continue to be one of our greatest challenges requiring the concerted efforts of all our colleagues in HA.

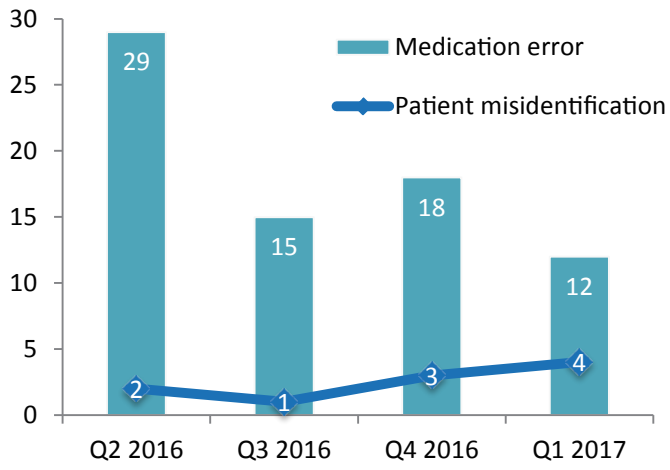
Dr Tony KO, Cluster Chief Executive, NTWC

SE & SUE Statistics

Distribution of SE in the last four quarters



Distribution of SUE in the last four quarters



Wrong Side Craniotomy

A patient was transferred to an acute hospital for managing intracranial haemorrhage.

1

Urgent CT Brain
Subarachnoid haemorrhage & hydrocephalus

CT Angiogram
Ruptured **RIGHT** middle cerebral artery aneurysm

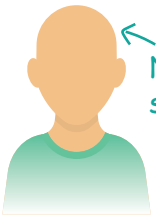
Patient had increased intracranial pressure

2

*Neither the image nor the report of CT angiogram were available on CMS

3

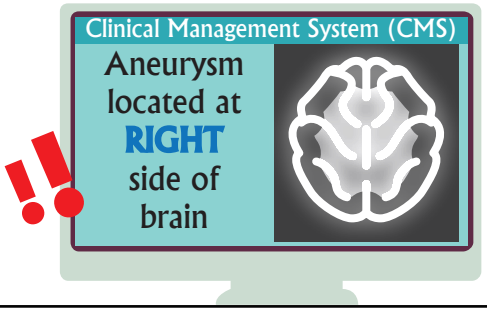
Conducted the time-out procedure



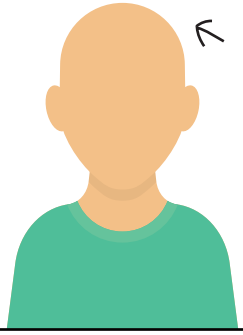
LEFT craniotomy was performed

4

During the operation...



5



- Placed back the bone flap on the **LEFT** side
- Proceeded to perform **RIGHT** craniotomy after disclosing to the patient's family

6

The patient had made good recovery after the operation

The RCA panel identified the following

1. The team had made their best effort in arranging radiological investigation for the patient in an emergency situation, and in making a timely diagnosis and treatment plan.
2. Since the patient was in critical condition, the team decided to arrange an urgent craniotomy before the radiological images were uploaded to Clinical Management System (CMS). Based on recollection of preliminary computed tomography (CT) angiogram images, the neurosurgeon perceived that the aneurysm was located in the patient's LEFT brain.
3. The team had followed the standard protocols to perform a "time-out" procedure, including checking of patient identity, surgical site and adverse drug reactions etc., before the operation.

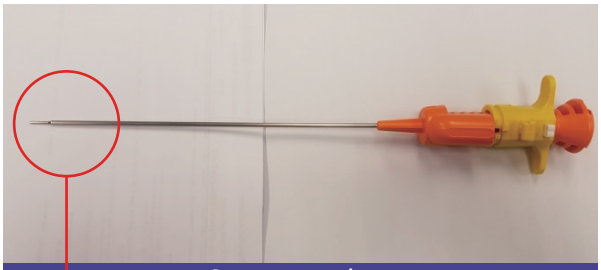
Recommendations

1. Explore the feasibility of uploading source images to CMS as soon as possible for pre-operative checking.
2. Review and revise the management protocols and checklists for surgical safety to include marking of surgical site and checking of radiological images during the "time-out" procedure.
3. Explore the feasibility of conducting a second "time-out" procedure before the skin incision.
4. Reinforce the practice of having surgeons, anaesthetists and nurses to sign on the Surgical Safety Checklist.

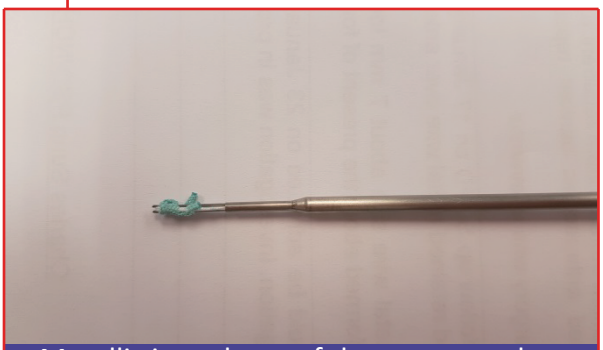
Retained Instruments / Material

Broken metallic wire

- A patient was admitted for RIGHT shoulder arthroscopic repair surgery. Four suture anchors were used during the operation.
- The operation was uneventful, except the surgeon found difficulties when retrieving one suture introducer during the operation.
- Follow up X-ray 6 weeks later revealed a 14mm x 1mm broken metallic wire in the patient's RIGHT glenoid cavity, which was likely to be the broken part of the metallic introducer of the suture anchor.
- The metal wire was retrieved in a subsequent operation successfully.



Suture anchor



Metallic introducer of the suture anchor

Key contributing factors

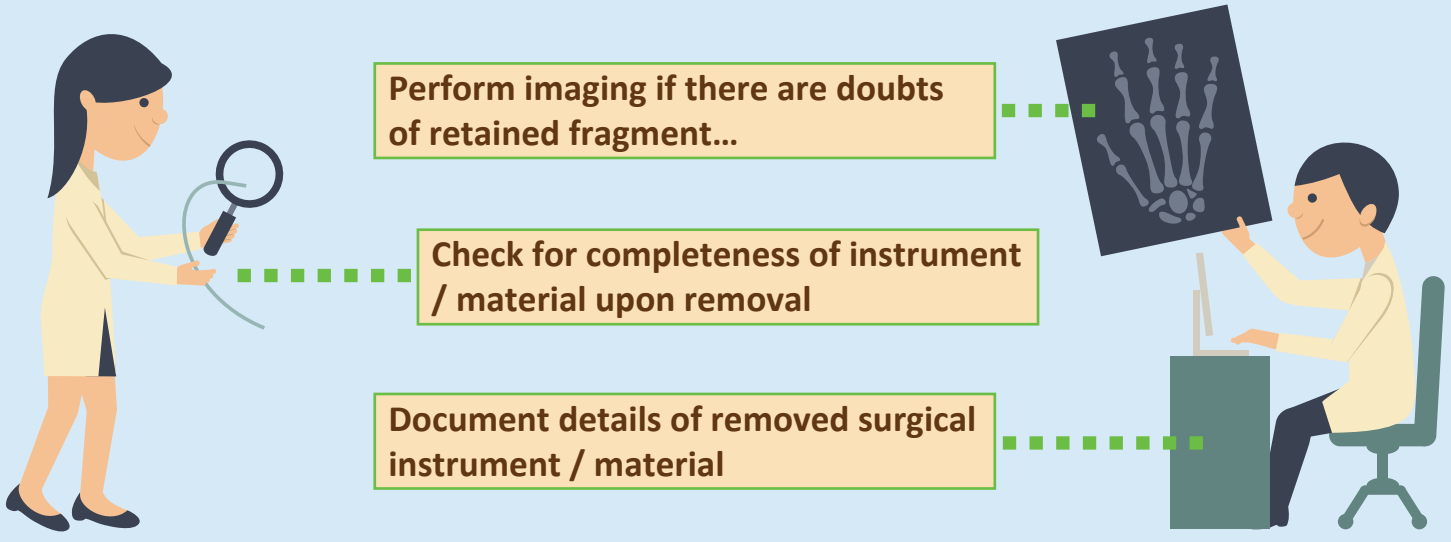
1. Inherent risks and special design of the suture anchor device.
2. Unaware of possible broken suture anchor fragment when encountering difficulties in retrieving the introducer.
3. The surgical team was unfamiliar with the newly introduced suture anchor device.

Recommendations

1. Alert all stakeholders on the risk of used instrument.
2. Perform radiological imaging when completeness of the used suture anchor is in doubt.
3. Improve communication among clinical team members to acquaint with the design and functional features of the suture anchor device before operation.

The retained broken metallic introducer

Risk Mitigation Strategy: Surgical Instrument / Material Removal

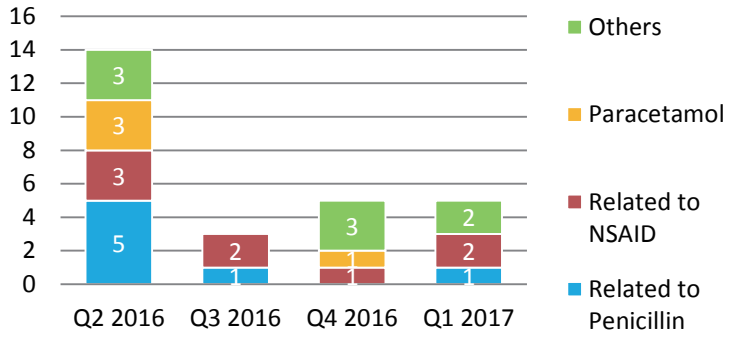


Serious Untoward Events

Of the 16 SUE cases reported in Q1 2017, 12 were medication error and 4 were patient misidentification. The medication error cases involved giving known drug allergen (KDA) to patients (5), insulin (3), anticoagulant (1), antiplatelet (1) and others (2).

Of the 5 known drug allergen cases, 1 developed mild symptoms which subsided after treatment. The others had no allergic reaction.

Number of KDA cases in the last four quarters



Known Allergy	Allergen prescribed
Aspirin	Ketorolac
Naproxen	Naproxen
Penicillin	Cefuroxime
Alphagan-P eye drops	Alphagan-P eye drops
Gelofusine	Gelofusine

Medication Error

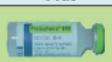
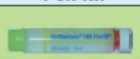
Double prescription and administration of insulin

- A patient with diabetes mellitus was admitted to medical ward for deranged liver function.
- Nine medications, including Protaphane and Linagliptin, were prescribed to the patient in IPMOE upon admission.
- Four days later, doctor signed off Augmentin, Protaphane and Linagliptin, and started Lantus Solostar instead. The instruction was written in the medical note.
- Subsequently, the doctor entered the prescription through IPMOE system but missed to sign off Protaphane.
- Both Protaphane and Lantus Solostar were administered to the patient the next morning.
- The patient did not have any hypoglycemic symptoms after the injection.

When prescribing in IPMOE, check and ensure that the prescription aligns with clinical record

Lantus Solostar is a long-acting insulin which is seldom administered with Protaphane. Staff should refer to the recommendation for insulin administration when in doubt.

Description	Administration	Brand Name (Generic Name)	Action Profile	Drug preparation	
				Vial	Disposable pen
Long Acting Insulin Analogue	OM or Nocte or specified (Disregard of meal time)	Levemir FlexPen (Detemir)	Onset: 1 to 2 hours Peak: no pronounced peak Duration: 24hours	NA	
		Lantus (Glargine) Lantus SoloStar (Glargine)	Onset: 1 to 2 hours Peak: no pronounced peak Duration: 24 hours		

Description	Administration	Brand Name	Action Profile	Drug preparation	
				Vial	Pen fill
Intermediate Acting Insulin	30 minutes before meals or specified	Protaphane	Onset: 1.5 hour Peak: 4 to 12 hours Duration: 24 hours		
		Humulin N	Onset: 1 hour Peak: 4 to 10 hours Duration: 16 to 18 hours		

Reference: NTEC Safe Insulin Therapy Workgroup – Recommendation for Insulin Administration in NTEC Clinical Areas

Medication Error

Known Drug Allergy – Low alertness of reported allergy

- A patient attended Accident and Emergency Department (AED) for ankle sprain.
- An allergy card showing Naproxen allergy was presented to a triage nurse who documented the allergy on the AED record.
- Doctor noted the allergy history of patient but did not enter the allergy information in CMS.
- Naproxen was prescribed to the patient after assessment.
- Patient developed eyelid swelling and skin rash which subsided after treatment.

Enter patients' drug allergy history in CMS immediately

Known Drug Allergy – Unawareness of cross-sensitivity between Ketorolac and Aspirin

- A patient with allergy history of Aspirin attended AED for low back pain.
- Doctor was not aware of the patient's allergy history, and prescribed Ketorolac for injection.
- Nurse did not know the cross-sensitivity between Ketorolac and Aspirin, and administered Ketorolac.
- The patient did not suffer from any allergic reactions.

Ketorolac and Aspirin are both related to nonsteroidal anti-inflammatory drugs (NSAID)

Beware of cross-sensitivity among different drug groups. Refer to the "Cross-allergy Reference Table" if in doubt.

Reference:
HA Guideline on Known Drug Allergy Checking, page 5

NSAIDS / COX II Inhibitors
Aspirin
Aspirin + Glycine (Cardiprin®)
Celecoxib (Celebrex®)
Diclofenac Potassium (Cataflam®)
Diclofenac Sodium (Voltaren®)
Etoricoxib (Arcoxia®)
Ibuprofen (Brufen®)
Indomethacin (Indocid®)
Ketorolac (Toradol®)
Mefenamic Acid (Ponstan®)
Naproxen (Naprosyn®)
Piroxicam (Feldene®)
Sulindac (Clinoril®)
Possible Cross Sensitivity with NSAIDS
Ammonia and Liquorice#
Benzydamine (Difflam®)
Cocillana compound#
Mesalazine
Neozep®
Salicylate / Salicylic acid
Sulphasalazine
Thymol gargle compound

Contain Senega root: Contraindicated in patients with aspirin or salicylate hypersensitivity

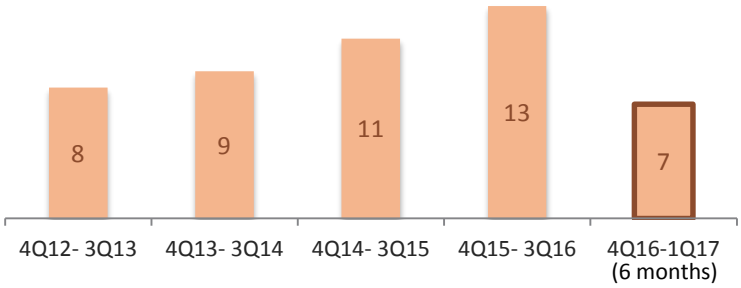
PENICILLINS	CEPHALOSPORINS
Amoxycillin (Amoxil®) (亞莫西林/ 羥氨苄青霉素)	Cefaclor (Ceclor®) (頭孢克洛)
Amoxycillin + Clavulanic Acid (Augmentin®) (亞莫西林+克拉維酸)	Cefazolin (Cefamezin®) (頭孢唑啉)
Ampicillin (氨苄西林/ 氨苄青霉素)	Cefepime (Maxipime®) (頭孢吡肟)
Ampicillin + Sulbactam (Unasyn®) (氨苄西林+ 舒巴坦)	Cefoperazone + Sulbactam (Sulperazon®) (頭孢哌酮+舒巴坦)
Benzathine Penicillin (苄星青霉素)	Cefotaxime (Claforan®) (頭孢噻肟)
Benzylpenicillin (Penicillin G) (苄青霉素/ 青霉素 G)	Ceftazidime (Fortum®) (頭孢他啶)
Cloxacillin (Orbenin®) (氯唑西林/ 鄰氯青霉素)	Ceftibuten (Cedax®) (頭孢布烯)
Flucloxacillin (氟氯西林/ 氟氯青霉素)	Ceftriaxone (Rocephin®) (頭孢曲松)
Phenoxymethylpenicillin (Penicillin V) (苯氧甲基青霉素/ 青霉素 V)	Cefuroxime (Zinnat®/Zinacef®) (頭孢呋辛)
Piperacillin (Pipracil®) (哌拉西林)	Cephalexin (Keflex®) (頭孢氨苄)
Piperacillin + Tazobactam (Tazocin®) (哌拉西林+他唑巴坦)	Cephradine (Velosef®) (頭孢拉定)
Procaine Penicillin (普魯卡因青霉素)	**CARBAPENEMS**
Ticarcillin + Clavulanic Acid (Timentin®) (替卡西林+克拉維酸)	Doripenem (Doribax®) (多尼培南)
	Ertapenem (Invanz®) (厄他培南)
Drugs structurally related to penicillin	Imipenem + Cilastatin (Tienam®) (亞胺培南+西拉司丁)
Penicillamine (青霉胺)	Meropenem (Meronem®) (美羅培南)

Patient Misidentification

There was an increasing trend on SUE related to Patient Misidentification since Q4 2012.

A total of 7 cases were reported in the past 6 months as summarized below:

Yearly trend of SUE – patient misidentification



Patient Misidentification Scenarios	Q4 2016	Q1 2017
Mixing up patients' sample in laboratory	1	
Mis-selecting patient's images for reporting	1	
During drug dispensing	1	
During drug administration		2
During drug prescription		1
Misfiling patient's laboratory report		1

Drug Administration

There were 2 cases of patient misidentification during drug administration. Both patients did not have any significant consequences.

Contributing factors:

- Lack of clear understanding on proper patient identity checking procedures during drug administration.
- Failure to comply with guidelines on medication management.

Strictly adhere to patient identity checking procedures before drug administration (e.g. verify by core identifier, check against patient bracelet)

Drug Prescription

- Warfarin was ordered for patient B who was admitted for lower limb deep vein thrombosis.
- The prescription was written on patient B's medical notes. A reminder was noted in the white board.
- Subsequently, the doctor wrongly prescribed Warfarin in IPMOE for patient A instead of patient B.
- One dose of Warfarin was given to patient A.
- Patient A did not have any signs of bleeding complication.

Contributing factor:

No checking of medication orders written on patient's medical notes during prescription.

Before initiating any prescription, check the patient information and the medical notes if necessary

Misfiling Laboratory Report

Patient C's laboratory report was wrongly filed into patient D's medical note, which led to unnecessary drug prescription to patient D. Patient D did not have any adverse effects.

Contributing factor:

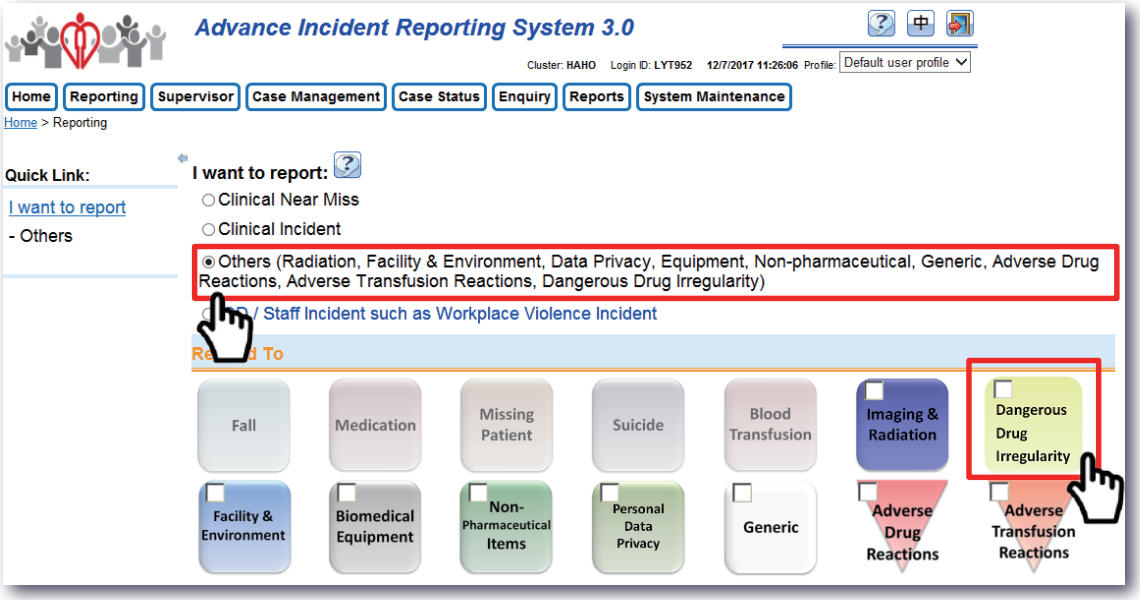
Non compliance with patient identification checking before filing patient's laboratory report and drug prescription.

Matching correct patient identity upon filing patient's report

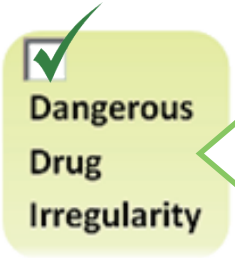
Local Sharing

New Template in Advance Incident Reporting System (AIRS) Dangerous Drug Irregularity (DDI)

With effect from 21 June 2017, AIRS has been enhanced to include a designated template to facilitate reporting, notification and monitoring of dangerous drug irregularity incidents.

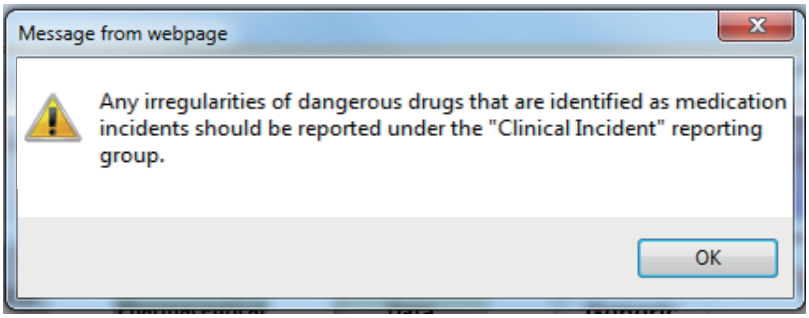


What is DDI?



1. **Discrepancy in DD stock quantity** - the quantity of physical stock of dangerous drug is different from the record;
2. **Unauthorized possession of DD** - a dangerous drug is in the possession of a person not authorized for such possession; or
3. **Unauthorized supply of DD** - a dangerous drug has not been supplied to or supplied or dispensed by a person in accordance with the Dangerous Drugs Ordinance.

AIRS will remind staff to report medication incident involving dangerous drugs under the group of "Clinical Incident".



Please refer to Guidelines on Handling of Dangerous Drugs in HA Hospitals or Workflow for DDI reporting for more detail